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World Perspectives on Substance Abuse Policy

In this edition, we are pleased to present some different perspectives on substance abuse policy from around the world.

In Prevalence and Correlates of Alcohol Consumption during Pregnancy in Georgia: Evidence from a National Survey, a group of researchers and authors based in the U.S and Georgia, examined data from a Georgian national survey to determine the extent of alcohol consumption during pregnancy. The findings in their study will provide the foundation for evidence-based prevention strategies that target pregnant and reproductive age women in Georgia. Authors included: **Manouchehr Mokhtari, Ph.D.; Anthony Kondracki, MD, MPH; Lasha Kavtaradze, Ph.D.; Jacqueline Wallen, MSW, Ph.D.; Mamak Ashtari, MBA; Gvantsa Piralishvili, Ph.D.; Marina Topuridze, MD; Khatuna Todadze , MD; Lasha Kiladze, MD; and Nino Gachechiladze , MS.**

Shane Varcoe and Derek Steenholdt of the Dalgarno Institute in Australia present their paper entitled, *Social Determinants and Substance Use: A perspective beyond the policy ‘silo’ pragmatics*. The authors analyze the factors and social determinants that have influenced the uptake of illicit drug use in advanced and developing countries and suggest that there is a need to address underlying issues and principles relating to personal responsibility; and at a national level, a need to present a unified approach across government departments in preventing harm from illicit drugs. (Ed. Note: Due to length, we have presented this paper as an abstract with a link to the full paper.)

Our commentary is offered from **Pennsylvania State Representative Matt Baker** in his piece, *The Worst Drug Epidemic in US History*. Rep. Baker outlines the morbid, escalating statistics of overdose deaths in his state and the four areas of focus in Pennsylvania’s strategy to battle these drug issues.



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The Worst Drug Epidemic in US History



The Worst Drug Epidemic in US History

Representative Matt Baker, Chairman, Health Committee, Pennsylvania House of Representatives

Since 2000, 500,000 deaths in the U.S. have occurred due to drug abuse; one person approximately every 20 minutes. According to new data released by the Centers for Disease Control (CDC) there were 52,404 total deaths in 2015, or 144 drug overdose deaths per day. This number is up 11.4 percent in just one year—from 129 a day in 2014.

In 2015 in Pennsylvania, per the Pennsylvania Coroner's Report, there were 3,505 overdose deaths. The number of overdose deaths exceeds those caused by car accidents and guns combined. Thus, the greatest public health threat in Pennsylvania is drug addiction and related overdose deaths.

The number of deaths in 2015 is a 30 percent increase over 2014, which represents the largest increase in a decade. On average, in Pennsylvania, 10 people die every day from drug poisoning and that number is probably low given the gaps in reporting. Eighty-one percent of those deaths involved opiates, and the vast majority of those who died had more than one drug in their system.

Growth in hospitalizations for heroin overdoses between 2000 and 2014 showed a 509 percent increase per the Pennsylvania Health Care Cost Containment Council. The rural 10-county, north-central region has the state's largest percentage increase.

History of the opioid problem

Opioid addiction cuts across all age groups, economic sectors and racial demographics. The use, overuse, and abuse costs the Commonwealth more than \$12.2 million in hospitalization costs annually as of 2012, per the Pennsylvania Health Care Cost Containment Council. According to the U.S. Surgeon General, the economic impact of drug and alcohol misuse and addiction across the nation amounts to \$442 billion each year – topping diabetes at \$245 billion. One in seven individuals in the United States will face substance addiction, while only 10 percent of those addicted receive treatment.

In the last 20 years the dramatic rise in use of opioids can be traced to the inclusion of pain as a vital sign. Unlike other vital signs which can be externally monitored by medical devices pain is subjective, and it relies on patient's self-reporting on a 1 to 10 pain scale.

The use of prescription painkillers has exploded. The U.S. consumes 80 percent of all opioids globally, despite only having 5 percent of the world population.¹

More than 250 million prescriptions for painkillers were written in 2012² and prescriptions for opioids have quadrupled from 1999 to 2010.³ Pennsylvania ranks 21st in the U.S. on the number of prescriptions written for opioids with 88.2 prescriptions per 100 persons.⁴ Twenty to 30

percent of those opioids prescribed for pain are being misused, including providing them to others.⁵ Fifty-three percent of persons 12 and older have received a prescription opioid from a friend or family member for free for nonmedical purposes.⁶

Heroin-related overdose deaths in Pennsylvania

Based on Pennsylvania Corners Association (PCA) reports in 43 counties, heroin and heroin-related deaths have been on the rise for the past five years (PCA, 2013). Between 2009 and 2013, there were 2,929 heroin-related overdose deaths identified by county coroners. Of these, 490 (17 percent) were heroin only, while 2,439 (83 percent) involved multiple drugs.

Other drugs commonly found along with heroin overdose include other opiates such as methadone, oxycodone, fentanyl, morphine, codeine, tramadol; other illegal drugs such as marijuana, cocaine; other sedating drugs such as alcohol and benzodiazapines; and antidepressant medications such as Prozac, Celexa, Remeron, trazadone and Zoloft.

The number of deaths where an opioid prescription is solely responsible is difficult to determine. There routinely is confusion or they are reported with heroin overdoses. The CDC reports the number of opioid and heroin overdoses combined caused over 27,000 deaths in 2014. Pennsylvania now leads the nation in drug overdoses among men aged 12 to 25 and is ninth in the country for overdose deaths across the general population. Deaths due to an opioid overdose are most likely to impact middle-class white males, ages 25 and 54.

Drug Related Overdose Deaths in Pennsylvania

Figure 7: Ranking of Frequency of Drugs of Interest Present, and Rate of Change (Δ),
In Drug-Related Overdose Decedents, Pennsylvania, 2014-2015

Rank	Drug	% Reported Among 2015 Decedents	Δ From 2014
1	Heroin	54.6%	5.4%
2	Fentanyl	27.0%	92.9%
3	Cocaine	23.9%	40.6%
4	Alprazolam	20.5%	5.7%
5	Oxycodone	18.6%	3.9%
6	Clonazepam	9.9%	3.1%
7	Diazepam	7.5%	-9.6%
8	Marijuana	7.1%	7.6%
9	Methadone	6.7%	-11.8%
10	Hydrocodone	5.8%	7.4%
11	Tramadol	3.8%	-17.4%
12	Acetyl Fentanyl	3.6%	*
13	Methamphetamine	3.1%	95.0%
14	PCP	1.7%	-16.5%

*No Acetyl Fentanyl Reported in 2014

Source: Pennsylvania Coroner Data

Drug Related Overdose Deaths in Pennsylvania

Figure 22: Ranking of the Rate of Drug-Related Overdose Deaths per 100,000 People in Pennsylvania Counties, 2014-2015

