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Alcohol Consumption in South African Universities: Prevalence and Factors at the University of Venda, Limpopo Province

Kwabena A. Kyei* and Mpho Ramagoma

Department of Statistics, University of Venda, Private Bag X5050, Thohoyandou 0950 South Africa
**E-mail: Kyei61@gmail.com, Kwabena.kyei@univen.ac.za*

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ABSTRACT Substance abuse is prevalent in South African universities because students use drugs and alcohol for many reasons, including curing depression, imitating role models, getting relief from loneliness and/or self-doubt. There are no reliable data on substance use in South Africa except information from *ad hoc* cross-section research studies, occasional national surveys and information on police arrest seizures. This study reports on a survey conducted at the University of Venda on the use of alcohol on campus. From 209 students interviewed the results show that over 65% use alcohol of which 49% abuse it. Chi-square tests done showed that sex, age, religion, staying on campus, family monthly income and peer pressure were the factors affecting alcohol use, but the logistic regression identified only peer pressure and religion as the main factors. Staying on campus also affects alcohol use marginally.

INTRODUCTION

Alcohol consumption in South Africa is horrifying reaching well over 5 billion litres of alcoholic beverage per year (www.sahealthinfo.org). Roughly two-thirds of the absolute alcohol consumed in South Africa is malt or sorghum beer. The figure could be nearer to 6 billion litres, depending on one estimate of the amount of sorghum beer consumed. In terms of alcoholic beverage this translates to roughly 4.2 billion litres or roughly 90% of the alcoholic beverage (Parry and Bennets 1998). Overuse of drug and alcohol is a serious problem because university authorities are finding it difficult to contain it. According to Young and Klerk (2008), it is probably uncontroversial to state that most university campuses struggle with containing and controlling alcohol consumption by their students, because the age at which students first enter such institutions is an age of freedom and experimentation, where young people have the opportunity to test the limits previously set by parents and schools.

Excess use of alcohol and drugs can cause many diseases such as lung cancer, heart and brain damage. It may also cause social and sexual problems including poor judgment, rape, poverty, debt and a high rate of crime (Parry 2006). Drugs and alcohol can limit a person's ability to make good choices. People addicted to drugs or alcohol may say things that they do not really mean and do things that they normally would not do. They may also lose touch with reality and think that things are better or worse than they really are.

The South African government has tried to come up with some laws concerning alcohol, laws which ban those who are under the age of 18 years from buying alcohol. Cigarettes are no longer allowed to be advertised on television. According to Parry et al. (2005) initiatives have been undertaken that focus on selected populations (for example, pregnant women) and the general public (for example, via increasing taxes on alcohol) to restrict alcohol advertisements, to introduce warning labels on containers, and to institute a coherent liquor outlet policy at provincial level.

In universities, drugs and alcohol abuse are some of the causes that prevent students from attending classes and make them perform poorly academically. The study seeks to determine the intensity and frequency as well as to investigate factors associated with the use and excessive use of alcohol among students of the University of Venda (Univen), Thohoyandou, in the Limpopo province, South Africa and to make some recommendations to "solve" alcohol abuse so as to increase pass rate.

The consumption of alcoholic beverages has a long history in South Africa dating back to

very ancient times (Gumede 1995; Peltzer and Phaswana 1999). During pre-colonial days the consumption of alcohol was the preserve of elders, and other senior or authoritative figures, including health practitioners and traditional healers. The consumption of alcohol was less common among youth and women of childbearing age; they were allowed to take part only when they were engaging in particular rituals and religious ceremonies (Gumede 1995, 2005a). But nowadays alcohol and drugs are commonly practised almost every day (Gumede 2005b). According to Almeida-Filho et al. (2004) alcohol and tobacco are the most commonly consumed substances and "illicit drug" use among students and the intensity of its use is even higher among those who do not live with their family in Brazil.

The use of alcohol is a serious problem in South African universities. Nkhoma and Maforah (1994) conducted a study of drinking patterns among mostly African university students living in a self-catering residence at the University of Cape Town, in the Western Cape Province. They found that 75% of respondents in the sample drank alcohol. Half (50%) of the young men in the sample were moderate or heavy drinkers. Parties were the most popular occasions for drinking, with 60% of drinkers naming parties as places where they drink. About 55% of the respondents drank alcohol during weekends, with a relatively large proportion (26%) reporting drinking throughout the weekend including Friday, Saturday and Sunday (Nkhoma and Maforah 1994).

