

# ALCOHOL USE IN PREGNANT RUSSIAN WOMEN

Edwin Zvartau<sup>1</sup>, Sharon C. Wisnack<sup>2</sup>, Arlinda F. Kristjanson<sup>2</sup>,  
Boris Novikov<sup>3</sup>, and Marina Tsoy<sup>1</sup>

<sup>1</sup> Valdman Institute of Pharmacology, Pavlov State Medical University,  
St.Petersburg, Russia

<sup>2</sup> Department of Clinical Neuroscience, University of North Dakota  
School of Medicine and Health Sciences, Grand Forks, North Dakota

<sup>3</sup> Department of Obstetrics and Gynecology, Pavlov State Medical  
University, St.Petersburg, Russia

## **CPDD International Committee-Workshop Pregnancy and Addiction**

**Chairs: Gabriele Fischer & Hendree Jones**

**June 18, 2007, 7:00-10:00pm**

**Hilton Hotel Quebec, Room: Porte St. Louis**

A Project Conducted under the  
Auspices of the Health Committee of  
the U.S./Russian Bilateral Commission  
for Science and Technology

with funding from the

National Institute on Alcohol Abuse and  
Alcoholism, National Institutes of Health

U.S. Agency for International Development



- Arlinda F. Kristjanson & Sharon C. Wilsnack (Department of Neuroscience, University of North Dakota School of Medicine & Health Sciences, Grand Forks, North Dakota, USA), Peggy Murray (NIAAA)
- Boris Novikov, Marina Tsoy, & Edwin E. Zvartau (Departments of Obstetrics-Gynecology and Pharmacology, Pavlov Medical University, St. Petersburg, Russia)

# Background

- **High per capita alcohol consumption in Russia**
- **Obstetricians' observations of continued drinking during pregnancy**
- **Documentation of alcohol-related birth defects in Russian orphanages and boarding schools**

# Aims of the study

- **Measure the drinking behavior of women of child-bearing age (pregnant vs nonpregnant) living in St.Petersburg, Russia using a questionnaire specifically designed to measure women's alcohol use**
- **Determine to what degree Russian women understand the effects of alcohol on pregnancy outcomes**

# Sample

- 899 women aged 16-43 residing in St. Petersburg: **699 nonpregnant women, 200 pregnant women**
- Randomly sampled from **three social/educational groups**
  - **Educational centers:** Students attending high schools, technical schools and universities (n = 391)
  - **Employment centers:** Employees in men's clothing and tulle factories, clerks and office workers in large department stores (n = 308)
  - **OB/GYN clinics and hospitals:** pregnant women (n = 200)
- Age distribution of sample **not significantly different** from that of general (employed) female population of St. Petersburg

# Questionnaire development

- Interview **questionnaire adapted primarily from U.S. collaborators' national longitudinal study of U.S. women's drinking<sup>1</sup>**
- **Questions modified** to take into account cultural differences in beverage types, drink sizes, and drinking settings
- Questionnaire **translated and back-translated** to check accuracy and cultural sensitivity

<sup>1</sup> - Wilsnack, S. C., Wilsnack, R. W., Kristjanson, A. F., Vogeltanz-Holm, N. D., & Windle, M. (2004). Alcohol use and suicidal behavior in women: Longitudinal patterns in a U. S. national sample. *Alcoholism: Clinical and Experimental Research*, 28(5) Suppl., 38S-47S.



# Drinking questions: Quantity and Frequency

- First, they were asked about their typical **frequency of drinking any kind of alcoholic beverage in the last 12 months** (9 categories ranging from not at all to every day or nearly every day)
- Then, they were asked about the **number of standard drinks they drank on a typical day** when they drank
- All women who reported **any drinking in the last 12 months** were asked to describe their **beverage-specific alcohol use during several different time frames.**





# Drinking Measures

- ↳ **30-Day Beverage-Specific Quantity/Frequency (QF):**
  - **Beverage type:** dry wine/fortified wine/beer/liquor
  - **Frequency of drinking** each type of beverage separately
  - **Quantity:** usual number of drinks in the past 30 days
  
- ↳ **Beverage-Specific Graduated Frequency (GF):**
  - **Beverage type:** dry wine/fortified wine/beer/liquor
  - **Frequency of drinking specific amounts** of each type of beverage (beginning with frequency of largest amount consumed and then asking about successively smaller amounts)
  - **Time frame**
    - Nonpregnant women: past 12 months
    - Pregnant women: in 12 months before becoming pregnant; in time since knowing about pregnancy
  
- ↳ **Heavy Episodic Drinking (HED):** frequency of consuming **5 or more drinks** in a day in the past 12 months

# Drinking categories

- **Abstainers**

- **Lifetime Abstainers**
- **12-Month Abstainers**
- **30-Day Abstainers** (consumed alcohol in past 12 months but *none* in past 30 days)

- **Drinkers**

- **Light Drinkers** (<0.22 oz. / <6.51 ml ethanol/day)
- **Moderate Drinkers** (0.22-0.99 oz. / 6.51- 29.56 ml ethanol/day)
- **Heavy Drinkers** (1 oz. or more / 29.57 ml or more ethanol/day)

# Drinking levels in the last 12 months

% of Women	Nonpregnant		Pregnant
	Educational centers (N=391)	Employment centers (N=308)	OB/GYN clinics/hospitals (N=200)
Lifetime abstainer	2.3 <sup>a</sup>	2.3 <sup>a</sup>	1.5 <sup>a</sup>
12-Month abstainer	1.0 <sup>b</sup>	2.9 <sup>b</sup>	4.5 <sup>b</sup>
30-Day abstainer	10.0	4.5	60.0
<b>Current drinkers</b>	<b>86.7<sup>c</sup></b>	<b>90.3<sup>c</sup></b>	<b>34.0</b>

