

# Transcultural Differences in Alcohol Use among Slavic, Arabian And Nigerian Students: A Case Study in Belarus

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## Abstract

**Background:** Alcohol use by university students is a major public health problem in Belarusian campuses. The patterns of alcohol use might vary among students of different cultural backgrounds.

**Aims & Objectives:** Differences in alcohol use and related problems among undergraduates of various ethnic groups - Slavs, Arabians and Nigerians in Minsk, Belarus were examined.

**Methods / Study Design:** The study was randomized and anonymous, involving a total of 1549 respondents: 1345 Slavic, 120 Arabian and 84 Nigerian students in Minsk, Belarus. All respondents were administered questionnaire containing the AUDIT, CAGE, MAST and other alcohol related questions.

**Results / Findings:** Overall, 91.08% Slavs, 63.33% Arabs and 56.82% Nigerians were alcohol users. A total of 16.28% Slavic, 32.50% Arabian and 22.73% Nigerian problem drinkers were identified using the AUDIT. Generally, the use of weak strength alcoholic beverages (beer) was higher in the students' population of all ethnicities.

**Conclusion:** The level of alcohol use and related problems in the general Belarusian students' population is high. Differences in the pattern of alcohol use and related problems exist among students of various ethnicities (Slavs, Arabians and Nigerians) in Minsk, Belarus. Alcohol related problems were higher among the Arabs and Nigerians, compared to the Slavs. Similarities in the average AUDIT, CAGE and MAST scores amongst the Slavs and Nigerians, as well as preference for alcoholic beverages among the students of all ethnicities were noted. Higher scores were recorded only on the AUDIT and MAST for the Arabs.

**Key Words:** Transcultural, alcohol use, Slavic, Arabian, Nigerian, students, Belarus.

## **Introduction**

Alcohol use is a risk factor for health and significantly contributes to the burden of disease world wide (Razvodovsky 2008; Catherine 2004). According to some researchers one of the major risks for health is associated with heavy alcohol use (Welcome et al, 2008; Wechsler et al, 1994; Weitzman et al, 2004).

Recent epidemiological data have consistently shown that the level of alcohol problems is high among the students' population (Wechsler et al, 1994; Weitzman et al, 2004). High level of alcohol problems in the general students' population calls for the necessity of carrying out preventive measures aimed at early detection of alcohol problems, with subsequent consultation and therapeutic intervention. In the general students' population alcohol use results in low academic performance. Expulsions from school, traffic offences and accidents, asocial behaviors, injuries, blackouts etc are all effects of alcohol use by students (Wechsler et al, 1994; Weitzman et al, 2004; Manuel & Walt, 2005; Paschall & Freisthler, 2003).

In Belarus, there is a paucity of data addressing the problem of students' alcohol use. This has contributed partly to the increase in the prevalence of alcohol use and related problems, as no intervention program is carried out (Welcome et al, 2008; Razvodovsky 2008; Catherine 2004). The pattern of alcohol use might differ among various ethnic groups, even in the same cultural settings (Catherine 2004; Caetano et al, 1998; Dong-Eok & Jorge, 2004; Emmanuel et al, 2005). A screening result that will address the prevalence of alcohol use and related problems in the general students' population of various ethnic groups will be of great importance. Also, the students' population is easily accessible, and every data suggest that screening for the prevalence of alcohol use in the student's population, and subsequent intervention is of great benefit to public health (Elissa & Toben 2004; Federico & Diane 2007).

Presently, in epidemiological research, for determining the level of problems related with alcohol use in the general population, certain psychometric screening instruments are widely used. The most commonly used instruments are the AUDIT (The Alcohol Use Disorders Identification Test), MAST (Michigan Alcohol Screening Test), and CAGE (the Cut, Annoyed, Guilty and Eye questionnaire) (Welcome et al, 2008; Gache et al, 2005; Hays et al, 1995). These instruments are highly sensitive (85-94%) and specificity (79-93%) for early detection of alcohol problems (Welcome et al, 2008; Hays et al, 1995).

The aim of this survey was to screen for the prevalence of alcohol use and related problems among university students of different ethnicities: the Slavs, Arabians and Nigerians in Minsk, Belarus.

## **Materials and methods**

**Study population:** Minsk is the capital city of Belarus with the highest number of students (foreigners and natives). There are four major universities (the Belarusian State University, Belarusian State Medical University, Belarusian National Technical University and Belarusian State Agrarian Technical University) in Minsk, where the native Belarusians, Arabians and Nigerians study. Presently, about 93 Nigerians; 350 Arabians and about 12000 Slavs study in these universities. Majority of students in these universities are Christians (94%). Others are Muslims (5%), atheists and non-religious (1%).