2015 Rank	New 2014 Rank	County Name	Drug-Related Deaths per 100,000 people	2015 Rank	New 2014 Rank	County Name	Drug-Related Deaths per 100,000 people	2015 Rank	New 2014 Rank	County Name	Drug-Related Deaths per 100,000 people
1	1	Philadelphia	45.93	26	49	Columbia	24.00	51	46	Pike	12.51
2	10	Armstrong*	43.25	27	54	Northampton*	23.60	52	26	Bedford*	12.35
3	3	Cambridge*	42.52	28	6	York	22.35	53	47	Chester*	12.21
4	51	Indiana*	41.40	29	32	Beaver*	21.91	54	43	Mifflin	10.75
5	14	Greene	37.31	30	48	Lycoming*	21.54	55	55	Clinton	10.14
6	9	Delaware*	35.82	31	23	Somerset*	21.19	56	44	Clarion	10.13
7	13	Westmoreland	35.20	32	24	Venango*	20.71	57	8	Elk	9.72
8	5	Wayne	35.16	33	19	Fulton	20.51	58	58	Adams	8.80
9	33	Washington*	35.05	34	38	McKean	18.86	59	52	Centre*	9.34
10	20	Lawrence	34.06	35	29	Bucks	18.65	60	56	Tioga	7.16
11	34	Lackawanna*	33.03	36	40	Jefferson	18.01	61	42	Perry	6.57
12	11	Allegheny	32.43	37	60	Huntingdon	17.52	62	n/a	Potter	5.85
13	27	Crawford	32.38	38	35	Blair	17.52	63	59	Union	4.45
14	n/a	Montour	32.33	39	50	Schuylkill	17.29	64	n/a	Juniata	4.04
15	12	Lehigh*	31.88	40	28	Northumberland	17.16	65	n/a	Snyder	2.47
16	4	Fayette	30.68	41	37	Cumberland*	16.64		n/a	Cameron	0.00
17	21	Dauphin*	30.04	42	39	Berks*	16.62		61	Warren	0.00
18	18	Luzerne*	29.83	43	22	Montgomery*	16.60				
19	7	Carbon*	28.14	44	25	Clearfield	16.05				
20	45	Monroe	27.64	45	36	Sullivan	15.80				
21	67	Forest	26.99	46	15	Mercer*	15.76				
22	30	Bradford	26.11	47	53	Lancaster	14.91				
23	16	Wyoming	25.18	48	41	Lebanon*	14.59				
24	31	Butler*	25.16	49	2	Susquehanna	14.40				
25	17	Erie	24.46	50	57	Franklin*	13.67				

*2014 rank changed due to updated 2014 data (possibly due to other counties' data changes)

Represents rural county¹⁷

Source: Pennsylvania Coroner Data and www.census.gov

[DEA, 2016]

Fifty-six percent of overdoses are among men.⁷ In 2015, Pennsylvania men represented two-thirds of overdose deaths. Deaths in adults aged 55 to 64 have increased seven-fold from 1999 to 2013.⁸ Deaths in women have increased 400 percent since 1999.⁹ Of the overdose hospitalizations in Pennsylvania, 28 percent are within the 50 to 59 age group.¹⁰ Annual costs of prescription opioid abuse for the country are estimated at \$55 billion.¹²

The link between opioids and heroin

Opioids and heroin are from same derivative product. The U.S. has seen a dramatic increase in heroin use that statistically parallels the use of opioids. Nearly half of young people who inject heroin reported abusing prescription opioids before starting heroin. Some individuals reported taking up heroin because it's cheaper and easier to obtain than prescription opioids.¹³

States that have enacted a prescription drug monitoring data base, such as our ABC-MAP, have seen dramatic increases in heroin use immediately after implementation of the monitoring program due to a decrease in access to opioids.

The U.S. has experienced a 63 percent increase in the use of heroin from 2002 to 2013,¹⁴ a 26 percent increase in heroin overdoses from 2013 to 2014,¹⁵ with more than 800 people dying in Pennsylvania due to a heroin overdose in 2014.¹⁶

Pennsylvania's strategy

There have been four areas of focus in Pennsylvania's strategy to battle these drug issues.

Address the growing problem without eliminating access to legitimate users by 1) using system innovations such as patient review and restriction programs, treatment options, including medication assisted treatment, and a rapid response project; 2) including technology advances including abuse-deterrent technologies for medications, the incorporation of ABC-MAP and electronic health records, and interstate data sharing on ABC-MAP data; 3) practicing innovations related to rethinking treating pain with methadone, insurance and MA coverage for alternative pain management, and continuing education for providers, both in detection of addiction and appropriate pain treatment; and 4) enhancing public education regarding the appropriate use of opioids and parental detection of abuse of opioids.

Legislative initiatives have revolved around the PA Heroin, Opioid Prevention and Education (PA-HOPE) Caucus, a bipartisan group of legislators working to address the growing opioid epidemic, and the House Policy Committee holding public hearings across the state to gain facts.

The Pennsylvania House of Representatives formed a House Task Force and Advisory Committee and proposed a series of bills designed to proactively address the growing opioid epidemic during the 2015-16 session.

Five bills were introduced and successfully signed into law before the end of the 2015-16 session that set a seven-day limit on the discharge prescription of opioids in emergency departments;

provide for the proper disposal of unused prescriptions and over-the-counter medications; require prescribers and dispensers to obtain education in pain management, identification of addiction and the use of opioids; prohibit prescribing an opioid to a minor, with certain limitations, for more than seven days; and require the state boards of Dentistry, Medicine, Nursing, Optometry, Osteopathic Medicine and Podiatry to create a safe opioid prescribing curriculum to be offered in medical schools across Pennsylvania by August 2017, and direct the Department of Health to establish a form for a patient to complete which will opt the patient out of being offered opioids.

Furthermore, Act 191 of 2014 (known as the Achieving Better Care by Monitoring All Prescriptions Program-- (ABC-MAP) Act) is a prescription drug monitoring program intended to increase the quality of patient care; give prescribers/dispensers access to patient's prescription medication history; provide an electronic system that will alert medical professionals to potential dangers for purposes of making treatment determinations; give patients an easily obtainable record of their prescriptions so they can make educated and thoughtful health care decisions; and aid regulatory and law enforcement agencies in the detection and prevention of fraud, drug abuse and the criminal diversion of controlled substances. It became functional August 25, 2016.

Act 37 of 2016 was also enacted to prevent further spread of substance abuse through precursor drugs. It amends the Controlled Substance, Drug, Device and Cosmetic Act and provides the Pennsylvania Department of Health with authority to control the schedules and regulations of controlled substances, liquefied ammonia gas, precursors and chemicals. It also allows the Secretary of Health to temporarily reschedule controlled substances to a higher schedule, works to prevent widespread use of substances potentially harmful/fatal to the public and allows

quicker prosecution of those engaged in manufacture, distribution and sale of designer illegal drugs.

As government leaders, we also must expand our understanding of drug abuse to include new hybrids, many of which when mixed with opioids, and are resistant to the lifesaving medication Naloxone. They can cause death at even microscopic doses. For instance W-18 and Carfentanil are 10,000 times more powerful than morphine and 100 times more powerful than Fentanyl. Law now allows the Secretary of Health to protect the public by having the authority to temporarily declare a “designer drug” an illegal drug, make changes and notify the public 30 days before the rescheduling takes effect. The rescheduling remains in effect for one year and the Secretary can work with the attorney general and the regulatory process to get the substance permanently scheduled.

We still have much work to do in order to address this growing epidemic; however, I am encouraged we will continue to make great strides in the fight due to the dedicated cooperation of the governor, state and local elected leaders, and both the law enforcement and medical communities.

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About the Author

Matt Baker is currently serving his 13th term in the Pennsylvania House of Representatives, representing all of Tioga County and parts of Bradford and Potter counties. He has more than 35 years of knowledge and experience of public service and state government with him as a state representative.

In the House, Baker serves as majority chairman of the House Health Committee and is a member of the Rules Committee. Representative Baker has been recognized by many organizations for his many accomplishments during his tenure including legislation to combat the spread of substance abuse.

Conflict of Interest

I declare that I have no proprietary, financial, professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled *The Worst Drug Epidemic in US History*.

