Prevalence of Alcoholism and Related Problems in Medical and Paramedical Students Measured Using Shorter Version of Alcohol Use Disorder Identification Test (AUDIT)

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ABSTRACT

Introduction: Alcohol consumption is a growing public health problem. Medical and para-medical professionals are seen as role models in society. However, alcohol consumption is also becoming a matter of concern among healthcare students as well.

Aim: To determine the prevalence of students who consumed alcohol and identifying those with alcohol disorders using short version of Alcohol Use Disorder Identification Test (AUDIT).

Materials and Methods: A Cross-sectional questionnaire study was conducted in a Deemed Private University in Southern part of India. Data on alcohol consumption was collected from 405 medical, dental and nursing students using shorter five item version of AUDIT. Data on other variables like gender, age, place of current residence, religion, specialty and year of study was collected using closed ended questionnaire. Frequency distribution for proportions and Logistic regression analysis was done to determine the influence of predictor variable on outcome variable.

Results: Overall Prevalence of alcohol use was found to be 79.5 percent. Among these 56.5 percent were found having alcohol related problems. Males reported higher problems than females. Logistic regression revealed gender {odd's ratio: 1.015; (p=0.03)} and year of study {odd's ratio: 0.743 (p=0.02)} to be influencing alcohol related problems.

Conclusion: Prevalence of alcohol consumption and those with related problems was found to be more than 50 percent (both males and females). There is a need to draft and implement policies by university which utilizes existing resources to prevent the increasing proportion of students consuming alcohol, with associated problems.

Keywords: Alcoholism, Binge drinking, Counselling, Logistic models, Peer group

INTRODUCTION

Alcohol consumption has been part of human history since antiquity. Alcoholic beverages have been a part of social life for millennia, yet societies have always found it difficult to understand or restrain their use. The World Health Organization (WHO) estimates that worldwide total consumption was equal to 6.2 liters of pure alcohol per person in 15 years resulting in 3.3 million deaths worldwide and there is clearly no single reason why they do or why different people drink to different extents [1]. Evidence suggests that alcohol consumption is associated with risky behaviour which results in higher morbidity and mortality, unless effective interventions and policies are implemented to reduce these habits [2-5].

Students are more vulnerable due to various reasons like, peer group influence, increased academic pressure, increased popularity and easy availability of alcohol [6]. A WHO report claims that students in later life will hold important status in society as ambassadors promoting healthy lifestyles [1]. Public health concern about alcohol consumption and associated risk behaviours in young people is increasing, especially among college students who, in some countries, appear to be at particularly high risk. Indeed, the leading cause of injury and death among college students and young adults in the USA is reported to be binge drinking [7].

AUDIT has been used by a number of researchers to screen different population for alcohol related problems [8-11]. To use this among healthcare professionals is a relatively rare scenario. Prevalence of alcohol consumption and alcohol dependency is steadily rising which has a negative impact on their health, academic performance and future professional capabilities [12]. A short, valid and reliable instrument which can screen and also detect alcohol related problems in a primary setting would be a beneficial asset.

The present study was conducted to determine the prevalence of alcohol consumption and alcohol related problems among students of dental, nursing and medical colleges of a private deemed university using short version of AUDIT.

MATERIALS AND METHODS

A cross-sectional questionnaire study was conducted among students of a private deemed university in Southern India having three healthcare related specialties (dental, nursing and medical). The study was conducted in the month of June 2015 and permission to conduct the study was obtained from Deans' of all the three institutes. The ethical clearance was obtained from institutional ethical board.