Historically South Africa has not had very reliable systems in place to facilitate the collection of data relating to substance use. To date, much of the available information has come from *ad hoc* cross-section research studies often conducted in a single location and from information on police arrest seizures and this has been supplemented by occasional national surveys (Parry and Bennets 1998). Apart from the police arrest and seizure data, data which are greatly influenced by factors such as resources available and particular policing policies and initiatives, there has been no longitudinal information available on trend. So far, data available are those on adults per capita annual absolute alcohol consumption dated from 1985 and a single study which compares consumption of absolute alcohol among different populations in 1982 and 1985 (Parry and Bennets 1998). This study therefore fills some of the gap which exists concerning reliable data on alcohol use.

MATERIAL AND METHODS

Data

A survey was conducted on campus at the University of Venda on the use of alcohol. Stratified sampling with proportional allocation according to department and the year of study was done to get the sample. A total of 209 students were interviewed directly using self-administered questionnaires which were distributed to the sampled students. The questionnaire has questions regarding students' attitudes, quality of life and family income. Below are some of the questions which were in the questionnaire:

- Have you ever taken alcohol?
- Have you ever taken drugs?
- Do you practise religion?
- What is your family monthly income?
- Do you stay on campus?
- Would you go for free alcohol and/or drug test?
- Are you taking part in any of the sport activities at school?
- Do your friends take drugs?
- Do your friends take alcohol?
- How often do you take alcohol?
- How often do you use drug?
- Have you ever been drunk?

Method - Data Analysis

Data obtained were analysed using Statistical Package for Social Sciences (SPSS). First chi-square tests were done to find out whether there was any relationship between alcohol use or abuse with eight independent variables.

(1) Dependent variable is alcohol use/abuse
(2) Independent variables
   a. Age
   b. Peer pressure
   c. Sex/gender
   d. Family Income
   e. Marital status
   f. Religion
   g. Staying on campus
   h. Sport activities on campus

Logistic Regression

After the chi-square tests Logistic regression analysis was also done. Logistic regres-

sion is a type of predictive model that can be used when the target variable is a categorical variable with two categories. It is sometimes called the logistic model or logit model and is used for prediction of the probability of occurrence of an event by fitting data to a logit function. Like many forms of regression analysis, it makes use of several predictor variables that may be either numerical or categorical. For example, the probability that a person has a heart attack within a specified time period might be predicted from knowledge of the person's age, sex and body mass index. Logistic regression is used extensively in the medical and social science fields, as well as marketing applications (Hosmer and Lemeshow 2000).

Logistic regression makes no assumption about the distribution of the independent variables. They do not have to be normally distributed, linearly related or of equal variance within each group. The relationship between the predictor and response variables is not a linear function in logistic regression; instead, the logistic regression function is used, which is the logit transformation of q (see equation 1); where a = the constant of the equation and, b = the coefficient of the predictor variables.

$$\text{logit}[\theta(x)] = \log\left[\frac{\theta(x)}{\ldots}\right] = \alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_i x_i \quad \ldots\ldots\ldots(1)$$

$$\theta = \frac{e^{(\alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_i x_i)}}{1+e^{[\alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_i x_i]}} \quad \ldots\ldots\ldots(2)$$

The probability of the observed results given the parameter estimates is known as the *likelihood*. The likelihood is usually a small number hence it is customary to use -2 times the log of the likelihood (that is, -2*LL). The log (-2*LL) is a measure of how well the estimated model fits the likelihood. A good model is one that results in a high likelihood of the observed results. This means that the -2*LL will be a very small number. For a model that fits perfectly, the likelihood is 1 and -2 times the log likelihood (-2*LL) is zero (Hosmer and Lemeshow 2000).

Specifically, the model estimated for alcohol use/abuse is given by

Logit[$\theta(x)$] = β_0- β_1(Peer pressure) – β_2(Practise religion)- β_3(Staying on campus). ……3

Log odd (alcohol)= β_0 – β_1(Peer pressure) - β_2(Practise religion) -β_3(Staying on campus). ……4

Ethical Matters

Ethical consideration was given both in the design of questionnaire and the data collection, and assurance was given to participants that the information given by them would be kept in the strictest confidence. Only volunteers who were willing got involved in completing questionnaires in order to ensure ethical compliance. Although the topic of this study was ethically wrong because it intrudes on students' privacy or rights, the benefits accrued by doing the study, according to Humphrey (1970), Horowitz (2003) and Rainwater (2011), outweigh the harm for not doing the study. They defended ethical matters by saying that if such studies are not done, the cause(s) and solutions cannot be known and the victims will continue to suffer. When studies are done and solutions are prescribed the victims can be redeemed, that is their argument.

