Gender Differences in Drinking Behavior: An Analysis of a Major Cause of the Mortality Crisis in Contemporary Russia

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Objective: Heavy alcohol use is the major cause of premature male mortality in contemporary Russia. This study examines gender differences in drinking behavior among Russians, focusing on how drinking patterns differ in terms of beverage type choice and volume. *Methods:* Results are based on multinomial logistic regression and ordinary least squares (OLS) regression analyses of the Russian Longitudinal Monitoring Survey-Higher School of Economics (RLMS-HSE) data. *Results:* Men and women in Russia have significantly different preferences for alcoholic beverages. Men have strong preferences for hard liquor, namely vodka, and they drink it in much larger amounts in comparison with women. Women are more likely to either refrain from drinking or drink mild types of alcoholic beverages, such as wine and beer. *Conclusion:* It is not alcohol use per se that is most important for understanding health and mortality among Russians, but differences in beverage types that are respectively consumed by men and women.

Few countries in history have experienced such drastic political, economic, and social changes as Russia has during the past two decades. Throughout the 1990s, Russia underwent extraordinary transformations and struggled to overcome its communist past. While the country has made remarkable progress, mostly in political and economic spheres, there remain important social problems. One of the major problems is a demographic crisis characterized by premature male mortality. Economically, women in Russia have been hit hard by the post-Soviet crisis. They have faced higher unemployment and greater reduction of purchasing power than their male counterparts (Boutenko and Razlogov 1997). Further, in addition to economic strains, women have experienced more acute psychological burdens than men throughout the transition process (Barrett and Buckley 2009). These findings lead us to assume that societal changes in contemporary Russia have most profoundly affected women's well-being. However, it is men who have faced extreme disadvantages in terms of physical health as well as longevity. For instance, the most recent figures, for 2009, show that male life expectancy at birth is 61.4 years, while female life expectancy is 74.2 years (Federal State Statistics Service 2010). Today, Russia has one of the largest gender gaps in life expectancy in the world (Cockerham et al. 2006).

A great deal of research implicates excessive alcohol consumption among men as a major contributor to the significant male-female differences in life expectancy in Russia (Leon and Chenet 1997; Chenet et al. 1998; Grogan 2006; Leon et al. 2009). High rates of death from cardiovascular disease, alcohol poisoning, and accidents, particularly among working-aged men, characterize the Russian mortality profile. In fact, males in Russia consume significantly more alcohol than females, and among them, binge drinking is a frequent phenomenon (Bobak et al. 1999). While studies examining excessive alcohol consumption patterns among Russian men abound, to date, little attention has been paid to gender differences in drinking practices. On the

one hand, women in Russia have gradually started to consume more alcohol (Hinote et al. 2009), but on the other hand, the impacts on health appear to be much weaker among women than among men. Fundamental questions then arise regarding the different effects of alcohol consumption by gender: How does individual drinking behavior differ between men and women in Russia? Why has alcohol use seemingly affected only men's health? To what extent do drinking patterns explain men's disadvantage and women's advantage in health and mortality?

The purpose of this paper is to examine drinking patterns among men and women in contemporary Russia. While prior research almost exclusively uses frequency and volume as focal measurements of alcohol consumption, the present study focuses on the types of beverages. Regression analyses demonstrate that men and women in Russia have significantly different preferences for alcoholic beverages, indicating that it is not alcohol use per se that is most important for understanding health and mortality among Russians, but beverage types that are respectively consumed by men and women. Excessive hard liquor consumption, namely vodka, deteriorates men's health, while moderate drinking of mild types of alcohol may have protected women from the drastic decline in health status characterizing men. Moreover, alcohol use, particularly vodka consumption, is a part of traditional male culture in Russia, and thus gender role orientations in Russian society account for men's preference for hard liquor. Fully understanding the cause of gender differentials in health outcomes in contemporary Russia requires research that examines gender-specific drinking behavior. Given the severity of the male mortality crisis, this issue is of fundamental importance for public health policy in Russia.