The sample size calculated was based on the prevalence rates of 45.87% [7], precision of 1.96, alpha error of 0.05 and with an anticipated error of 5%. The sample size calculated was 399 (for all three colleges). The sample size was to be selected from the target population of about 1750 students of all the years (I, II, III, IV, and Interns) of dental, medical and nursing colleges. A total of 133 study participants were selected from each institution (133-from dental; 133-from medical and 133-from nursing college). This stratified our sample size to 27 to be sampled from each academic year and interns from each college. Study participants were selected systematically to reduce any selection bias. This increased our sample size to 405 study participants. After permission was obtained from the deans' of respective disciplines, specific dates were fixed to conduct the study in each institute across all years. The data collection was done over a period of 6 working days. The questionnaire was distributed to the study participants after their lecture classes and was requested to provide their responses in

the presence of a faculty who was not related to the study. The time allotted was 10 minutes and participants were assured of confidentiality and anonymity. Two full working days was allotted for each institution.

The data collected was in response to closed-ended questionnaire with 5 items with responses on a Likert scale. The questionnaire was originally, The AUDIT given by World Health Organization and used by Babor TF et al., [13]. Piccinelli M et al., made an attempt to investigate the screening properties of alcohol use disorders identification test [14]. The present questionnaire consisted of 5 items taken from original 10-item AUDIT questionnaire which gives reasonable accuracy, and are recommended as questions of choice to screen patients for alcohol problems [13,14]. The Questionnaire covered items related to 'frequency of alcohol consumption', 'number of drinks consumed in a typical day', 'ability to control drinking', 'failure to carry out expected tasks as consequence of the effects of alcohol and 'whether others are concerned about the individual's drinking'. The first item was also used as a screening tool to identify those consuming alcohol. The responses obtained were on a Likert scale ranging from 0 to 4. Each item had a different response for each score except for item 3 and item 4. The scores obtained were summed up to obtain an overall score for each respondent. An overall score of 5 or more (≥ 5) indicated that there may be an alcohol problem, and indicated for a more comprehensive evaluation. Therefore, for statistical analysis the dependent variable was dichotomized as 0 – without alcohol problem (scores < 5) and 1 – probable alcohol problem (consumer at risk, harmful consumption) (scores ≥ 5). Gender, place of residence, religion, specialty and year of study were the independent variables. Place of residence was dichotomized as those staying with parents and those staying away from parents.

STATISTICAL ANALYSIS

The data obtained was entered in Microsoft excel sheet (Windows 8.1, Microsoft Corporation) and analysed using Statistical Package for Social Sciences (SPSS version 15.0), (SPSS Corp, Chicago, IL, USA) for descriptive analyses and Multiple Logistic regression to determine the influence of independent variable on outcome variable. The coefficient of reliability was determined using Cronbach's alpha. The level of significance was set at 0.05.

RESULTS

The response rate was 100 percent. The mean age was 21 years (21.1±1.4) with more males than females. Consumption of alcohol was observed among 79.5 percent of study participants [322/405]. Among these, more than 70 percent were staying away from parents [staying alone+with roommates] and majority were Hindus [Table/Fig-1].

Among those consuming alcohol 56.5 percent [182/322] reportedly had alcohol related problems. Dental students and those belonging to Hindu were more in proportion [44.5 percent; 81/182 and 40.1 percent 73/182 respectively] [Table/Fig-2].

Multiple regression analysis of the variables revealed no statistically significant influence of independent variables over the alcohol addiction. However, III years students of all the specialties were less likely to be influenced by alcohol, when compared to their peers under years of study {odd's ratio: 0.743; CI: 0.22-0.879 (p=0.02)} [Table/Fig-3]. Males were more likely to be having alcohol related problems than females {odd's ratio: 1.015; CI: 1.23-3.45 (p=0.03)}. The reliability analysis showed a Cronbach's alpha of 0.65 for 5-item scale in the present study. The responses to individual item of questionnaire are presented in [Table/Fig-4].