**Sampling size and technique:** A total of 2210 Slavic; 250 Arabian and 90 Nigerian students at random were explained the study aims and objectives, only those who agreed to participate were considered for interview in their various universities. Overall, 1549 students: 1345 Slavs (mean average age = 21 yrs) (352 males and 993 females), 120 Arabians (mean average age = 21.5 yrs) (89 males and 31 females) and 84 Nigerians (mean average age = 21.5 yrs) (73 males and 11 females) agreed to participate. All Arabians and Nigerians are foreigners studying in Minsk. Arabians were Iraqi and Saudi Arabian origin. While a majority of the Slavic students were Belarusians (97%), others were Russians (2%) and Ukrainians (1%). The participants: Slavic students were 96% Christians, 3% Muslims, atheists/non-religious (1%); Arabian students were 98% Muslims and 2% Christians; Nigerian students were 99% Christians and 1% – Muslims.

**Procedure:** The Ethics and Research Committee of the various universities approved the study protocol and informed consents were obtained from the respondents after the aims and objectives of the study had been explained. All students were administered questionnaire containing the AUDIT, CAGE, MAST and other alcohol related questions. All questionnaires were distributed evenly among students of year one to final year of university education in all four major universities.

**Measures:** A score of  $\geq 8$  on the 10-item AUDIT defines alcohol related problems (Welcome et al, 2008). Non-problematic alcohol use was determined on the AUDIT from scores of 1 through 7. Abstinence was defined as a score of zero on the AUDIT. Students with scores  $\geq 1$  were considered as alcohol users (Welcome et al, 2008; Gache et al, 2005). A score of 2 through 4 on the CAGE was considered clinically significant. Students with scores of  $\geq 3$  on the MAST were defined as problem drinkers (i.e. students with alcohol related problems). A standard drink was set at 8g of absolute ethanol (Welcome et al, 2008; Gache et al, 2005; Hays et al, 1995).

**Data analysis:** All statistical analyses were performed using SPSS (Statistical Package for the Social Sciences) 16.0 version for Windows; the criteria of Pearson,  $\chi^2$  and Student's *t* tests (Bland 2000). The probability value for significance was set at  $p < 0.05$ . All volumes of alcohol are given in values of absolute ethanol. Results are displayed as means and standard error of means ( $M \pm m$ ), as well as in percentages, %.

## Results

The mean statistical results of all respondents (Slavs, Arabians and Nigerians) on the AUDIT, CAGE and MAST are given in table 1. The average scores were significantly

higher on the AUDIT and MAST for the Arabians, compared to scores for the Slavs and Nigerians ( $p < 0.02$ ). There were no significant differences in the average AUDIT, CAGE and MAST scores of the Slavs and Nigerians (Table 1).

Table 1: Total average AUDIT, CAGE and MAST scores of students of various ethnic groups

Parameters	Average score, $M \pm m$		
	AUDIT	CAGE	MAST
Slavs (n=1345)	4.38 $\pm$ 0.14	0.56 $\pm$ 0.03	0.94 $\pm$ 0.05
Arabs (n=120)	6.70 $\pm$ 0.88	0.89 $\pm$ 0.10	2.76 $\pm$ 0.38
Nigerians (n=84)	4.18 $\pm$ 0.87	0.68 $\pm$ 0.17	1.20 $\pm$ 0.32

Overall, 91.08% (n=1225) Slavs, 63.33% (n=76) Arabians and 60.71% (n=51) Nigerians were alcohol users (Table 2). On the AUDIT, a total of 16.28% (n=219) Slavs, 32.50% (n=39) Arabians and 22.62% (n=19) Nigerians were problem drinkers (Table 2). The total percentage of Arabian problem drinkers was significantly more than the Slavs by approximately 2.0 times ( $\chi^2=19.97$ ,  $p < 0.005$ ) on the AUDIT; 2.1 times ( $\chi^2=21.38$ ,  $p < 0.005$ ) on the CAGE and 3.4 times ( $\chi^2=20.70$ ,  $p < 0.005$ ) on the MAST. Although, the total number of problem drinkers among the Arabians was slightly more than the Nigerians, there was no statistical significance. Also, in respect to the percentages of problem drinkers no value for significance was recorded between the Slavs and Nigerians.