Alcohol Consumption and Physical Health Outcomes

Drinking alcohol is one of the most common health lifestyle practices. "Health lifestyles" refer to a set of individually constructed health-related behaviors based on choices from options

available to people (Cockerham 2005). Alcohol use, smoking, physical exercise, and diet constitute major health lifestyle choices, and these practices are related to various health outcomes (Himes 2011). For instance, one study in Ireland demonstrates that healthy lifestyles, involving being physically active, eating nutritious meals, refraining from smoking, and drinking in moderation, produce a fourteen-year improvement in life expectancy compared to those who do not employ these practices (Harrington et al. 2010).

While ample evidence suggests the positive effects of exercise, balanced diet, and non-smoking, inconsistent findings arise with regard to the impacts of drinking on health. On the one hand, heavy alcohol consumption causes a considerable burden of disease. For instance, heavy alcohol consumption significantly increases the risks of cardiovascular disease, diabetes, and coronary heart disease. On the other hand, the evidence of the impact of moderate drinking is far more complex. Previous studies report that the mortality risks associated with alcohol generally follow a U or J shape, with moderate use of alcohol more protective against disease and mortality than abstinence or excessive use (see Rogers et al. 2000). However, others suggest that a part of the positive effects of moderate drinking may be due to confounding factors. Naimi et al. (2005) argue that moderate drinkers often have better socioeconomic status (SES) than non-drinkers, and this underlying condition accounts for the health advantages of moderate drinkers. Thus, although it is well documented that excessive alcohol use has the detrimental effects on health, the evidence for the association between moderate alcohol consumption and health outcome is mixed.

In addition to the impacts on health, researchers explore socio-demographic factors that predict individual alcohol consumption. Gender is a key determinant of drinking practices. Overall, alcohol consumption is higher among men than among women (World Health

Organization 2004). Further, Kerr et al. (2009b) find evidence for differences in beverage choice by gender: hard liquor drinks are more popular among men than among women. Age is also associated with alcohol consumption. A longitudinal study in the United States reports overall decline in the volume and frequency of alcohol use with age (Kerr et al. 2009a).

Furthermore, SES influences health outcomes through multiple risks and protective mechanisms (Link and Phelan 1995). First, a number of studies discover an association between employment status and health outcomes. For instance, unemployment is correlated with negative health lifestyles, including alcohol consumption. In this regard, a causal relationship may go either way; a person's heavy drinking behavior may result in job loss (Mullahy and Sindelar 1996) or shocks from unemployment may lead to larger amounts of alcohol intake (Dooley and Prause 1998). Some argue that employment predicts increased drinking. Frone (1999) finds that employees often deal with work-related stress with alcoholic beverages. Income is also a key predictor of health outcomes (Bond Huie et al. 2003). Second, a substantial literature shows a relationship between education and health (e.g., Kitagawa and Hauser 1973; House et al. 1994; Ross and Wu 1995). There are mainly three sets of mechanisms through which education is associated with health outcomes: economic resources, socio-psychological resources, and health behaviors. Mirowsky and Ross (2005) argue that education strengthens an individual's sense of control over life and promotes healthy lifestyles. For example, compared to those persons with less education, those with more education are more likely to be physically active, refrain from smoking and drinking, maintain a healthy weight, and eat more nutritious meals (Hummer and Lariscy 2011). Third, marriage has protective effects against shocks in life. Married individuals are more likely to have positive health habits, better health status, and lower risks of mortality than their unmarried counterparts (Rogers 1995; Umberson et al. 2006). This positive effect of

marriage is more prevalent among men, since the chances that men employ risky behaviors, such as drinking, smoking and physical violence, are often diminished upon entry into marriage (Lillard and Waite 1995). These findings suggest that health lifestyles, including alcohol consumption, are affected by a number of demographic as well as socioeconomic factors.

Alcohol and the Mortality Crisis in Contemporary Russia

The health status of Russians has drastically declined since the collapse of the Soviet Union in 1991. Today, Russian male's life expectancy at birth is among the lowest in the developed world (Shkolnikov et al. 2001). Negative health lifestyles, including excessive alcohol consumption, are the most common explanation for men's poor health and high mortality (Leon and Chenet 1997). Almost 90% of males in Russia drink alcohol, and the proportion of heavy drinkers is much higher among men than among women (WHO 2004). In addition, over 70% of men smoke (WHO 2010).