DISCUSSION

The present study revealed that alcohol consumption was reported by 79.5 percent (322/405) of the participants, with 56 percent

Mean age with SD	21.1±1.42 Years
Total number of Participants	405
Alcohol Consumption reported among total participants	(%) N
	322/405, (79.5)
Gender (n=322)	
Males	84.4 (272)
Females	15.5 (50)
Place of Residence (n=322)	
Stay alone	19.8 (64)
With roommate	54.3 (175)
with parents	25.7 (83)
Religion (n=322)	
Hindu	47.8 (154)
Muslim	18 (58)
Christian	31.1 (100)
Others	3.1 (10)
Specialty (n=322)	
Medical	37.3 (120)
Dental	39.1 (126)
Nursing	23.6 (76)
Year (n=322)	
I	10.2 (33)
II	17.7 (57)
III	28.5 (92)
IV	23.2 (75)
Intern	20.1 (65)
Alcohol related problems (n=322)	
No	43.4 (140)
Yes	56.5 (182)

[Table/Fig-1]: Distribution of participants according to predictor variables.
n: Frequency; %: Percentage, SD: Standard deviation

Variable		% (N)
Gender	Males	84.6 (154)
	Females	15.3 (28)
Place of Residence	away from parents (hostel / alone)	75.8 (138)
	with parents	24.1 (44)
Religion	Hindu	44.5 (81)
	Muslim	19.2 (35)
	Christian	33.5 (61)
	Others	2.7 (5)
Specialty	Medical	35.1 (64)
	Dental	40.1 (73)
	Nursing	24.7 (45)
Year of Study	I	8.8 (16)
	II	18.7 (34)
	III	23.1 (42)
	IV	26.4 (48)
	Interns	23.1 (42)

[Table/Fig-2]: Distribution of participants with alcohol related problems.

(182/322) having alcohol related problem (consumer at risk, harmful consumption), indicating further evaluation of the high risk group. The results are comparable with findings reported in literature from an Indian perspective [6,15-17]. Worldwide, usage of AUDIT among healthcare professionals is relatively uncommon. A prevalence of 76.1 percent was reported in Italy (AUDIT C), 57.1 percent among Brazilian nursing students (AUDIT) and 39.1 percent among medical

		Odd's Ratio	Confidence Interval	p-value
Gender	Male	1.015	1.23-3.45	0.03*
	Female[1]			
Place of Residence	Away from home[1]			
	with Parents	1.090	0.644-1.84	NS
Religion	Hindus[1]			
	Muslims	0.510	0.316-4.569	NS
	Christians	0.787	0.400-6.55	NS
	Others	0.394	0.464-7.024	NS
Year of study	I Year[1]			
	II Year	0.479	0.196-1.17	NS
	III Year	0.743	0.225-0.879	0.02*
	IV Year	0.445	0.343-1.61	NS
	Interns	0.940	0.452-1.95	NS
Specialty	Medical[1] Dental Nursing	0.957 0.975	0.42-13.4 0.053-16.13	NS NS
Constant		1.400		0.836

[Table/Fig-3]: Logistic Regression model of predictor variables on participants reporting with alcohol related problems.
R2=0.53, p<0.05, NS=Not significant
1-Reference Category

Consumption of drink containing Alcohol	
No	20.5 (83)
Yes	79.5 (322)
Monthly	46.1 (187)
2-4 times a week	30.1 (122)
2-3 times a week	1.97 (8)
4 or more times a week	1.23 (5)
Number of drinks with alcohol on a day when you are drinking	
1 or 2	27 (87)
3 or 4	40.9 (132)
5 or 6	24.8 (80)
7 to 9	5.6 (18)
10 or more	1.5 (5)
Unable to stop drinking once started	
Never	37.2 (120)
< Monthly	41.9 (135)
Monthly	13.6 (44)
Weekly	6.5 (21)
Daily or almost daily	0.62 (2)
Failed to do what was normally expected of you due to drinking	
Never	29.2 (94)
< monthly	56.5 (182)
Monthly	10.5 (34)
Weekly	3.1 (10)
Daily or almost daily	0.62 (2)
Friend, doctor or health worker suggested to cut down drinking	
No	52.1 (168)
Yes, but not in the past year	47.8 (154)