RESULTS

Table 1 gives the summary statistics of variables (that is, some background information) considered in this study. The table shows that 209 students completed the questionnaires out of which 99 students were male and 110 were female. The age distribution of the respondents was as follows: aged between 15 and 19 years is 33.0%, aged between 25 and 29 years is 8.6% and aged of 30 years and above is 4.8% and the distribution of the respondents by marital status was as follows: single (83.2), married (4.8%), living together (8.2%), divorced (1.0%) and lived together previously (2.9%). About 72.8% practised religion and only 19.4% did not practise religion. About 51.0% were willing to go for free alcohol and/or drugs test whereas 49.0% were reluctant to go for free test. A majority (62.7%) of the respondents were consuming alcohol as against (37.3%) who were not consuming alcohol.

Tables 2a and 2b give the results from chi-square tests. From the chi-square tests two of the original eight independent variables were dropped because they did not have a significant relationship with alcohol. The variables removed were marital status and sport activities on campus.

Alcohol Use/Abuse and Sex/Gender

Result from Table 1 indicates that there is a strong relationship between sex/gender and alcohol, that is p=0.010. The proportion of males who take alcohol was well over 70%. Male stu-

Table 1: Some background information

Variables	*Frequency*	*Percentage*
Sex		
Female	110	52.6
Male	99	47.4
Age (in years)		
15-19	69	33.0
20-24	112	53.6
25-29	18	8.6
30+	10	4.8
Marital Status		
Married	10	4.8
Single	173	83.2
Divorced	2	1.0
Living together	17	8.2
Lived together previously	6	2.9
Religion		
Yes	150	72.8
No	40	19.4
Sometimes	16	7.8
Free Drugs test		
Yes	101	51.0
No	97	49.0
Family Monthly Income		
Less than R2000	25	12.8
R2100-R5000	39	20.0
R5100-R10 000	73	37.4
Others	58	29.7
Stay on Campus		
Yes	90	43.3
No	117	56.3
Take Alcohol		
Yes	131	62.7
No	78	37.3
Take Drugs		
Yes	72	35.0
No	134	65.0
Total(N)= 209		

dents were therefore more certain to abuse alcohol.

Alcohol Use/Abuse and Age

The relationship between alcohol use/abuse and age is not quite strong, (p=0.080). It is significant only at 10%. While the proportion of students who take alcohol is almost 70% for those aged 20 years and above, the proportion is 48% for the teenage students (less than 20 years).

Alcohol Use/Abuse and Religion

There was a strong significant association between alcohol use and religion, p=0.001. The proportion of students who practise religion and take alcohol is 43.1% while those who do not practise religion but take alcohol are 65.3%. Most religious groups prohibit their adherents/ followers from drinking alcohol, because they believe consuming alcohol may lead them into com-

Table 2a:Determination of relationship using chi-square tests

Variables	*Alcohol users (in %)*	
	Yes	*No*
Sex		
Female	54.5	45.5
Male	71.7	28.3
p-value=0.010		
Age (in years)		
15-19	47.8	52.2
20-24	69.6	30.4
25-29	66.7	33.3
30+	80.0	20.0
p-value=0.080		
Religion Practised		
Yes	43.1	56.9
No	65.3	34.7
Sometimes	75.0	25.0
p-value=0.000		
Stay on Campus		
Yes	73.6	26.4
No	54.7	45.3
	p-value=0.005	
Family Monthly Income		
Less than R2000	36.0	64.0
R2100-R5000	69.2	30.8
R5100-R10 000	61.6	38.4
Others	79.3	20.7
p-value=0.002		
Peer Pressure		
Yes	80.7	19.3
No	39.3	60.7
p-value=0.000		
Sport Activities at School		
Yes	65.9	34.3
No	61.6	38.4
p-value=0.594		
Marital Status		
Married	80.0	20.0
Single	61.3	38.7
Divorced	58.8	41.2
Living together	66.7	33.3
Living together previously	100	0
	p-value=0.599	