While the health lifestyles explanation appears to be convincing, a growing body of evidence challenges the argument. In fact, alcohol consumption is becoming more popular among women. Empirical support for these changing female drinking practices comes from Hinote and his colleagues (2009), who find evidence for increased alcohol use among females in the post-Soviet countries. During Soviet times, women's roles were largely limited to the household, and alcohol use was more desirable for men (Kiblitskaya 2000). Today, women in Russia seek a break with the Soviet past through alcohol consumption, and the ideal of Western masculinity associated with independence and assertiveness have increased alcohol use among women (Van Gundy et al. 2005). A question then arises regarding the seemingly different effects of alcohol use between men and women. If the demise of the traditional Soviet norms has pushed

women toward alcohol consumption, why have Russian women not suffered from negative impacts of alcohol as much as men have? Why do the impacts of alcohol use differ by gender?

To answer these questions, it is necessary to examine the meaning of alcohol consumption in Russian society. Russia stands out not only for the prevalence of alcohol consumption, but also for people's strong preference for hard liquor, namely vodka. Russia has the second highest adult per capita consumption of hard liquor in the world (WHO 2004). In fact, traditional Russian culture and vodka are inseparable. Vodka is diminutive of the word, "voda," which means water in Russian, and literally, it has been "living water" for the Russian people (Christian 1990). The standard Russian vodka contains at least 40% alcohol, and Russians usually drink vodka without diluting it with non-alcoholic beverages. Moreover, vodka is closely related to Russian "macho" culture (Ryan 1995). The 1996 national survey shows that 11% of male respondents classified themselves as heavy vodka drinkers, whereas only 1% of females did (WHO 2004).

The idea of gender roles is the key to understanding drinking behavior among Russians. Social and institutional circumstances shape and reinforce masculinity among men and femininity among women (West and Zimmerman 1987). In the case of Russian society, the Soviet government established male identity based on their status as workers or soldiers in the public sphere, and male dominance was regarded as a social norm (Kay 2006). In fact, alcohol consumption, particularly vodka, is closely related to male roles in Russian society. Vodka consumption originated in a rural peasant culture. Yet, upon the establishment of the Soviet Union, vodka was removed from rural traditions and extended into the Soviet-style mechanized culture, as the heavy industrialization transformed peasants into industrial workers (Cockerham 2000). In addition, in the Soviet working tradition, drinking with workmates was a key element

of socialization. Alongside providing financial resources for their family, men should have their own personal money for socializing with their colleagues, which involved drinking alcohol (Kiblitskaya 2000). These arguments provide evidence that vodka consumption is deeply rooted in Russian male culture, constituting an important element of male identity. In contrast to many countries in the world, drinking alcohol is by no means a social stigma in Russia, but rather, it is a social norm related to male roles (Cockerham 2000).

Given the crucial role of alcohol consumption, particularly vodka, in Russian society, it is important to consider beverage type for monitoring the fundamental characteristics of drinking patterns among Russians. In fact, previous studies almost exclusively focus on the frequency and volume as focal measures of alcohol use (see Cockerham 2000; Nicholson et al. 2005a). This approach is especially misleading in the case of Russia, since it ignores the distinct drinking style among Russians. Prevailing drinking customs among Russians involve rapid group consumption of large doses of vodka, and consumption where participants are expected to drink continuously, but not on a daily basis. Indeed, the measurement of volume captures the important element of drinking behavior prevalent among Russians. Yet, it uses the amount of specific alcoholic beverages (e.g. vodka and wine) as a default and thus fails to elucidate the dynamics behind the decision making process regarding individuals' beverage type choice. Given the special role of vodka associated with traditional male roles in Russian society, it is important to consider the types of alcoholic beverages that are respectively consumed by men and women.

Consequently, the focus of the present study is to examine how beverage type choice and volume of alcohol use differ by gender. With the growing interest in the role of alcohol in high male mortality, researchers have begun to attend to the mechanism through which alcohol affects Russians' health outcomes (e.g., Cockerham 2000; Nicholson et al. 2005a; Leon et al. 2009).