Prevalence and Correlates of Alcohol Consumption During Pregnancy in Georgia: Evidence from a National Survey

By Manouchehr Mokhtari, Ph.D.; Anthony Kondracki, MD, MPH; Lasha Kavtaradze, Ph.D.; Jacqueline Wallen, MSW, Ph.D.; Mamak Ashtari, MBA; Gvantsa Piralishvili, MD, Ph.D.; Marina Topuridze, MD; Khatuna Todadze, MD; Lasha Kiladze, MD; Nino Gachechiladze, MS.

Abstract

Background: While alcohol consumption is pervasive in the country of Georgia, the extent of alcohol consumption among pregnant women is yet to be examined. The goal of this study is to examine prevalence and correlates of alcohol consumption during pregnancy in Georgia.

Methods: Using data from the World Health Organization's Stepwise approach to noncommunicable disease risk factor surveillance in Georgia, this study examined prevalence and sociodemographic correlates of alcohol use among pregnant women in Georgia. The study sample of reproductive age (18-45) women was drawn from the STEPS, which is a large and nationally representative survey of adults with a 95% participation rate. Frequencies, multivariate analyses and related statistics were computed to describe and study associations among the target population and the odds of alcohol consumption during pregnancy.

Results: Only 66 individuals in the sample were pregnant. About 13% of pregnant women consumed alcohol in the past 30 days and nearly 70% of them engaged in binge drinking on at least one occasion. Pregnant women who were young, married, homemakers, living in two-member households and in the lowest bracket of monthly income had the highest likelihood of consuming alcohol and binge drinking. The study results were statistically significant ($p < .05$).

Conclusions: This study reveals the magnitude of alcohol consumption and binge drinking among reproductive age women in Georgia. This study also shows prevalence and correlates of alcohol consumption during pregnancy in Georgia. The results identify characteristics of women who are most likely to use alcohol during pregnancy. Given that, alcohol use is a modifiable behavioral risk factor, the findings in this study provide the foundation for evidence-based prevention strategies that target pregnant and reproductive age women.

Keywords: alcohol consumption; pregnancy; women; risk factors; Georgia.

Introduction

Alcohol consumption during pregnancy has been widely proclaimed as a significant public health problem in many countries (Bhuvaneswar et al., 2007). However, despite its recognition as the oldest wine country in the world, there is scant evidence on alcohol consumption during pregnancy in the country of Georgia (Mokhtari et al, 2016). In other words, alcohol use by pregnant women in Georgia is yet to be characterized and/or assessed in a systematic study. Thus, there is no evidence-based analysis that may inform policy makers targeting alcohol use by pregnant women in Georgia. Nonetheless, recent evidence on adults aged 18-65 indicates an escalation in prevalence of drinking from 11% in 2003 to 30% in 2010 (Mokhtari et al., 2016). Using 2010 data from the World Health Organization's (WHO's) Stepwise approach to noncommunicable disease

risk factor surveillance in Georgia (STEPS, 2010), this study aims to investigate prevalence and correlates of alcohol consumption during pregnancy in Georgia.

Alcohol use in pregnancy may lead to miscarriage, stillbirth and fetal alcohol spectrum (FAS) disorders in children manifested by lifelong physical, behavioral and intellectual disabilities (Naimi et al., 2003; Patra et al., 2011). In addition to pre- and postnatal adverse health effects, alcohol intake in pregnancy significantly contributes to a rising rate of the noncommunicable diseases worldwide and high economic costs (Bouchery et al., 2011; CDC, 2014; Flak et al., 2014; Green et al., 2016; Lim et al., 2012; Rehm et al., 2010; Tan et al., 2015; USDHHS, 2005; WHO, 2014). Fetal *in utero* exposure to maternal alcohol increases risk of developing a congenital disorder known as fetal alcohol syndrome marked with facial anomalies, poor growth and cognitive and behavioral problems in children, which is the most debilitating form of fetal alcohol spectrum disorders (Balachova et al., 2012; Flak et al., 2014; Green et al., 2016). While there are no estimates for Georgia, evidence shows that prevalence of FAS and Fetal Alcohol Spectrum Disorders (FASD) in the United States is 6 to 9 cases and 24 to 48 cases per 1000 children, respectively (May et al., 2014).

Binge drinking, particularly in early pregnancy, is found to be associated with hyperactivity and attention disorders in children (Sayal et al., 2014). Research has not reached consensus on a minimal harmful dose of maternal alcohol on developing fetus in a dose-response relationship. Abstinence from all types of alcohol, including wine and beer, is currently deemed essential in pregnancy. In 2014, the Centers for Disease Control and Prevention (CDC) and the National Center on Birth Defects and Developmental Disabilities reaffirmed that there is no safe time to drink and no safe amount of alcohol intake during pregnancy (CDC, 2014). Alcohol use and binge drinking in pre-pregnancy is a strong predictor of continued drinking during pregnancy

(Skagerstrom et al., 2011), and preconception counselling has been recommended for all childbearing age women in the United States (Floyd et al., 1999). Unfortunately, no data on the women use of alcohol prevention or treatment services exist for Georgia at this point. This provides further impetus for the goal of this study, which is providing baseline evidence on prevalence and correlates of alcohol consumption during pregnancy in Georgia.

Alcohol consumption in Georgia exceeds global per capita intake by 24%. Georgia's alcohol consumption is 45% higher than that of Armenia and 335% higher than that of Azerbaijan, its two neighboring countries (WHO, 2014). In Georgia, wine is a preferred alcoholic beverage by both males and females. About 5% of Georgian women believe that alcohol is advantageous for health (Pomerleau et al., 2008). While cultural factors have always played a significant role in Georgia, the complexity of contextual social factors and political and economic turmoil linked to the post-soviet era transformation may contribute to the overall sustained psychological stress and changing drinking habits among women (Hinote et al., 2009; Jukkala et al., 2008; Peele & Brodsky, 1996). One could argue that demands of women, related to the traditional gender role as housewives and guardians of children, have been changing and drinking and binge drinking is used as means of gaining identity and stress reduction. Overtime, society's drinking culture may be becoming more tolerant to women who drink. It is hypothesized that increasing prevalence of drinking and binge drinking among women in Georgia will predict a similar pattern of drinking during pregnancy that will include homemakers and married women.

For the most part, in spite of an existing problem, alcohol use by pregnant women in Georgia has not been adequately assessed in systematic studies. Unlike in developed countries where health monitoring and national health surveys are routinely conducted, the paucity of statistical data in Georgia hinders investigation of critical effects of excessive alcohol use in different groups of

population. The recent World Health Organization project called WHO STEPwise Approach (STEPS) has offered assistance and opportunity to raise database and develop national health surveillance system in countries like Georgia to be used for international comparisons of noncommunicable disease risk factors (STEPS, 2012; STEPS Manual, 2015; Ustun et al., 2003). The large WHO STEPS Georgia Survey was piloted in 2010 and has initiated a nationwide collection of data on essential sociodemographic, economic information and health indicators such as frequency and quantities of alcohol use in adult population (STEPS, 2012). The objective of this study is to investigate prevalence and correlates of alcohol consumption during pregnancy in Georgia.

Methods

Study Data

The source of a sample used in this study was the World Health Organization's Stepwise (WHO STEPS) approach to noncommunicable disease risk factor surveillance in Georgia. The WHO STEPS provides the framework, instruments, and guidelines for collecting comparable health related data in various countries. By focusing on the noncommunicable disease (NCD) risk factors, the WHO STEPS' Instrument covers three different levels or 'steps' of risk factor assessment and several optional modules: Step 1 (questionnaire), Step 2 (physical measurements) and Step 3 (biochemical measurements) are the basic components of the WHO STEPS' approach in this respect. There are also optional modules that cover: mental health/suicide, oral health, sexual health, tobacco policy, and violence and injury. The questionnaire in each case includes guidelines and background information on the intent of each question and/or measures to be collected by implementing the instrument. This allows interviewers to supply relevant information and/or response to the participant's requests for clarification about any particular issue.