Table 2b:Summary of Chi-Square Tests

Variables	*Value*	*df*	*Asymp Sig. (2-sided)*
Pearson Chi-Square	19.205a	5	0.002
Likelihood ratio	20.711	5	0.001
Linear-by-linear association	13.860	1	0.000
N of valid cases	206	551	

Block 0: Beginning Block

Table 3: Classification table[a] - Logistic regression analysis

Observed			*Predicted*		
			Have you ever taken alcohol		*Percentage*
			1 Yes	*2 No*	*correct*
Step 1	Have you ever taken alcohol	1 Yes	126	0	100.0
		2 No	65	0	0
	Overall Percentage			66.0	

a. The cut value is .500
b. Constant is included in the model

Table 4: Summary of variables in the equation of alcohol use/abuse

Variables	*B*	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Constant	-0.662	0.153	18.786	1	0.000	0.516
Step 0						

Table 5: Variables not in the equation of alcohol use/abuse

Variables	*Score*	*df*	*Sig.*
Gender/sex (1)	5.937	1	0.015
Practise religion	9.850	1	0.002
Family monthly income	12.466	3	0.006
Family monthly income(1)	8.390	1	0.004
Family monthly income(2)	0.127	1	0.721
Family monthly income(3)	0.619	1	0.431
Do you stay on campus(1)	7.524	1	0.006
Peer pressure(1)	16.425	1	0.000
Overall Statistics	43.631	7	0.000

Block 1: Method = Enter

Table 6: Omnibus tests of model coefficients – Logistic regression

Variables		*Score*	*df*	*Sig.*
Step 1	Step	46.693	7	0.000
	Block	46.693	7	0.000
	Model	46.693	7	0.000

mitting disgraceful acts such as fighting, adultery, swearing, etc. in public (www. about.com).

Alcohol Use/Abuse and Staying on Campus

The test shows that there is a strong relationship between alcohol and staying on campus, (p=0.005). The proportion of students who stay on campus and drink alcohol is 73.6% as against 54.7% of those who drink alcohol but stay off campus. Comparatively, the figures show that students who stay on campus are more "alcoholic" than those who stay off campus.

Alcohol Use/Abuse and Family Monthly Income

There is a strong significant association between alcohol use and family monthly income, (p=0.002). The proportion of students whose family income exceeds R2000 per month and who take alcohol is over 60% while the proportion of those with income less than R2000 per month is less than 50%. Students whose family monthly income is high (above R2000) take alcohol more than those whose family monthly income is low (less than R2000).

Alcohol Use/Abuse and Peer Pressure

There is a very strong relationship between alcohol use and peer pressure (p=0.000). Students whose friends take alcohol are most likely to take alcohol also. There is an adage that states that birds of the same feathers flock together.

Alcohol Use/Abuse and Sporting Activities

In this instance there is no relationship between alcohol use or abuse and sporting activities, p=0.594. That is, the use of alcohol does not depend on whether or not a student is involved in sports.

Alcohol Use/Abuse and Marital Status

There is no relationship between alcohol use or abuse and marital status, (p=0.599). That is, the use of alcohol does not depend on whether or not a student is married, single, and divorced.

Table 7: Classification table[a] – Logistics regression analysis

Observed			*Predicted*		
			Have you ever taken alcohol		*Percentage*
			1 Yes	*2 No*	*correct*
Step 1	Have you ever taken alcohol	1 Yes	112	14	88.9
		2 No	31	34	52.3
	Overall Percentage				76.4
a.	The cut value is .500				

Table 8: Variables in the equation of alcohol use/abuse

Variables	*B*	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Gender/sex (1)	-0.485	0.359	1.823	1	0.177	0.616
Practise religion	-0.712	0.355	4.4032	1	0.045	0.491
Family monthly income			2.865	3	0.413	
Family monthly income(1)	0.647	0.630	1.056	1	0.304	1.910
Family monthly income(2)	-0.228	0.542	0.176	1	0.674	0.796
Family monthly income(3)	-0.381	0.455	0.699	1	0.403	1.463
Staying on campus(1)	-0.669	0.365	3.366	1	0.067	0.512
Peer pressure(1)	-1.496	0.369	16.425	1	0.000	0.2243
Constant	1.352	0.670	4.074	1	0.044	3.866

Table 9: Model summary – Logistics regression analysis (full)

Step	*-2 Log likelihood*	*Cox and Snell R Square*	*Nagelkerke R square*
1	198.262	0.217	0.300