These studies, however, have not focused on the types of beverages consumed by individuals, and thus they fail to elucidate the factors that account for men's disadvantage and women's advantage in health and mortality. Investigation into gender differences in beverage type choice is the key to fully understanding the mechanism of the significant gender gap in health outcomes in Russia. From this standpoint, the following questions are proposed in the present study: (1) how do drinking behaviors differ by gender in terms of beverage type choice? (2) how is the volume of alcohol consumption different across beverage type among men and women? (3) and what specific socio-demographic factors contribute to increased risks of alcohol consumption among Russians?

Hypotheses

The analysis addresses two core hypotheses: (1) men and women in Russia have different preferences for the types of alcoholic beverages. Specifically, men are more likely to drink hard liquor than women; (2) and men and women consume different amounts of alcohol, depending on beverage type. Based on hypothesis (1), I expect that men drink larger amounts of hard liquor in comparison with women.

Methods

Sample

The data for this study come from the Russian Longitudinal Monitoring Survey of Higher School of Economics (RLMS-HSE). The RLMS-HSE is a household-based survey designed to monitor socioeconomic conditions of the population, using interview-administered questionnaires (Zhang and Sean-Shong 2007). It is representative of all non-institutionalized

individuals living in households in Russia. In this study, I use data from Round 13, collected between September and December 2004. I limited the analysis of respondents aged 18 and older (between 18 and 101 years of age), reflecting the legal age for drinking. Individuals with missing data on variables of interest were excluded from the analyses, which resulted in a total of 9,813 individuals (male = 4,141, female = 5,672) for the final sample of the study.

Measures

Self-reported alcohol consumption is the primary outcome variable. The alcohol use index is based on the following three questions: (a) "In the last 30 days, have you consumed alcoholic beverages?" (b) "Which of these beverages did you drink in the last 30 days?" and (c) "How many grams did you drink per day?" Response categories to question (b) are "beer, home-brewed beer," "dry wine, champagne," "fortified wine," "homemade liquor," "vodka or other hard liquor," and "anything else." First, based on answers to question (b), I created three categories: no alcohol use, hard liquor, and alcoholic beverages except hard liquor (e.g. wine and beer). I classified those who reported hard liquor consumption into the "hard liquor" category, even if they also consumed other types of alcoholic beverages. Second, in order to measure the volume of alcohol consumption, I created three categories of alcoholic beverages: hard liquor, wine (dry wine, champagne, and fortified wine combined), and beer. The categories are based on those who reported alcohol consumption in the last 30 days before the survey.

The major predictor variable is gender. It is coded as male and female (the referent). Age is scored in number of years. Socioeconomic characteristics are assessed with four variables. Employment status is coded 1 if the respondent is currently working full or part time and 0 otherwise. Income is assessed using a question that asks the total amount of money that the respondents received in the last 30 days. Due to the skewed distribution, I logarithmically

transformed this variable. Education is measured here in four categories: less than high school, high school, vocational training (e.g. medical, technical, pedagogical institutes), and college. I demarcate high school as the reference category. Marital status is coded 1 for currently married, 0 otherwise. Additionally, since individuals who consume alcohol are also more likely to smoke (Rogers et al. 2005), I test the effect of smoking. Cigarette smoking is measured by the number of cigarettes consumed by the respondents per day.

I use multinomial logistic regression and ordinary least squares (OLS) regression models to examine how drinking practices vary by gender in terms of beverage type and volume. The analysis has two parts. The first part examines gender differences in alcohol choice, focusing on three categories: no alcohol use, hard liquor, and alcoholic beverages except hard liquor. This model uses "no alcohol use" as the reference category, and estimates the odds that individuals either choose hard liquor or other types of alcohol as opposed to refraining from drinking. Given the large number of respondents who denied alcohol use in the last 30 days before the study, it is important to include the category of no alcohol use into the analysis in order to capture the dynamics of individual drinking behavior. The second part examines the volume of alcohol consumption, using the self-reported amount (grams) of hard liquor, wine, and beer that individuals consumed per day as dependent variables.

I employ a model building strategy that begins with the baseline model and progressively adds covariates for different sets of socio-demographic characteristics (Mirowsky 1999). The first model contains only gender and age. The second model adds measures of SES. The final model includes the full set of independent variables. Due to the correlation between smoking and drinking, I include the number of cigarettes into all the models as a control variable. Analyses throughout are conducted in Stata10 (StataCorp 2007).