The WHO STEPS Georgia Survey (STEPS, 2010) focused on survey of chronic disease risk factors in Georgia was carried out from August to December 2010. The WHO STEPS Georgia survey consists of a multi-stage, clustered sample design that yielded representative data for adults aged 18-64 in Georgia. A total of 6,497 adults participated in the Georgia STEPS survey. Georgian data is comparable to other survey data that are collected according to international best practice.

With a participation rate of 95%, the WHO STEPS Georgia Survey or sample represents a total of more than two million (2,166,687) adults aged 18-65 years old, including 1,090,231 males and 1,076,456 females. Among females, there were 693,910 (64.46%) observations on childbearing age women (18-45 years old) and 29,862 (4.30%) pregnant women respondents. A series of questions related to alcohol use captured the main observations on the variables of interest in this study. For example, the instrument included the following standard questions about alcohol use by the adults who participated in survey:

Have you ever consumed alcohol?

Consumed alcohol in the past 12 months?

Frequency of one standard during the past 12 months?

Have you consumed any alcohol within the past 30 days?

During the past 30 days, on how many occasions did you have at least one standard alcoholic drink?

A multistage clustered STEPS 2010 Georgia Survey methodology ensured that observations within the same cluster of population were correlated and valid (STEPS, 2012; STEPS Manual, 2015). Detailed information related to the primary survey sampling, face-to-face interviews and data collection can be found elsewhere (STEPS, 2012; STEPS Manual, 2015). Our study sample comprised data on 2,971 reproductive age women and 66 pregnant women. The range of sociodemographic variables and covariates on quantities (standard drinks) of alcohol consumed during lifetime, in the past 12 months and the past 30 days, as well as the number of binge drinking episodes in the past 30 days were available. In our analysis we included sociodemographic variables found in previous studies shown to be associated with drinking and drinking-related outcomes in women (CDC, 2014; Mokhtari et al., 2016; Pomerleau et al., 2008; Skagerstrom et al., 2011).

Measures

A standard drink is defined by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) as an equivalent to 14 grams of pure alcohol found in 12 ounces of regular beer, 5 ounces of wine, and in 1.5 ounces of distilled spirits (NIAAA, 2004). Binge drinking in women refers to an intake of four or more standard drinks on one occasion or within a two-hour period, and may bring blood alcohol concentration (BAC) level up to 0.08 grams percent or above (NIAAA, 2004).

Statistical Analysis

Data analyses were carried out using specialized survey command (Surveyfreq Procedure) in the SAS software version 9.4 (SAS Institute Inc. Cary, NC). The cross-sectional survey analysis was chosen as a preferred method in the study. The sample was broken down by age, ethnicity, household size, education, marital status, employment, and monthly household income. The weighted estimators of alcohol consumption and accompanied weighted standard deviation (SD)

were used for unbiased assessments of covariates. Sociodemographic correlates were examined with logistic regression in the total sample (to predict prevalence) and in subsamples of non-pregnant and pregnant respondents with lifetime, 12-months and 30-days prevalence of drinking. Binge drinking was assessed by one, two or four episodes. For inference, we used standard errors, chi-square and the p-values (<.05) for each of the estimated coefficients, which were confirmed to be statistically significant for gestational alcohol consumption during the past 30 days among Georgian women.

Results

Descriptive Analysis

The WHO STEPS Survey of Georgians includes 4,610 women aged 18-65 whose characteristics are provided in Table 1a. The data sample, however, consisted of 2,971 reproductive age women (aged 18-45), out of which 66 self-identified as being pregnant (Table 1b). Given a 95% participation rate in the survey and taking the sampling design into account, this implied that sixty six pregnant women ($n = 66$) between ages 18 – 45 represented almost thirty thousand ($N = 29,862$) pregnant women in Georgia.

Sociodemographic Correlates

Alcohol Consumption

Table 1b and Figure 1 show that the highest weighted relative frequency distribution in the sample was among 20-year-old pregnant women (17%), 99% constituted pregnant women 38 years old or younger, and 43% of pregnant women were 18-23 years old.

Table 2 illustrates that 67.51% of non-pregnant and 64.76% of pregnant women of childbearing age (< 46 years old) consumed alcohol (beer, wine, and spirits) during their lifetime. Also, half of

the non-pregnant women (51.89%) used alcohol in the past 12 months, and just over a one-fourth (27.41%) used it in the previous 30 days. In contrast, more than half (56.85%) of pregnant women used alcohol in the past 12 months, and over one-third (34.76%) used alcohol in the prior 30 days. This indicates that almost 10% of non-pregnant women ($9.60\% = 67.51\% \times 56.85\% \times 27.41\%$) and 13% of pregnant women ($12.79\% = 64.76\% \times 51.89\% \times 34.76\%$) used alcohol in the past 30 days. In Table 3 we can see that in Georgia nearly 25% of women (24.45%) also engaged in binge drinking as defined above. This implies that 70% of pregnant women ($70\% = 24.45\% / 34.76\%$) engaged in binge drinking during the past 30 days, half of them (51.51%) had at least four episodes, 14.51 % had two episodes and 4.31% had one episode of binge drinking.

Ethnicity, Household Size, and Age

In the sample, the majority of pregnant women self-identified themselves as Georgian (89.09%), and remaining were Azerbaijanis, Russians, Ossetians and Abkhazians women (Table 3). About one third of Georgian pregnant women (34.76%) reported drinking alcohol in the past 30 days. More than half of pregnant women (45.88%) lived in two-member households, 25.13% lived in a three-member, and or 22.83% in a four-member households. The rate of drinking was the highest (16.54%) among pregnant women who lived in two-member households followed by four-member households (13.38%). The rates of pregnancy (62.42%) and alcohol use (25.47%) were the highest among 18-25 years old women. Among 26-35 years old women the pregnancy prevalence was 28.14% and alcohol use was 6.62% and a much lower among women 36-45 years old women.

Marital Status and Education

Pregnant women (92.46%) in the study who were married or cohabitating had a higher rate of alcohol use (27.23%) than never married or divorced. More than half (57.72%) of pregnant women completed high school, about 25% (26.30%) completed college, and a smaller fraction (15.99%)

had completed secondary school or less. Pregnant women who completed high school or college had similar rates of alcohol use (15.38% vs. 14.34%) compared to women with secondary school education (5.05%).

Occupation and Income

The majority of pregnant women were homemakers (66.28%), followed by self-employed (13.06%) and government employees (10.92%). The rate of alcohol use among pregnant homemakers during the past 30 days was 20.43% and twice as high as among self-employed women (9.10%) and four times higher than among non-government employees (5.24%). Pregnant women in other occupations (government, student and unemployed) abstained from drinking during the previous 30 days. The highest rate of pregnancy (55.70%) and alcohol use in the past 30 days (33.5%) was among women in the lowest reported household income bracket of less than 200 GEL/month (equal to \$110 in October, 2010). It appears that a higher income was not associated with drinking during pregnancy as women in a higher income bracket of 200-400 GEL/month (8.98%) had lower pregnancy rate and very low rate of alcohol use (1.27%), and reported no alcohol consumption during the past 30 days.