Table 2: Gender differences in the percentages of alcohol users and problem drinkers among the Slavs, Arabs and Nigerians on the AUDIT, CAGE and MAST

Ethnicities	Sex	Alcohol users, %	Problem drinkers, %		
			AUDIT	CAGE	MAST
Slavs	M (n=352)	94.32 (n=332)	34.66 (n=122)	27.84 (n=98)	19.60 (n=69)
	F (n=993)	89.93 (n=893)	9.77 (n=97)	11.08 (n=110)	5.44 (n=54)
	Total (n=1345)	91.08 (n=1225)	16.28 (n=219)	15.46 (n=208)	9.14 (n=123)
Arabs	M (n=89)	61.80 (n=55)	35.96 (n=32)	37.08 (n=33)	34.83 (n=31)
	F (n=31)	58.06 (n=18)	22.58 (n=7)	16.13 (n=5)	19.35 (n=6)
	Total (n=120)	63.33 (n=76)	32.50 (n=39)	31.67 (n=38)	30.83 (n=37)
Nigerians	M (n=73)	61.64 (n=45)	23.29 (n=17)	24.66 (n=18)	23.29 (n=19)
	F (n=11)	54.55 (n=6)	18.18 (n=2)	18.18 (n=2)	18.18 (n=2)
	Total (n=84)	60.71 (n=51)	22.62 (n=19)	20.45 (n=20)	20.45 (n=19)

The number of alcohol users and problem drinkers was lower among the females of both ethnicities. But, a significant proportion of both male and female Slavic students had higher alcohol users, compared to other ethnic groups (Table 2). Despite the higher rate of alcohol use by Slavic females, they had lower percentage of problem drinkers, compared to the Arabian and Nigerian females. The percentages of problem alcohol users among the Slavs on the MAST were lower than that of the AUDIT and CAGE (Table 2).

Table 3: Quantity of alcohol use and percentages of some alcohol related problems among the Slavs, Arabs and Nigerians. Only Alcohol users

Ethnicities	Dose/person-month (ml)	Loss of control, %	Hangover, %	Blackouts, %	Injuries, %
Slavs (n=1225)	123.9	22.35	16.26	32.1	27.08
Arabs (n=73)	116.1	47.68	41.23	49.53	46.77
Nigerians (n=51)	104.0	29.17	16.67	25.25	20.83

Analysis of the quantity of alcohol use showed no significant differences among students of all ethnic groups, although the amount was higher among the Slavs by 7.8ml and 19.9ml, than the values for the Arabs and Nigerians respectively (Table 3). The monthly frequency of alcohol use was also very low for both Arabs and Nigerians (1-2 times), compared to the Slavs who use alcoholic beverages 2-4 times on the average. Cases of some alcohol related problems like injuries, blackouts, hangover and loss of control was more in the Arabian students' population than in the Slavic and Nigerian population. But no significant differences were noted between the Slavs and Nigerians (Table 3).

Table 4: Preference for different alcoholic beverages by different ethnic groups; Only Alcohol users

Ethnicities	WSAB, %	ASAB, %	SSAB, %	WASSAB, %
Slavs (n=1225)	70.29 (n=861)	7.51 (n=92)	10.04 (n=123)	12.16 (n=149)
Arabs (n=73)	46.58 (n=34)	20.55 (n=15)	21.92 (n=16)	10.96 (n=8)
Nigerians (n=51)	56.86 (n=29)	23.53 (n=12)	11.76 (n=6)	7.84 (n=4)

N/B: WSAB – weak strength alcoholic beverages (beer); ASAB – average strength alcoholic beverages (wine); SSAB – strong strength alcoholic beverages (vodka and other spirits); WASSAB – weak/average/strong strength alcoholic beverages (beer, wine, vodka and other spirits). Composition of alcohol in the various alcoholic beverages: beer – <7%; wine – 7-17%; vodka/other spirits – ~40% (Welcome et al, 2008).

From table 4, generally, the use of weak strength alcoholic beverages was higher among students of all ethnicities; however weak strength alcohol users were significantly higher among the Slavs, compared to the Arabs and Nigerians. The use of average and strong strength alcohol or its combination was lowest in the general student population. The percentage of strong strength alcohol users showed an increase among the Arabs (up to ~22%, compared to only 10% and 12% for the Slavs and Nigerians respectively). Among average strength alcohol users, the percentage was also higher for both the Arabs and Nigerians than in the Slavic population by 2.7 times and 3.1 times respectively.

The major factors that encourage alcohol use in the general students' populations of all ethnicities were drinking to reduce bad mood, on days of wages, for the sweet qualities of alcohol and to get drunk.

### Discussion

The cut-off point for problematic alcohol use in this study is in agreement with the recommended cut-off for the various screening tools in Belarus (Welcome et al, 2008).