Results

I begin by describing the key variables in the study. Table 1 presents proportions, means, and standard deviations for all variables included in the analysis. The distribution of the outcome variables shows that hard liquor consumption is much more prevalent among men than among women: 46% of male respondents consumed hard liquor in the last 30 days before the survey, while only 20% of females did. A similar result follows from volume. Men have a much higher mean of volume of hard liquor consumption than women. Concerning alcoholic beverages other than hard liquor, women tend to consume non-hard liquor alcohol, such as wine and beer, but men drink these beverages in much larger amounts. These results suggest that men exceed women in drinking, and in particular, hard liquor consumption is prevalent among men. Descriptive statistics report a relatively high share of non-drinkers among the respondents. 35% of men and 55% of women refrained from drinking alcohol in the last 30 days before the survey. Because descriptive statistics in Table 1 are useful but do not simultaneously control for multiple factors related to alcohol consumption, I turn to Table 2.

Hypothesis (1) Men and Women Have Different Preferences for Alcoholic Beverages

Table 2 shows strikingly different patterns of beverage type choice by gender. Men in Russia have strong preferences for hard liquor. Throughout the analysis, men consistently exhibit more than twice the odds of choosing hard liquor in comparison with women, net of all the socio-demographic variables. Model 1 shows that men have 152% higher odds of drinking hard liquor than women over the past month, controlling for age and the number of cigarettes (odds ratio [OR] = 2.52, $p<.001$). On the other hand, when the comparison is between drinking other types of alcoholic beverages or refraining from drinking, drinking behavior is not significantly

different between men and women. Men exhibit 5% lower odds of dinking wine or beer than women, but the result is not statistical significance at the .1 level. These patterns provide clear evidence in support of Russian men's strong preferences for hard liquor. Next, socioeconomic characteristics reduces men's odds of drinking hard liquor (OR from 2.52 to 2.32), although the gender difference remains statistically significant at the .001 level (model 2). Adding educational attainment and marital status in model 3 has limited impact on gender differences in drinking hard liquor. Men's odds of drinking hard liquor relative to refraining from drinking remain almost unchanged (from 2.32 to 2.27). Adjustment for socioeconomic characteristics produces no appreciable change in gender differences in drinking other types of alcoholic beverages relative to no alcohol use.

Next, I look at the effect of socio-demographic characteristics on beverage type choice. Models 2 and 3 in Table 2 allow me to examine the results often reported in previous studies about major predictors of alcohol consumption. Perhaps the most interesting finding follows from employment status (model 2). Being employed is strongly related to higher odds of alcohol use among Russians, and it is especially associated with hard liquor consumption. Those who are currently working have almost 90% higher odds of drinking hard liquor in comparison with those who are not working (OR=1.89, $p<.001$).[1] Employment status is also related to higher odds of drinking other alcoholic beverages relative to refraining from drinking (OR=1.20, $p<.05$). These findings demonstrate that employment status is a key predictor of alcohol use, particularly hard liquor consumption, in the Russian context. Higher levels of income are also related to increased alcohol consumption. Model 3 reveals an association between educational attainment and alcohol use. Compared to high school graduates, those who graduated from college have 55% higher odds of drinking hard liquor (OR = 1.55, $p<.001$), and their odds of drinking other types of

alcohol are almost twice as high (OR = 1.94, p<.001). Further, married individuals have higher odds of drinking alcohol compared to their unmarried counterparts. Research in the United States finds that entry into marriage promotes healthy lifestyles (Lillard and Waite 1995), but in Russia, marriage appears to be associated with increased alcohol consumption. Consistent with prior research, cigarette use is strongly associated with alcohol consumption.

To summarize briefly to this point, the regression results reveal sizable differences in beverage type choice by gender. Russian men are apt to choose hard liquor in lieu of other types of alcoholic beverages. In fact, men and women in Russia are not significantly different in terms of whether to drink other types of alcoholic beverages or to refrain from alcohol use, but when the choice is between to drink hard liquor and to refrain from alcohol use, men are much more likely to drink hard liquor than women. These results suggest that men in Russia have distinguishably strong preferences for hard liquor consumption. Employment, higher income, higher levels of education, and marriage, and cigarette use are important predictors of alcohol use among Russians. In particular, being employed is related to much higher odds of hard liquor consumption.