Logistic Regression Analysis

Table 4a and Table 4b present the results from the multivariate logistic regression analysis with correlates on alcohol consumption among women aged 18-65 and pregnant women (aged 18-45) during the past 30 days. First, all of the available covariates were included in the regression model (Table 4a); thus, avoiding a stepwise approach that would have opened the analysis to potential spurious correlation or inference. However, limited number of observations on pregnant women ($n = 66$) did not allow for the full inclusion of all potential covariates (Table 4b). Based on the literature, the sociodemographic variables were controlled to avoid confounding. Given a rather

modest number of pregnant women in the sample ($n = 66$) and highly collinear sociodemographic characteristics, only a limited number of potential regressors were allowed in the final logit model to make inference about a large population (Table 4b). The proposed model fit (Table 4b) was overall fairly good, as reflected in the concordant of 75.40%, tied 9.2%, and discordant of 15.4%. The variations in the likelihood (odds) of drinking and binge in the past 30 days in a sample were well explained by the sociodemographic characteristics of pregnant women. The measures of standard error, chi-square tests, and p-values confirmed that a small household size (one-or two-member), occupation (self-employed) and income (<200 GEL/month) were all statistically significant ($p < .05$) for alcohol consumption during the past 30 days among pregnant Georgian women.

Pregnant women who lived alone (5.68, SD 1.64) were more likely to drink than those who lived in larger households (two-, three-, four- or five- or more-member). Likewise, pregnant women who lived in the two-member households (2.17, SD 0.86) were more likely to have consumed alcohol in the past month than those living in larger households. Self-employed pregnant women (5.11, SD 1.75) and women in low monthly income category (5.06, SD 2.15) had a substantially higher likelihood of drinking alcohol during the past 30 days. Table 4b shows that the results of adjusted odds ratios, after controlling for other factors. This provides certain (albeit limited) insight into the likelihood of drinking during pregnancy in Georgia.

Discussion

Using data from the World Health Organization's Stepwise approach to noncommunicable disease risk factor surveillance in Georgia (STEPS, 2010), this study examined prevalence and sociodemographic correlates of alcohol use among pregnant women in Georgia. The study sample of reproductive age (18-45) women was drawn from the STEPS, which is a large and nationally

representative survey of adults with a 95% participation rate. Frequencies, multivariate analyses and related statistics were computed to describe and study associations among the target population and the odds of alcohol consumption during pregnancy. In particular, we examined sociodemographic correlates in association with alcohol consumption among non-pregnant and pregnant women in Georgia. Comparisons are made across age groups, ethnicity, marital and employment status, household size and monthly income to capture alcohol use to determine the prevalence of lifetime, 12-months and 30-days drinking and binge drinking episodes.

In Georgia, about 67.51% of non-pregnant and 64.76% of pregnant women aged less than 46 years old consumed alcohol (beer, wine, and spirits) during their lifetime. The pregnancy rates in association with alcohol use were the highest among 18-25-year-old women. Almost 13% of pregnant women used alcohol in the past 30 days. This is 5.4 percentage points higher than that of 7.6% found in the United States ($5.4\% = 13\% - 7.6\%$) (Marchetta et al., 2012.), but it is within the range of 20% to 80% that has been reported in Ireland, Australia, New Zealand and the United Kingdom (O'Keeffe et al., 2015).

Recent research suggests that drinking patterns with heavy drinking in binges may indicate a stronger independent risk factor for adverse alcohol-related health outcomes (Rehm et al., 2001; Tan et al., 2015). Among those women who drank during their pregnancy in Georgia, nearly 70% drank alcohol in binges during the past 30 days, on more than one occasion. This pattern of drinking among pregnant women in Georgia may be a serious risk factor to their health and the health of offspring. Analysis of the data supports the hypothesis that pregnant women who were married, homemakers, from small household size (two-member), and with the lowest monthly income have a higher likelihood of alcohol use and binge drinking than others. In contrast,

unmarried, older (35–44 years old) and employed women living in the US were more likely alcohol drinkers while pregnant (Marchetta et al., 2012).

Alcohol use in pregnancy may vary across studies depending on the methods of data collection (interviewer-administered vs self-report questionnaires) (Rogers et al., 1998). Nonetheless, abstention and alcohol cessation are the best ways to achieve a healthy pregnancy. Despite the limitations imposed by the cross-sectional nature of the data, this study offers evidence that inform policies and initiatives that are designed to reduce harmful impact of alcohol use during pregnancy in Georgia. The findings in this study strengthen public health preventive strategies on abstinence that target reproductive age and pregnant women in the country of Georgia.

Contributions to Understanding Alcohol Use and Policy

As the oldest producer of wine in the world, Georgian culture has evolved to define alcohol consumption as an essential element for interpersonal relationships and behavioral norms and expectations. This cultural view hinders an understanding that alcohol use, in general, endangers public health and, in particular, the health of pregnant women. Thus, by quantifying the extent of the problem of alcohol use during pregnancy in Georgia this study challenges the existing cultural norms and informs policy makers of an existing problem that deserves their attention. Moreover, by reporting on the correlates of alcohol use during pregnancy, this study provides Georgian policy makers with evidence for targeting sub-groups that may be more susceptible to alcohol abuse during pregnancy than others.

Our quantitative assessment of the extent of alcohol use during pregnancy in Georgia contributes to those policies and initiatives that aim at reducing alcohol use among pregnant women. First, our study provides a base-line for assessing the evolution of alcohol use among pregnant women.

Second, our quantitative analysis informs policy makers in their efforts to target particular sub-groups among pregnant women who consume alcohol. Third, by providing an evidence-informed perspective, our study can be used as an initial model for monitoring and evaluation, where policy makers can measure and demonstrate whether interventions have positive effects in reducing alcohol use among pregnant women. By quantifying the problem of alcohol consumption during pregnancy and related sub-groups, our study improves policy makers understanding of these critical issues and provides a better quantitative target for initiatives and action, as well as a foundation for gauging future activities that may aim at prevention, reduction and abstinence from alcohol use by women.

Strengths and Limitations

The main strength of this study is availability of a national survey-based sample representative of the population in Georgia, where cultural and social environment approves of alcohol consumption in women. The resources provided by WHO STEPS project offered opportunity to begin health data gathering and to initiate national health surveillance system in Georgia (STEPS, 2012; STEPS Manual, 2015; Ustun et al., 2003). A second strength of this study is a high local interest and cooperation in survey with a 95% respondent participation rate. The survey includes data on alcohol drinking habits and binge drinking episodes among pregnant women during their lifetime, in the past 12 months and the past 30 days.

This study also has some limitations and weaknesses. The cross-sectional nature of the survey prevents us from ascribing causality between the variables of interest. Not having access to a longitudinal dataset is an important limitation in any study of alcohol use. The cross-sectional nature of the data used in this study limits ability to infer causal associations. Validity of measures, self-reports, recall bias and underreporting is a problem in most surveys of alcohol consumption

and are considered a limitation (Embree & Whitehead, 1998; Stockwell et al., 2004). There may also be a substantial underreporting of alcohol use by women before and during pregnancy that have heavily drinking partners (Balachova et al., 2012). No data were collected on drinking habits among underage youth as the national survey was restricted to adults aged 18-65 years old. Measure of the longer-term drinking pattern, quitting and resuming of drinking in subsequent pregnancies could complement research data. Therefore, systematic observations and regular alcohol screening in women and their partners can enrich data available to research that focuses on reproductive age women, particularly in the preconception period and during pregnancy.