Before entrance into the university (before arrival in Belarus) approximately half of all Arabian and Nigerian students reported abstinence. The high proportion of alcohol users and relatively low problem drinkers among the Slavs, compared to the Arabians and Nigerians with lower number of alcohol users, but relatively higher proportion of problem drinkers (Table 2) might be linked to many factors (*see below*). The higher level of alcohol related problems in the Arabian students' population, compared to the Slavs and Nigerians might be partly due to their socialization peculiarities and even differences in biological constitution (for example, the high Km enzymes of alcohol metabolism have been confirmed to be of low prevalence in Asian decent, as a result, they are more prone to experiencing greater effect of alcohol use, compared to other ethnic groups) (Wall et al, 1997). It has been suggested that Muslims (as 98% of the Arabs in this study were Muslims) might find it very difficult to cope in a society where alcohol use is part of the daily life of the people (Catherine 2004; Caetano et al, 1998; Dong-Eok & Jorge 2004; Emmanuel et al, 2005). Subsequently, their means of socialization are affected, which might probably result in alcohol use (Caetano et al, 1998; Dong-Eok & Jorge 2004). According to Durkheim's theory, rapid cultural change causes a condition called anomie - the absence within a society of common social norms and controls. Under those conditions, people lack clear behavioral guidelines, possibly resulting in self-destructive tendencies (e.g., depression and alcohol abuse, alcohol dependence). In the same way, Leighton argued that rapid social change and disruptions (e.g. conflicting cultural values and fragmented communication) cause high stress levels that can result in deviant behaviors and psychological disorders, which might subsequently result in alcohol use and abuse (Welcome et al, 2008; Caetano et al, 1998; Frone 1999). Religion also plays a major role in peoples' attitude toward alcohol use. A low level of alcohol consumption in Muslim societies is a classical example of the protective influence of religion on alcohol use (Welcome et al, 2008; Catherine 2004; Caetano et al, 1998; Wall et al, 1997). Epidemiological data suggest that Muslims might experience high rate of alcohol problems in case of alcohol use, as a result of their lack of experience regarding alcohol use (Caetano et al, 1998; Bloomfield et al, 2005; Heath 1995). This could likely be one of the reasons why even for approximately equal quantity of alcohol use among students of all ethnic groups, the Arabian students still had higher alcohol related problems compared to their Slavic counterparts.

Generally, among the various ethnic groups – Slavs, Arabians and Nigerians, there were no significant differences in the type of alcoholic beverages used as majority of the students of all ethnicities prefer weak strength alcoholic beverages like beer (Table 4).

It has been noted in earlier studies that the MAST might show minimal sensitivity when used for determining the level of alcohol related problems in some populations. And that the CAGE might be highly sensitive among the Slavic population (Welcome et al, 2008; Catherine 2004; Gache et al, 2005; Hays et al, 1995; Bohn et al, 1995). This was the rationale for using multiple screening tests in this study. It is probable, that the MAST is less sensitive, compared to the AUDIT and CAGE among the Slavic students' population as seen in the screening results (Table 1 & 2). All three screening tests (AUDIT, CAGE and MAST) showed almost the same results (in regards to the percentage of problem drinkers) among the Arabian and Nigerian students' population (Table 2). Making general conclusion about the sensitivity of the various screening instruments used is rather difficult as a result of the limitations of this study.

**Limitations:** Some respondents with alcohol related problems may have under-reported them in the AUDIT, MAST and CAGE. This might have affected the reliability value of the screening results. Another limitation of this study is that the questionnaire was administered ones and so the reliability indices of the various tests were not assessed. The fewer sample of both the Nigerians and the Arabians (especially the female respondents), compared to the Slavs, could have affected the reliability and significance of the results. This was because a fewer number of Arabians and Nigerians (and especially very few females) study in Minsk (Belarus).

### Conclusion

The level of alcohol use and related problems among the Slavic, Arabian and Nigerian students' population in Minsk, Belarus is high. Significant differences in the pattern of alcohol use exist between students of various ethnic groups (Slavs, Arabians and Nigerians) in Minsk, Belarus. The percentage of Slavic alcohol users (91.08%) was higher, than the Arabians (63.33%) and Nigerians 56.82%. The proportion of problem drinkers on the AUDIT was higher among the Arabs (32.50%) and Nigerians (22.73%), compared to the Slavs (16.28%). The use of weak strength alcoholic beverage (beer) is highest among students of all three ethnic groups. Although among the Slavs, weak strength alcohol (beer) users were slightly higher than the Arabians and Nigerians. There was a slight increase in the percentage of strong strength alcohol users among the Arabs, compared to other ethnicities.

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