Hypothesis (2) Men and Women Drink Different Amounts of Alcohol by Beverage Types

Next, I examine gender differences in the volume of alcohol consumption. Table 3 presents the results from OLS regression models, using grams of hard liquor, wine, and beer as dependent variables. Recall that the results are based on those who reported alcohol use in the last 30 days before the study. For brevity only the results of the full model are shown. Two important patterns emerge. First, I observe clear gender differences in the volume of hard liquor consumption. Men drink 90 more grams of hard liquor than women on average, controlling for all the socio-demographic variables. This pattern provides compelling evidence in support of

Russian men's inclination toward hard liquor consumption. Men are apt not only to choose hard liquor in lieu of other alcoholic beverages, but also to drink it in much larger amounts than women. Second, the levels of wine and beer consumption are much higher among men than among women. Men drink 84 more grams of wine and 241 more grams of beer than women per day on average, when the socio-demographic characteristics are held constant. A comparison of the results in Tables 2 and 3 yields an interesting finding that although men appear to have a strong preference for hard liquor, when they choose wine and beer, they drink these beverages in much larger amounts compared to women.

I briefly discuss the effects of the other variables on the volume of alcohol use. First, age is related to lower levels of alcohol consumption. Volume goes down with age across all beverage types. This point is consistent with the existing literature which reports an overall decline in alcohol use with age. Second, employment is associated with a reduced amount of hard liquor.[2] Comparing the results in Tables 2 and 3 shows that employment increases the odds of drinking hard liquor, but employed people drink less than those who are not in the labor force. This suggests that employment is related to an individual's beverage type choice, but not to the consumption level. I observe a similar pattern in the effects of education. Although college graduates exhibit higher odds of drinking alcohol (model 3 in Table 2), their consumption levels are lower compared to those of high school graduates. Finally, cigarette use is strongly related to a large volume of all kinds of alcohol. This finding is consistent with men's drinking patterns, indicating that men in Russia are apt to engage in both drinking and smoking.

Conclusion

Even though research to date has generated abundant evidence that excessive alcohol use is a major contributor to high male mortality in Russia (Leon et al. 2009), we are clearly lacking a firm understanding of the precise mechanism and the context shaping such behavior. This lack of knowledge is mainly due to the fact that prior research has primarily focused on the frequency and volume of alcohol use, ignoring the types of beverages that individuals consume.

In an attempt to address this issue, the present study has focused on the types of alcoholic beverages that are respectively consumed by men and women. The results of the beverage type analysis suggest a number of intriguing conclusions. First, descriptive statistics reveal that hard liquor consumption is much more prevalent among men than among women. More than 46% of the male respondents consumed hard liquor in the last 30 days before the study, while only 20% of females did. Second, Russian men have strong preferences for hard liquor out of many other alcoholic beverages. Net of all controls, men exhibit much higher odds of drinking hard liquor than women, although they have similar odds of drinking wine or beer. These patterns provide clear evidence in support of Russian men's strong preferences for hard liquor, namely vodka. In contrast, women tend to refrain from drinking or to choose mild types of alcohol than to drink hard liquor. Third, men exceed women in the volume of alcohol consumption across all beverage types. In particular, men drink much larger amounts of hard liquor than women, highlighting Russian men's inclination toward hard liquor consumption. In addition, although men do not exhibit strong preferences for wine and beer, when they drink these beverages, their consumption levels are much higher than those of women. In sum, regression analyses demonstrate that males in Russia drink larger amounts of alcohol than their female counterparts, and in particular, they tend to choose hard liquor.

These findings relate back to the original research question: how do men and women in Russia drink differently in terms of beverage type and volume? I find strong evidence in support of striking gender differences in drinking patterns, and the central point of the findings is that beverage type choice plays the key role in determining gender-specific drinking behavior. The results suggest that hard liquor is distinctively a "men's" drink in the Russian context. In fact, clear differences in choice help us understand the major cause of the gender gap in health outcomes among Russians. Men's drinking patterns, characterized by large doses of hard liquor consumption, have detrimental effects on their health, while refraining from alcohol use or drinking mild types of alcohol protect women from the drastic decline in health status. In fact, Klatsky and Armstrong (1997) report that coronary heart disease risks are the highest among hard liquor drinkers and the lowest among wine drinkers. In the case of Russia, due to men's strong preferences for hard liquor, the association between drinking and all-cause mortality seems to be linear, indicating that there is no U or J curve often reported in Western countries (Nicholson et al. 2005b). Thus, alcohol consumption per se is not the factor responsible for the current health crisis in Russia, but the cause is the distinct beverage types consumed by men and women.