Conclusion

Based on a national survey data, this study has identified a number of sociodemographic characteristics which are associated with high prevalence of alcohol use and binge drinking among pregnant women in the country of Georgia. Maternal use of alcohol during early pregnancy exposes the fetus to a range of adverse outcomes. Abstention and alcohol cessation ensure improved pregnancy outcomes and fetal growth and development. Evidence on the alcohol use by pregnant women in Georgia informs public health preventive strategies that target both reproductive age and pregnant women in the country of Georgia. For preventing alcohol-exposed pregnancies research must focus on studying and devising interventions that are effective at earlier ages. Future research based on continued systematic screening and surveillance at early age might shed light on women who remain at the highest risk for alcohol exposure before pregnancy is recognized.

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Contributors

M. Mokhtari designed and coordinated the study and undertook the statistical analysis. All authors contributed to drafting of the manuscript. All authors approved the final manuscript.

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About the Authors

Manouchehr Mokhtari, Ph.D., is an Associate Professor at the School of Public Health at the University of Maryland, College Park. He is also an Affiliate Faculty of the Horowitz Center for Health Literacy, and holds a Faculty Associate position with the Maryland Population Research

Center (MPRC). He received his MA and Ph.D. from the University of Houston, Texas. He has served as a faculty at Princeton University, University of Houston, NES (Russia), and the Eurasian University (Kazakhstan). He has also served as the senior adviser to the governments of twelve countries in Central Asia, Caucasus, Middle East, and Eastern Europe. His primary research interests are health policy analysis, the assessment and treatment of alcohol use, fertility and obesity. Dr. Mokhtari is on the editorial boards of more than ten journals and has served as the editor for a number of special issues on health systems strengthening and health policy analysis.

Anthony Kondracki, MD, MPH, CPH, is a fourth-year doctoral candidate in Maternal and Child Health at the School of Public Health at the University of Maryland, College Park. He received his MD from the Jagiellonian University College of Medicine in Krakow (Poland) and his MPH from Tulane University. Dr. Kondracki's primary interests are in maternal factors leading to short and long-term effects of preterm birth and low birthweight.

Lasha Kavtaradze, Ph.D., is an Assistant Professor at the International Black Sea University, an invited lecturer at the University of Georgia and Ilia State University, and an economist at Galt & Taggart. Formerly, he was the Head of Macroeconomic Analysis and Tax Policy Unit at the Parliamentary Budget Office of Georgia. He received his Ph.D. in Public Economics from the Catholic University of Milan, Italy. Dr. Kavtaradze's research interests are public policy analysis, macroeconomics, econometrics, forecasting, monetary and fiscal policies.

Jacqueline Wallen, Ph.D., MSW, is an Associate Professor Emerita in the Department of Family Science, School of Public Health, University of Maryland, College Park. She earned her Ph.D. from the University of Chicago and her MSW from Catholic University. Her primary research

interests are health and mental health services research, health care disparities, and women's health care issues.

Mamak Ashtari, MBA, is an international consultant who provides technical assistance for promoting evidence-based policy analysis in Central Asia, Caucasus, Middle East, and Eastern Europe. Ms. Ashtari's research interests are health policy analysis, and anti-corruption in health industry and public finance.

Gvantsa Piralishvili, Ph.D., MD, is a Deputy Chair of Council of Science Experts at the Center for Mental Health and Prevention of Addiction, Tbilisi, Georgia. She received her MD and Ph.D. from Tbilisi State Medical University and Tbilisi State Medical Academy. She is an alumna NIDA/CTN/INVEST Fellow at the University of Pennsylvania and the Delaware Valley Node of the Clinical Trial Network. Her primary research interests are the assessment and treatment of drug and alcohol abuse.

Marina Topuridze MD, MS, is a chief Specialist at Health Promotion Division, Non-communicable Disease Department, National Center for Disease Control and Public Health (NCDC), Tbilisi, Georgia. She received her MD from Tbilisi State Medical University and her MS in Epidemiology from SUNY Albany, New York. Dr. Topuridze's primary research interest is non-communicable disease risk behaviors, health policy, promotion and education.

Khatuna Todadze, Ph.D., MD, is the Head of Department of Narcology and the Vice-Rector of Tbilisi State Medical University. She also works as a Deputy Director General of the Center for Mental health and Prevention of Addiction. She received her MD and Ph.D. from Tbilisi State

Medical University. She is the founder of opioid substitution treatment (OST) and the Coordinator of Methadone Maintenance Programs in Georgia and its prison.

Lasha Kiladze, MD, is the Director-General at the Center for Mental Health and Prevention of Addiction in Tbilisi, Georgia. He also serves a psychiatrist at the Military Hospital. After receiving his MD and psychiatry degree from Tbilisi State Medical University, Dr. Kiladze completed a course on Medical Projects Managements at the Institute of Development Studies - Oxford Policy Management. His areas of research interests include management of healthcare and harm reduction projects, addictology, alcohol-induced psychotic and behavioral disorders, and suicidology.

Nino Gachechiladze, MSc, is a Senior Researcher at the Analysis and Consulting Team (ACT). She is also a board member at the Institute of Social Researches (ISR). She received her MSc degree in Social Research from the University of Edinburgh, United Kingdom. Ms. Gachechiladze's research has focused on gender studies, GBV, and women's health.

Conflict of Interest

All authors declare no conflict of interest. All authors declare that they have no proprietary, financial, professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled *Prevalence and Correlates of Alcohol Consumption During Pregnancy in Georgia: Evidence from a National Survey*.

Table 1a. Sociodemographic Characteristics of Georgian Women Aged 18 – 65

Female (n = 4610)					
	Raw Freq	%	SD	Chi-Square	
Ethnicity					
Georgian	4,049	87.80	1.81	188.01	
Ossetian	43	0.71	0.21	1,247.21	
Azerbaijani	164	6.01	1.71	161.61	
Armenian	259	4.41	0.91	399.61	
Russian	54	0.81	0.21	3,722.91	
Household Size					
One	858	7.41	0.50	1,908.90	
Two	1,473	25.71	1.00	432.20	
Three	1,177	29.81	1.00	340.30	
Four	670	20.31	1.00	629.70	
Five or more	391	16.50	1.10	478.40	
Age					
18 – 25	550	21.20	1.20	397.00	
26 – 35	674	22.50	0.90	641.90	
36 – 45	827	20.80	0.80	855.10	
46 – 55	1,221	23.10	0.80	812.10	
56 – 65	1,342	12.40	0.60	1,924.00	
Marital Status					
Never married	614	18.90	1.00	609.20	
Separated	136	1.50	0.20	4,794.20	

Divorced	187	3.20	0.30	2,820.30
Widowed	725	7.80	0.40	2,687.20
Married	2,907	68.20	1.00	262.70
Maternal Status				
Pregnant	66	2.80	0.40	1,643.70
Smoker				
Smoker	201	4.80	0.50	1,298.60
Education				
Secondary school	372	9.11	1.21	1,363.61
High School	2,711	57.81	1.41	413.21
College	1,486	32.80	1.20	185.70
Occupation				
Government	1,859	15.70	0.90	823.60
Non-government	823	5.50	0.60	1,332.20
Self-employed	207	6.70	0.50	1,619.70
Non-paid	314	0.30	0.10	2,168.20
Student	10	6.80	0.70	1,116.40
Homemaker	140	42.50	1.30	35.20
Retired	567	5.30	0.40	2,805.90
Unemployed	588	15.80	0.90	738.10
Unable to work	61	0.10	0.20	1,815.10
Monthly Income (GEL)				
=< 200	2,766	53.40	1.80	3.90
> 200 to <=400	1,013	23.50	1.10	460.00

>400 to <=800	615	16.50	1.10	510.70
> 800 to <=1600	193	5.70	0.60	1,110.50
More than 1600	27	0.80	0.20	2,099.40

Data: WHO's STEPwise Approach to Noncommunicable Disease Risk Factor Surveillance

SD: Standard Deviation; Chi-square: Rao-Scott Chi-Squared statistics.