Table 10: Model summary[b] – Logistic regression analysis (R^2)

Model	*R*	*R Square*	*Adjusted R square*	*Std. error of the estimate*
1	.495[a]	.245	.217	.420

a. Predictors: (Constant), Do your friends use drugs/ alcohol, Marital status, Gender, Do you stay on campus, Do you practise religion, Age (in years), Family monthly income
b. Dependent Variable: Have you ever taken alcohol

Logistic Regression

Concerning the result in the logistic regression, the model was built as follows: the first model in the output (Block 0) is a null model, a model with no predictors. The constant in the Table labelled variables in the equation gives the unconditional log odds of alcohol use/abuse, (that is, alcohol use = 1). The table labelled variables not in the equation (Table 5) gives the results of prediction by the constant only (see more discussion on this topic at http://www.ats.ucla.edu/stat/spss/dae/logit.htm). The column labelled score gives the estimated change in the model fit if the term is added to the model. The other columns give the degrees of freedom and *p-value* (labelled sig.) for the estimated change.

Thus when there was no independent variables [Beginning Block, *Block 0*], in the Tables 3, 4 and 5, the model prediction about 126 students using alcohol was 100% but that of 65 students not taking alcohol was zero, resulting in an estimate of 66% correct in the prediction (Table 3). When the independent variables entered in the model as seen in Tables 6 and 7), [Block 1], out of 112 students predicted by the model as using alcohol, the prediction was 88.9% correct; and for 34 students who did not take alcohol the correct prediction was 52.3%. Thus the model predicted better in the case of those taking alcohol. The overall correct prediction was at 76.4%. Based on these figures, some of the variables/predictors are expected to improve the fit of the model. The improvement in the prediction between Block 0 and Block 1 is 10.4%. Thus the six independent variables (of which indeed only three were predictors) have predicted 10.4%. Table 8 shows that the three variables that predict alcohol use (statistically significant) are peer pressure ($p = 0.000$), practise religion ($p = 0.045$) and staying on campus

Table 11: ANOVA[b]-Model summary of predictors

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
1	Regression	10.525	7	1.504	8.504	.000[a]
	Residual	32.354	183	.177		
	Total	42.880	190			

a. Predictors: (Constant), Do your friends use drugs/alcohol, Marital status, Gender, Do you stay on campus, Do you practise religion, Age (in years), Family monthly income
b. Dependent Variable: Have you ever taken alcohol

Table 12: Coefficients[a]-Model Summary from multiple regression

		Unstandardized coefficients		*Standardized coefficients*		
Model		B	Std. error	Beta	*t*	*Sig*
1	(Constant)	.806	.240		3.357	.001
	Do you stay on campus	.120	.063	.126	1.893	.060
	Gender	.073	.063	.077	1.150	.251
	Age (in years)	-.107	.043	-.176	-2.526	.012
	Marital status	.070	.041	.117	1.706	.090
	Do you practise religion	-.093	.052	-.123	-1.780	.077
	Family monthly income	-.016	.034	-.034	-.483	.630
	Do your friends use drugs/alcohol	.322	.067	.334	4.765	.000

Univariate Analysis of Variance

Table 13a: Tests of between-subjects effects on alcohol

Dependent Variable: Have you ever taken alcohol

Source	*Type III sum of squares*	*df*	*Mean square*	*F*	*Sig.*
Corrected model	10.525[a]	7	1.504	8.504	.000
Intercept	1.992	1	1.992	11.267	.001
Do you stay on campus	.634	1	.634	3.584	.060
Practise religion	.560	1	.560	3.169	.077
Gender	.234	1	.234	1.324	.251
Age	1.128	1	1.128	6.381	.012
Marital status	.514	1	.514	2.910	.090
Family monthly income	.041	1	.041	.233	.630
Do your friends use drugs or alcohol	4.014	1	4.014	22.705	.000
Error	32.354	183	.177		
Total	386.000	191			
Corrected total	42.880	190			

a. R Squared = .245 (Adjusted R Squared = .217) OLS Regression

Table 13b: Regression coefficients[a]- Effects otalcohol

	Model	*Unstandardized coefficients*		*Standardized coefficients*		
		B	*Std. error*	*Beta*	*T*	*Sig.*
1	(Constant)	.806	.240		3.357	.001
	Gender	.073	.063	.077	1.150	.251
	Age (in years)	-.107	.043	-.176	-2.526	.012
	Marital status	.070	.041	.117	1.706	.090
	Do you practise religion	-.093	.052	-.123	-1.780	.077
	Family monthly income	-.016	.034	-.034	-.483	.630
	Do you stay on campus	.120	.063	.126	1.893	.060
	Do your friends use drugs/alcohol	.322	.067	.334	4.765	.000

a. Dependent Variable: Have you ever taken alcohol Regression

Table 13c: Variables entered/removed[b]