Gender roles are the key to understanding different preferences for alcoholic beverages among Russians. Gender roles are defined by a certain set of behaviors and a constitutive performance (O'Hara 1999), and expressive functions have acquired significance in modern male roles (Coutenay 2000). In the case of Russia, drinking alcohol, particularly vodka, is deeply rooted in traditional men's culture, constituting the core male identity as breadwinners. Men in Russia have constructed their masculine ideals based on their roles as industrial workers (Kay 2006), and the traditional working style involves alcohol consumption with colleagues

(Kiblitskaya 2000). In fact, previous research finds that patterns of socialization based on gender roles affect differences in risk-taking behaviors between men and women (Nathanson 1984). Thus, norms, ideals, and expectations associated with gender roles have shaped different drinking behaviors among males and females in Russia.

The results of this study allow for a number of conclusions to be drawn, which must be considered along with the study's limitations. First, this study, like other cross-sectional investigations, cannot be definitive in its inference of causality. Since the RLMS-HSE is a household-based study, interviewers return to the same dwelling to conduct interviews with the currently residing household, even when the original household has refused participation or has moved since (Gerber and Berman 2008). Due to this structure of the survey, combining multiple data sets may reduce the sample size, making it difficult to describe individual trajectories of change. Second, I suspect that the measurement of alcohol use is subject to underestimation. In the current study, 35% of men and 55% of women in the sample denied alcohol consumption in the last 30 days before the study. However, the WHO (2004) estimates that over 90% of males in Russia are current drinkers. One of the potential explanations for high rates of non-drinkers is age. Since alcohol consumption generally declines with age, the presence of the elderly in the current study may increase the share of those who denied alcohol use. To address the issue of the age effect, I limited the sample to individuals between 18 and 60 years of age, but I did not observe a drastic change: 33% of males and 47% of females were still classified as non-drinkers, suggesting that respondents have a tendency to underreport alcohol consumption (Bobak et al. 1999).

Despite these limitations, however, the present study substantively contributes to the body of work examining the potential cause of gender differentials in health outcomes among

Russians. Different preferences for alcoholic beverages account for men's disadvantage and women's advantage in health and mortality. Driven by social and cultural norms, men tend to choose hard liquor and to drink it in larger amounts, and such drinking behavior has detrimental effects on their health status. By focusing on beverage types, the present study underscores the importance of social standards and cultural values on individual behaviors.

This study's results, together with its strengths and weaknesses, suggest an important direction for future research. In the case of Russia, traditional gender roles appear to be responsible for men's preference for hard liquor. Yet, twenty years have passed since the collapse of the Soviet Union, and Russian society has drastically changed over time. In the face of on-going societal transformations, have norms that have governed male roles also changed? Does the arrival of the post-Soviet generations provide the opportunity for the reduction of men's hard liquor consumption and consequently improvement in their health? Given the crucial role of alcohol in the current health crisis in Russia, further research is needed to understand the implications of societal change on the population's health and on gender differences in health and mortality.

1. Guided by the assumption that the elderly are more likely to avoid alcohol consumption and not to be in the labor force, I also ran the model with a limited age range of between 18 and 60. Even after limiting age, I observed the same pattern: employed individuals are more likely to drink hard liquor in comparison with those who are not in the labor force ($p < .001$, results not shown here).
2. I also ran the model using the limited age range of between 18 and 60. Basically, I found the same results as the model without the limit.