Raw Freq: Raw Frequencies

Software: SAS (Surveyfreq Procedure)

Table 1b. Pregnancy Distributions by Age, Georgia 2010

Age	Raw Frequency	Weighted Relative Frequency	Weighted SD (%)
19	1	0.77	0.77
20	9	16.52	5.57
21	1	1.91	1.93
22	6	11.27	4.41
23	7	12.26	4.45
24	5	6.20	2.93
25	5	5.08	2.41
26	3	5.79	1.55
27	1	0.55	0.55
28	4	5.65	3.32
29	3	5.25	3.13
30	3	4.30	2.53
31	1	0.66	0.67
32	4	7.39	4.11
33	1	2.28	2.26

34	3	6.56	3.28
35	2	1.27	0.92
36	1	1.02	1.03
37	2	1.63	1.20
38	3	2.45	1.44
45	1	1.19	1.19

SD: Standard Deviation

Figure 1. Pregnancy Distributions by Age in the Country of Georgia, 2010

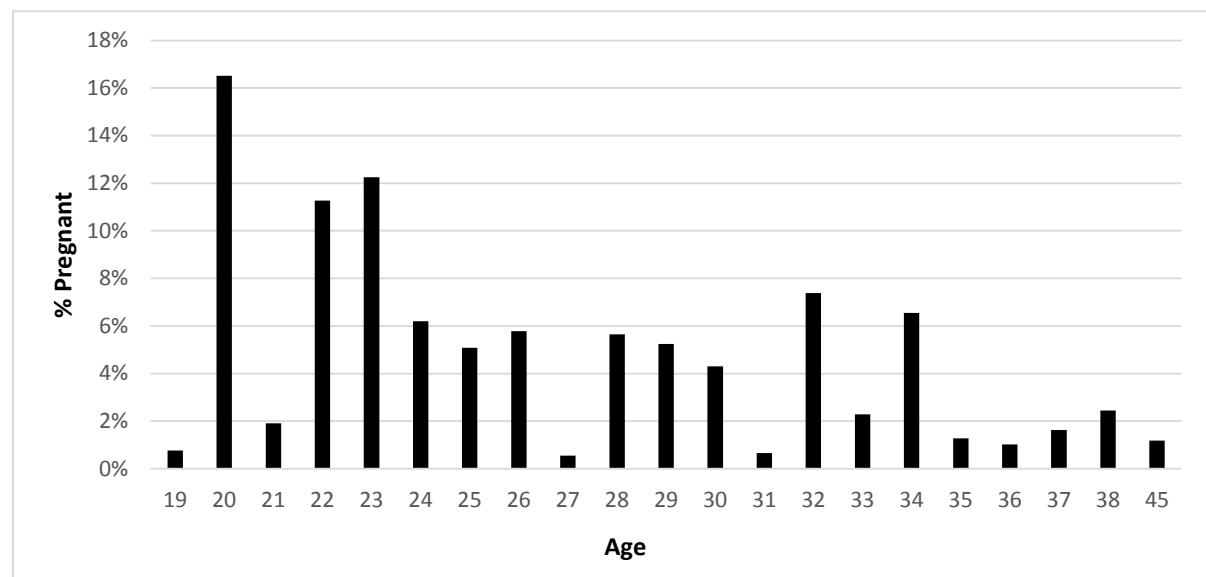


Table 2. Prevalence of Drinking among Non-Pregnant and Pregnant Women, Georgia 2010

	Raw Frequency	Weighted Relative Frequency (%)	Weighted SD (%)
Alcohol Consumption by Non-Pregnant Women (Age < 46)			
Ever Consumed Alcohol (X = % of non-pregnant women)	1,245	67.51	2.36
Consume Alcohol in past 12 Months (Y = % of X)	952	51.89	2.34
Consumed Alcohol in past 30 Days (Z = % of Y)	500	27.41	1.78
Alcohol Consumption by Pregnant Women (Age < 46)			
Ever Consumed Alcohol (X = % Of pregnant women)	46	64.76	7.06
Consume Alcohol in past 12 Months (Y = % of X)	31	56.85	7.13
Consumed Alcohol in past 30 Days (Z = % of Y)	9	34.76	8.80
Binge drinking by Pregnant Women in the Past 30 Days (Z = A1 + A2)			
Binged on Alcohol (A1= Z – A2)	5	24.45	8.07
Consumed Alcohol without Binging (A2 = Z – A1)	4	10.31	5.53
<i>Frequency of Drinking Alcohol in the Past 30 Days</i>			
(100% = B1 + B2 + B3 + B4)			
Drank Alcohol without Binging (B1 = % of Z)	4	29.65	13.18
Binge Drinking Once (B2 = % of Z)	1	4.31	0.70
Binge Drinking Twice (B3 = % of Z)	1	14.51	14.24
Binge Drinking More Than Four Times (B4 = % of Z)	3	51.51	7.88

SD: Standard Deviation

Table 3. Prevalence of Drinking Patterns among Pregnant Women in Georgia, 2010.

	"Have you consumed any alcohol within the past 30 days?"							
	Full Sample		Consumed		Did Not Consume		Chi-square Test	
	%	SD	%	SD	%	SD	Chi-Square	p-value
Ethnicity								
Georgian	89.09	4.40	34.77	8.81	90.22	6.75	37.12	0.01
Russian	2.35	1.81	.	.	2.73	0.15	19.67	0.01
Ossetian	0.91	0.89	.	.				
Armenian	0.98	0.98	.	.				
Azerbaijani	6.69	3.85	.	.				
Household Size								
One	3.57	3.66	3.57	3.66				
Two	45.88	7.00	16.54	5.65	44.98	3.26	2.46	0.11
Three	25.13	6.61	1.27	0.09	36.57	8.13	2.84	0.09
Four	22.83	8.97	13.38	8.87	14.48	7.51	23.42	0.01
Five or more	2.58	0.19	.	.	3.95	0.21	49,673.02	0.01
Age								
18 - 25	62.42	8.58	25.47	8.51	56.64	9.91	0.47	0.49
26 - 35	28.14	7.89	6.52	0.48	33.14	10.41	2.74	0.09
36 - 45	9.44	5.02	2.78	2.85	10.21	3.85	111.57	0.01
Marital Status								
Never married	5.24	0.39	5.24	0.39	.	.	.	.
Divorced	2.31	2.32	2.31	2.32	.	.	.	.
Married/Cohabiting	92.46	2.42	27.23	8.71	.	.		
Education								
Secondary school	15.99	6.39	5.05	4.97	16.77	7.44	20.88	0.01
High school	57.72	9.23	15.38	6.88	18.32	4.98	42.23	0.01
College or Higher	26.31	8.26	14.34	8.28	16.74	3.82	79.16	0.01
Occupation								
Government	10.92	2.61	.	.	16.74	3.82	79.16	0.01
Non-government	5.24	0.39	5.24	0.39	.	.	.	.
Self-employed	13.06	9.22	9.11	8.57	6.06	5.88	58.32	0.01
Student	2.09	0.16	.	.	3.21	0.17	78,294.93	0.01
Homemaker	66.28	8.24	20.43	7.64	70.28	5.41	14.76	0.01
Unemployed	2.41	1.69	.	.	3.69	2.61	331.96	0.01
Monthly Income (GEL)								
=< 200	55.71	7.27	33.51	8.84	34.03	2.01	66.62	0.01
> 200 to <=400	8.98	4.21	1.27	0.09	11.81	4.36	80.01	0.01
> 400 to <=800	22.74	5.02	.	.	34.86	6.06	6.51	0.01
> 800 to <=1600	12.58	4.48	.	.	19.27	6.41	24.01	0.01

Chi-square Test: chi-squared test for independence.