*Note: Percentages with shared superscripts are not significantly different*

## Drinking levels of current (30-d) drinkers

% of Women	Nonpregnant		Pregnant
	Educational centers (N=339)	Employment centers (N=278)	OB/GYN clinics/hospitals (N=68)
<b>Light drinker (<math>&lt; 6.51</math> ml of ETOH/d)</b>	<b>51.6</b>	<b>39.2</b>	<b>89.7</b>
<b>Moderate drinker (6.51-29.57 ml of ETOH/d)</b>	<b>43.1</b>	<b>50.4</b>	<b>10.3</b>
<b>Heavy drinker (29.58 ml or more/d)</b>	<b>5.3</b>	<b>10.4</b>	<b>No</b>

## Beverage preference by current (30-d) drinkers and any heavy episodic drinking (HED) in the past 30 days

% of Women	Nonpregnant		Pregnant
	Educational centers (N=339)	Employment centers (N=278)	OB/GYN clinics/hospitals (N=68)
Any wine	80.2 <sup>a</sup>	84.2 <sup>a</sup>	85.3 <sup>a</sup>
Any beer	75.5	59.0 <sup>b</sup>	50.0 <sup>b</sup>
Any liquor	42.2	64.7	8.8
Any HED	16.0 <sup>c,d</sup>	21.3 <sup>d</sup>	7.4 <sup>c</sup>

*Note: Percentages with shared superscripts are not significantly different*

## Mean daily ethanol consumption, mL (proportion of respondents, %)

Drinking time frame (beverage specific question type)	Nonpregnant		Pregnant
	Educational centers	Employment centers	OB/GYN clinics/hospitals
Last 30 d (QF)	10.15 (87%)	13.66 (90%)	3.57 (34%)
Last 12 mo (GF)	9.64 <sup>a</sup> (96%)	10.26 <sup>a</sup> (95%)	-----
Last 12 mo before pregnancy (GF- PP)	-----	-----	9.10 <sup>a</sup> (97%)
Since becoming pregnant (GF-P)	-----	-----	2.22 (60%!!)

*Note: Percentages with shared superscripts are not significantly different*



# Knowledge About Alcohol Effects on Pregnancy Outcomes

Heavy drinking during pregnancy increases the chances of..... % “definitely”	Knowledge about alcohol effects on pregnancy outcomes			
	Nonpregnant (N=699)	Pregnant (N=200)	Pregnant respondents only	
			Drank during pregnancy (N=118)	Abstained during pregnancy (N=82)
Miscarriage	56.0	71.9	68.4 <sup>a</sup>	76.8 <sup>a</sup>
Mental retardation	73.7	82.5	78.0	89.0
Low birth weight	44.8	64.0	54.2	78.0
Birth defects	66.7 <sup>b</sup>	71.0 <sup>b</sup>	66.1 <sup>c</sup> (90.7)	78.0 <sup>c</sup> (92.7)

*Note: Percentages with shared superscripts are not significantly different*

# Knowledge About the Fetal Alcohol Syndrome

% of women	Knowledge about the fetal alcohol syndrome			
	Nonpregnant (N=699)	Pregnant (N=200)	Pregnant respondents only	
			Drank during pregnancy (N=118)	Abstained during pregnancy (N=82)
Heard of FAS	37.9	47.0	43.2 <sup>a</sup>	52.4 <sup>a</sup>
<b>Best definition of FAS</b>				
Baby born drunk	4.7 <sup>1</sup>	2.0 <sup>1</sup>	1.7 <sup>1</sup>	2.4 <sup>1</sup>
Baby born addicted to alcohol	24.0 <sup>1</sup>	21.0 <sup>1</sup>	23.7 <sup>1</sup>	17.1 <sup>1</sup>
Baby born with birth defects	71.2 <sup>b</sup>	77.0 <sup>b</sup>	74.6 <sup>c</sup>	80.5 <sup>c</sup>

*Note: Percentages with shared superscripts are not significantly different*

*1 – incorrect responses; not tested for significance*

# Summary

- Nonpregnant women:
  - **Nearly all (95.9%)** reported **consuming alcohol** in the last 12 months
  - **7.6%** of current drinkers reported **drinking heavily** (29.58 mL or more ethanol/d), and **18.4%** reported **drinking 5+** on at least 1 occasion
- Pregnant women:
  - Contrary to expectations of obstetricians **readily answered detailed questions about their drinking behavior** during pregnancy
  - **Nearly all (97%) drank in the year before** they became pregnant
  - **60.0% of these** reported **drinking when they knew they were pregnant**
  - **34.9% of these** drank in **the past 30 days** (current drinkers)
  - Among pregnant current drinkers **7.4%** reported **having 5+ drinks** on at least 1 occasion
- Nevertheless, more than 90% of **pregnant and nonpregnant women** believed that alcohol has a detrimental effect on pregnancy outcomes

# Data publications

- **Tsoy MV, Zvartau EE, Novikov BN, Wilsnack SC, Kristjanson AF. Patterns and risk factors for harmful use of alcohol in Russian and American women of childbearing age. Paper presented at the Annual Meeting, Research Society on Alcoholism, Montreal, Quebec, Canada., June 2001**
- **Kristjanson AF, Wilsnack SC, Novikov BN, Tsoy MV, Zvartau EE. National Birth Defects Prevention Network, Collaborative Meeting, Atlanta, Georgia, September 19, 2002**
- **Kristjanson AF, Wilsnack SC, Zvartau EE, Tsoy MV, Novikov BN. Alcohol use in pregnant and nonpregnant Russian Women. Alcoholism: Clinical and Experimental Research, 2007, vol.31, No.2, pp. 299-307**