[Table/Fig-4]: Responses to individual items of questionnaire.
% (N) – percentage (Number)

students of Columbia (AUDIT) reported to be problematic drinkers [18-20]. We believe that the difference observed in prevalence may be due to differences in the exposure rate and time of associated risk factors in different geographical locations. Different geographic locations have different cultures and AUDIT is a valid instrument to detect problem drinkers in different cultures. However, definition and instrument used to define alcohol use, age group studied,

methodology adopted and urban-rural difference also may be responsible for varied observation [11]. Lamberti M et al., utilized AUDIT C (consisting of only first three question of AUDIT 10) to categorise problematic drinkers [18]. In the present study we utilised shorter version (of AUDIT 10) with 5 items, the additional two items being, "failure to carry out expected tasks as a consequence of the effects of alcohol" and "whether others are concerned about the individual's drinking". In the present study, we found that 14.2 percent had failed to do what was expected of them due to their drinking problem on monthly, weekly and daily basis and about 47.8 percent of the participants reported they had been requested either by a colleague, friend or relative to cut down on alcohol intake. Any increase in these individual responses might indicate the magnitude of the problem. We believe these additional questions helps in revealing drinking issues in circumstances where alcohol problems are not suspected. In addition, it makes the participant aware that excess consumption of alcohol has begun to affect consumer's day to day activities which are noticeable by others. At times drinking habits are often hidden, even from other family members and these additional two items might create a sense of self-awareness regarding one's consumption of alcohol. In addition, only 37.2 percent could restrain themselves from drinking more after having a drink with alcohol. This item could point towards a greater dependency on alcohol by the study participants.

College students do represent a segment of society have higher prevalence of alcohol drinking, than non-college youth [21-23]. This could be attributed to the well-established developmental phase college students go through, in which students are far from family, house and friends [7]. Nevertheless, in the present study setting, among those who reported alcohol related problems, participants staying away from parents were higher in proportion. It was also found that, place of residence, religion and specialty had no influence over alcohol dependency [17].

Logistic regression of predictor variable identified gender and year of study as influencing AUDIT scores. Males were more likely to be at risk of alcohol related problems than females. Literature does point out that alcohol use is more among male gender [12,23-25]. The growing consumption of alcohol among females is also evident from literature [12,17]. The present study only reinforces the already prevalent figures. Another interesting finding of the study with respect to alcohol addiction was found among participants who were in third year of their course. It was statistically found that third year students were 26 percent less likely to have alcohol related problems when compared to their peers. An increase in the number of participants with alcohol related problems was observed from third years to final years of their courses. Even though not statistically significant, it was found that final years were 56 percent less likely to have alcohol related problems. Based on the variables of the present study, we can attribute this finding to their sense of responsibility which they acquire over a period of two years. By the time students are in third year, students establish a sense of control and preside over their academic and personal activities with caution.

LIMITATION

The questionnaire used in the present study to assess alcohol dependency is a part of AUDIT, with first item focusing on those consuming alcohol. The coefficient of reliability was found to be 0.65 in the present study setting indicating acceptable internal consistency. From a statistical point of view, this could explicitly mean that more relevant items need to be added which can increase alpha to good and/or excellent levels which demand further research. This finding is a short limitation, and therefore usage of this short version of AUDIT for further assessment in alcohol dependency need to be done with extreme caution unless otherwise validated with newer items which increases its value. The results cannot be generalised since the target population belonged to students of a

deemed private university. In addition, the reason for difference in the prevalence of alcohol consumption amongst various groups was not explored. Nevertheless, further studies are recommended taking into consideration other variables to strengthen its reliability and validity.

CONCLUSION

The findings of the present study indicate a growing concern of alcohol consumption among medical, dental and nursing students. This information needs to be taken seriously by the concerned authorities and measures be initiated to draft policies which has to be implemented for the college students compulsorily. Faculties of the same universities with sufficient and relevant qualification can play an important role in counseling students for the same. We recommend incorporation of health promotion targeting those addicted to alcohol with a high risk approach strategy.

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