Table 4a. Results of Multiple Logistic Regression Analysis with Correlates of Alcohol Consumption during the Past 30 Days among Women Aged 18 – 65 in Georgia

Female (n = 4610)				
% Concordant	0.66			
Effect	Odds	95% CL	<i>p</i> -values	
Ethnicity				
Ossetian	0.49	0.10	2.50	0.39
Azerbaijani	0.08	0.02	0.29	<0.01
Armenian	0.52	0.14	1.91	0.32
Russian	0.92	0.23	3.70	0.90
Household Size				
Two	0.67	0.43	1.03	0.07
Three	0.79	0.51	1.24	0.31
Four	0.93	0.54	1.60	0.80
Five or more	1.00	0.58	1.72	0.99
Age				
26 - 35	0.84	0.48	1.48	0.55
36 - 45	0.79	0.47	1.35	0.40
46 - 55	0.56	0.33	0.96	0.04
56 - 65	0.46	0.25	0.86	0.01
Marital Status				
Never married	1.09	0.67	1.79	0.73
Separated	0.75	0.25	2.24	0.60
Divorced	0.47	0.21	1.04	0.06
Widowed	0.45	0.26	0.78	<0.01
Maternal Status				
Pregnant	0.62	0.23	1.68	0.35
Smoking				
Smoker	3.00	1.84	4.89	<0.01
Education				
Secondary School	2.00	1.09	3.67	0.02
College or higher	1.43	0.99	2.05	0.06
Occupation				
Government	1.05	0.64	1.72	0.84
Non-government	0.83	0.40	1.70	0.61
Self-employed	1.30	0.73	2.30	0.38
Non-paid	1.29	0.12	13.59	0.83
Student	1.31	0.66	2.63	0.44
Retired	0.48	0.25	0.92	0.03
Unemployed	0.61	0.39	0.98	0.04
Unable to work	0.72	0.13	3.86	0.70
Monthly Income (GEL)				
> 200 to <=400	0.49	0.33	0.72	<0.01
> 400 to <=800	0.52	0.33	0.82	0.01
> 800 to <=1600	0.75	0.39	1.45	0.39
More than 1600	1.06	0.29	3.91	0.93

Table 4b. Multivariate Logistic Regression Analysis with Correlates of Alcohol Consumption among Pregnant Women during the Past 30 Days.

Covariates (control groups)	Coefficient Beta Estimate	Standard Error	Chi- Square	p-value	Odds Ratio Estimates	95% CL	
Intercept	-7.85	2.45	10.24	<0.01			
Age (18-35)							
36 – 45	1.22	2.27	0.29	0.59	3.37	0.04	287.52
Household Size (Three or more)							
One	5.68	1.64	12.03	<0.01	293.91	11.85	>999.99
Two	2.17	0.86	6.41	0.01	8.72	1.63	46.65
Marital Status (Married)							
Divorced	1.72	1.08	2.53	0.11	5.58	0.67	46.56
Education (High School or lower)							
College or Higher	-0.13	0.89	0.02	0.89	0.88	0.16	5.00
Occupation (Homemaker, Government, or unemployed)							
Self-employed	5.11	1.75	8.55	<0.01	166.13	5.39	>999.99
Monthly Income (> 200 GEL)							
=< 200	5.06	2.15	5.53	0.02	157.37	2.32	>999.99
% Concordant: 75.4							
% Discordant 15.4							
% Tied: 9.2							

Social Determinants and Substance Use: A perspective beyond the policy 'silo' pragmatics

*By Shane Varcoe, National Training & Partnerships Officer, Dalgarno Institute, and
Derek Steenholdt, Research Officer, Dalgarno Institute*

Editor's note: Due to the length of this paper, we are featuring only the abstract and provide the link to the full paper at the end.

Abstract

The factors which have influenced the uptake of illicit drug use in advanced and developing countries can be traced back to shifts away from traditional moral principles and changes in ethical attitudes relating to personal versus government responsibilities through significant changes in government policies as much as a century ago. (Etzioni 1996). These changes towards amoral approaches to social issues and greater government responsibility for personal health issues have influenced the language we use to describe the influence of illicit drugs on human behaviour, preferring to explain the harms resulting from drug abuse as essentially “health” issues. (Dalrymple, 2007)

This paper explores how these factors and other social determinants have influenced the uptake and increased consumption of illicit drugs by the general population in developed countries and gives due consideration to the substantial and ever increasing social, economic and health costs to societies world-wide. (Australian Institute of Family Studies 2008;

National Drug Strategy Household Survey 2013; Stutman, 2013; W.H.O. Commission on Social Determinants of Health, 2008) International policy development and national attempts to implement effective illicit drug related policies are discussed in light of data which has been collated through national and international studies. (W.H.O. 2013).

The authors posit that there is a need to address underlying issues and principles relating to personal responsibility; and at a national level, a need to present a unified approach across government departments in preventing harm from illicit drugs, which have in the past been seen as adopting a narrow “silo” approach (Carey & Crammond, 2014). It is proposed that much can be achieved through implementing an effective model for addressing social determinants which impact on communities and contribute to the increasing incidence of drug and alcohol abuse and associated negative impacts being reported in developed countries. (UN Commission on Narcotic Drugs, 2016)

Only clear and unambiguous policy frameworks, along with policy implementation which ensures Demand Reduction and Prevention – along with effective drug exiting Recovery Programs – will see the health, community and familial outcomes that societies focused on reducing drug use can achieve.

To view the full paper, please [click here](#).

About the Authors

Shane W. Varcoe

Shane Varcoe is currently the National Partnerships & Training Officer for the Dalgarno Institute, a community-based, not-for-profit, public interest coalition of alcohol and drug educators in Australia, deploying Train the Trainer Drug Education model nationally.

Previously as Executive Director of the Dalgarno Institute, he designed, implemented and led numerous prevention programs and campaigns, such as the ‘No Brainer’ alcohol and other drug education project. As Director of Education Services for Concern Australia, he led the Values 4 Life schools program. He also has authored a number of papers, studies and books. He is a registered Chaplain with a Diploma of Ministry, A.C.R.A.C.S. (Advanced Certificate Residential & Community Services) qualifications, and has over 30 years of youth/community work, education and facilitation experience.

Derek Steenholdt, Master Educator, Emeritus

Derek currently serves in an unpaid staff role as a Research Officer for Dalgarno Institute in Australia. His qualifications are: MEdSt; Bed (Prim); BEd; BSc (Hons); Certificate III in Quality Management for Business Excellence, AQC, 2001; Certificate IV in Workplace Training and Assessment, ISIS RTO, 1999; Workplace Assessor, West Melbourne Institute of TAFE, 1998; Master of Educational Studies, Monash, 1991; Bachelor of Education (Primary), Deakin, 1993; Bachelor of Education, Monash, 1978; Bachelor of Science (Honours), Monash, 1971.

Conflict of Interest

I declare that I have no proprietary, financial, professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled, *Social Determinants and Substance Use: A perspective beyond the policy ‘silo’ pragmatics*, except for the following: Shane Varcoe is the National Training & Partnerships Officer of the Dalgarno Institute and Derek Steenholdt is an unpaid Research Officer of the Dalgarno Institute.