Model	*Variables entered*	*Variables removed*	*Method*
1	Do your friends use drugs/alcohol, Marital status, Gender, Do you stay on campus, Do you practise religion, Age (in years), Family monthly income	.	Enter

a. All requested variables entered.
b. Dependent Variable: Have you ever taken alcohol

(*p = 0.067*) which is marginally significant, though. The logistic regression coefficients give the change in the log odds of the outcome for a one unit increase in the predictor variable. Thus for example, for every unit change in peer pressure the log odds of use of alcohol changes by 1.496 and for every unit change in practise religion the log odds changes by 0.712.

DISCUSSION

Analysis from cross- tabulations displayed a relationship between alcohol use and age, religion, family monthly income, sex/gender and staying on campus (see the summary of chi-square tests in Table 3). Older students (30 years and more) are more likely to take alcohol than teenagers because they can afford and the society does not abhor that. Rather, the society condemns drinking among teenagers. But in 2005, according to Centre for Science in the Public Interest (CSPI), in the United States, 28.2% of colleges students aged 12 – 20 years were reported to have drunk alcohol the preceding month of the survey (www.cspinet.org/booze). More males (28.9%) than females (27.5%) aged 12 – 20 years were current alcohol drinkers according to the report; and 48% drinkers reported that "drinking to get drunk" (that is abuse) is an important reason for drinking (www.cspinet.org/booze). This figure almost tallies with our results where 49% were found to abuse it.

Religious adherents do not drink alcohol as much as those who do not practise religion do, because most religious groups prohibit their followers or adherents from drinking alcohol for the simple reason that consuming alcohol may lead them into committing disgraceful acts, such as fighting, swearing, adultery, etc. in public. A study conducted in two major private universities (A and F) in Lebanon with religious distributions of 64.1% Christians, 31.3% Moslems, and 4.5% Druze in University A; and 57.6% Christians, 37.5% Moslems, and 4.9% Druze, in Universities F, showed that belief in God and practice of faith were protective instruments against substance abuse (www.medscape.com).

Staying on campus affords students freedom from interference from parents or older people and therefore induces them to drink (http://www.about.com). The CSPI's report continues that young students aged 18 – 22 years enrolled full-time in college were more likely to use alcohol in the past month than their peers not enrolled full-time.

The most predictive factor which has also been confirmed by both logistic and ordinary least squares regression analyses are peers, religion and staying on campus. When friends drink, students follow suit to drink also. Some of the students start their first year innocently with no intention of taking alcohol, but as they get along with friends they get some bad influence from friends and they also start drinking alcohol. Freedom associated with staying on campus and being away from parent could lead young students to indulge in negative tendencies.

In the United States, it is reported that about 47.2% of students used marijuana, a figure which includes 27% who had used marijuana during their lifetime (Rostosky et al. 2007). Among students who reported having a religion, alcohol consumption was 83.1%, tobacco use 20.7%, and "illicit drugs" 24.6% during that period. Among students who reported not having a religion, the use of alcohol was higher in the last 12 months at (89.3%), and "illicit drugs" (37.7%) (Silva et al. 2006); implying that religion reduces the level of alcohol consumption by 6.2 percentage-points. A high percentage of the students reported having family members with drinking or drug problems (42%). About 45% of the students reported coming from families that seldom did things together and the same percentage reported that their parents were mostly unaware of where they were or what they were doing. When asked who had first introduced them to alcohol, 58% reported their friends did, 25% said their siblings did and 19% said that their parents did (Tibbs 1996).

In short, the results above indicate that the explanatory variables of alcohol use or abuse are peer pressure and practice of religion at 5% significant level; and staying on campus at 10%.

Mathematically, the model equation is given by

Log odd (***Use of alcohol)*** = $\beta_0 - \beta_1$(Peer pressure) - β_2(Practise religion) -β_3 (Staying on campus).