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TABLE 1: Distribution of Variables by Gender, RLM-HSE 2004

Variables	Male (n=4,141)		Female (n=5,672)	
	(1)	(2)	(1)	(2)
Beverage type:				
Do not drink alcohol	.35	1,468	.55	3,119
Drink hard liquor	.46	1,885	.20	1,113
Drink alcohol except hard liquor	.19	808	.25	1,440
Among those who drink alcohol:				
Grams of hard liquor	275.17	167.70	163.57	104.47
Grams of wine	350.73	296.49	232.43	168.73
Grams of beer	848.73	562.33	560.72	393.23
Age	42.19	16.44	46.51	18.50
Employment status:				
Currently working	.68	2,795	.56	3,190
Currently not working	.32	1,346	.44	2,482
Income (ln)	8.41	.82	8.06	.96
Education:				
Less than high school	.06	267	.04	250
High school	.18	739	.15	794
Vocational training	.54	2,253	.58	3,302
College	.22	882	.23	1,327
Marital status:				
Married	.62	2,555	.48	2,710
Never married/divorced/ Widowed	.38	1,586	.52	2,962
Cigarette use (number per day)	10.63	10.18	1.91	5.07

Note: (1) contains proportions for categorical variables and means for continuous variables.
(2) contains absolute numbers for proportions and standard deviations for means (n= 9,813).

TABLE 2: Multinomial Logistic Regression Models for Beverage Type Choice, Progressively Adjusting for (1) Gender and Age, (2) Employment Status and Income, and (3) Education and Marital Status, RLMS-HSE 2004

	(1)		(2)		(3)	
	Hard liquor vs. No alcohol	Other alcohol vs. No Alcohol	Hard liquor vs. No alcohol	Other alcohol vs. No alcohol	Hard liquor vs. No alcohol	Other alcohol vs. No alcohol
Gender:						
Female	ref	ref	ref	ref	ref	ref
Male	2.52***	.95	2.32***	.90	2.27***	.91
	(0.15)	(.05)	(.15)	(.07)	(.15)	(.07)
Age	.99***	.97***	.99**	.97***	.99*	.98***
	(.002)	(.002)	(.002)	(.001)	(.002)	(.001)
Employment status:						
Currently working			1.89***	1.20**	1.76***	1.14*
			(.13)	(.08)	(.13)	(.08)
Currently not working			ref	ref	ref	ref
Income (ln)			1.19***	1.11**	1.15***	1.05
			(.04)	(.04)	(.04)	(.04)
Education:						
Less than high school					1.10	1.07
					(.16)	(.16)
High school					ref	ref
Vocational training					1.09	1.25*
					(.08)	(.12)
College					1.55***	1.94***
					(.17)	(.22)
Marital status:						
Married					1.28***	1.11*
					(.08)	(.07)
Never married/divorced/widowed					ref	ref
Cigarette use	1.04***	1.02***	1.04***	1.02***	1.04***	1.02***
	(.005)	(.006)	(.005)	(.006)	(.005)	(.006)

*** p< .001; ** p< .05; * p<.10; standard errors in parentheses (n=9,813)

TABLE 3: OLS Regression Models for Volume (Grams) of Alcohol Consumption by Beverage Type, RLM-HSE 2004

	Hard liquor	Wine	Beer
Gender:			
Female	ref	ref	ref
Male	90.43***	83.81***	241.27***
	(6.19)	(12.48)	(20.34)
Age	-.95***	-1.68***	-3.88***
	(.21)	(.39)	(.73)
Employment status:			
Currently working	-13.52*	2.65	7.96
	(6.63)	(12.47)	(22.32)
Currently not working	ref	ref	ref
Income (ln)	-4.69	1.00	-10.24
	(3.30)	(5.82)	(10.40)
Education:			
Less than high school	19.14	-47.03*	6.86
	(12.79)	(28.38)	(39.66)
High school	ref	ref	ref
Vocational training	-12.96*	-31.87**	-11.94
	(7.59)	(15.77)	(25.08)
College	-40.93***	-36.46**	-39.14
	(8.45)	(16.09)	(27.72)
Marital status:			
Married	-16.13**	16.69*	-24.57
	(5.55)	(9.85)	(18.78)
Never married/divorced/widowed	ref	ref	ref
Cigarette use	2.69***	4.15***	7.22***
	(.31)	(.75)	(1.02)
Constant	268.36	302.68	777.20
Adj. R2	.17	.09	.10
Observations	2,992	1,854	3,166

*** p< .001; ** p< .05; * p<.10; standard errors in parentheses.