That is

Log odd (Use of alcohol) = 1.352 - 1.496Peer pressure - 0.712Practise religion - 0.669Staying on campus. ……. 5

which implies that

Odd ratio *(Alcohol use)* = 3.866 +0.2243Peer pressure + 0.491Practise religion + 0.512Staying on campus. 6

In South African universities many students abuse alcohol because of association with friends and colleagues who are addicted to such. Students take alcohol for various reasons including physical, mental, psychological and social. For example, some take it for pleasure, some take it because they are depressed and some take it to gain mental and physical strength (Medical Research Council 2009). Some take it for social reasons, to celebrate occasion, some for group identification and pleasure seeking, for imitating role models and some take it to get relief from loneliness and self-doubt [South African Community Epidemiology Network on Drug Use, (SACENDU) 2006].

Most recently, concern has been expressed at the rapid increase in alcohol use and abuse in the "Third World" countries. The 'new' patterns of alcohol and drug misuse in this country are said to be qualitatively different from the traditional 'integrated' drinking patterns, in which highly ritualized and ceremonial drinking used to take place in a context of positive societal meaning, which was clearly controlled and mainly restricted to adults. Nowadays young people drink alcohol almost every day and they often begin to experiment with alcohol, tobacco and other drugs during the school year (Gumede 2005b). Young people from all over the world; communities, schools and universities get involved in various legal and illegal substances (SACENDU 2004, 2006).

The Likelihood-Ratio Test (-2 Log likelihood) is to test the significance of the model with reference to independent and dependent variables (Hosmer and Lemeshow 2000; http://www.ats.ucla.edu/stat/spss/dae/logit.htm). The Likelihood-Ratio test here gave R as 49.5%; and Cox and Snell R Square of 22% and Nagelkerke R Square of 30% (Table 10; Table 9 respectively).

Ordinary Least Square Regression

Because the categorical variables (including the dependent variables) were coded 0 and 1, multiple regression (OLS) and General Linear Modeling (ANOVA) were also done as a further confirmation (for more discussion on this, see http://www.ats.ucla.edu/stat/spss/dae/logit.htm).

The results from these general linear model and regression analyses seen in Table 11; Table 12; Table 13a; Table 13b and Table 13c), confirm that indeed peer pressure is the most important predictor of alcohol use. Staying on campus, practise religion and marital status predict marginally. Age however also predicts the use of alcohol from this analysis. The model from this analysis is as follows:

Alcohol Use/Abuse = 0.806 +0.322Peer pressure – 0.107Age - 0.093Practise religion + 0.12Staying on campus +0.07Marital status.....7 (unstandardized).

Alcohol Use/Abuse = 0.334Peer pressure – 0.176Age - 0.123Practise religion + 0.126Staying on campus +0.117Marital status. .....….8. (standardized).

CONCLUSION

Though the sample size is not large enough, the sample design (stratified random sampling) permits us to generalize the findings. The study has found out that a high proportion of students (interviewed at the University of Venda), 65% use alcohol, of which 49% abuse it. In Egypt among 687 university students interviewed in a survey, 14.4% had ever taken alcohol, students mostly aged 19 years and over. In Brazil, 23.8% of undergraduate students abused drugs. The study has also shown that the most predictive factors from the chi-square tests which have also been confirmed by regression analyses are peer pressure (friends using alcohol), practise religion and staying on campus. The multiple, general linear model (ANOVA) and logistic regression analyses, all confirm that peer pressure is the most predictive of all the variables considered in this study. Unfortunately, however, the model is only able to predict the use of alcohol to at most 30% because the Likelihood-Ratio Test mentioned earlier gave Cox and Snell R

Square of 22% and Nagelkerke R Square of 30%. These values mean that the model does not perfectly predict the use or abuse of alcohol. There are more other factors (about 70 %) that predict the use of alcohol among students, besides peer pressure, religion and staying on campus, therefore further research needs to be done to find out.

RECOMMENDATIONS

The paper wants to recommend the following:

- that students, especially new or freshmen be careful of the type of friends they make since 'bad' friends can influence them negatively;
- that parents advise and encourage their children to practise religion as a protective measure from bad influence; and
- that parent pay regular visits to their children in hostels especially during week-ends as a means to check on them from "bad weakend habits."

NOTES

Alcohol-users are those respondents who confess to taking alcohol, sometimes get drunk but are willing to go for free alcohol/drug test.

Alcohol abusers are those who take alcohol and who are against going for free alcohol/drug test.

Peer pressure implies those whose friends already drink/ use alcohol.

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