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Study the Independent Association of the Socio-demographic Determinants with Alcohol Use Among Medical Students

* Dr Rashmi Katyal	(Asst.Professor) Department of Com.Med .(Rohilkhand Medical College; Bareilly;U.P.,India). * Corresponding Author.
Dr Varsha Chaudhary	(Asso. Professor) Department of Com.Med.(Rohilkhand Medical College; Bareilly;U.P.,India)
Dr Shailendra Pratap Singh	(Asst. Professor) Department of Com.Med.(Rohilkhand Medical College; Bareilly;U.P.,India)
Dr. Hari Shankar Joshi	(Prof and head) Deptt. Of Com.Med. (Rohilkhand Medical College; Bareilly;U.P.,India)
Dr Deepak Upadhyay	(Asst.Professor)Department of Com.Med.(Rohilkhand Medical College; Bareilly;U.P.,India)
Dr. Arun Singh	(Professor) Department of Com.Med.(Rohilkhand Medical College; Bareilly;U.P.,India)

ABSTRACT

Introduction: *There is growing concern in the medical community about physicians impaired by chemical dependency. While medical students and physicians may help patients resolve substance dependency, they are not immune to these temptations themselves.*

Objective: *The aim of the study was to find out the prevalence of alcohol use among the undergraduates of Rohilkhand Medical College , Bareilly and the factors affecting its use.*

Methodology*: This cross- sectional study was conducted among the undergraduates of Rohilkhand Medical College, Bareilly using the WHO questionnaire (AUDIT).*

Data was entered, coded, recoded, and analysed using SPSS (Statistical Package for Social Sciences) and suitable statistical tests were applied along with logistic regression to know the independent association of the factors of alcohol use.

Results*: There was significant association between drinking status and family history of alcohol use, occupation of father and mother which stood out independently on the application of logistic regression while the type of family which was not found to be associated with alcohol use showed association on application of logistic regression.*

Conclusion*: The study findings suggest that there is a need of stringent interventional measures and counseling in order to refrain the students from developing the habit of addiction.*

KEYWORDS : WHO, AUDIT, alcohol use

Introduction:

Drinking behaviours among medical students have important implications for the health of the general population. Firstly, physicians and future physicians are important opinion leaders and role models in terms of health related behaviours. Secondly, medical students' own drinking behaviours might shape their beliefs about levels of consumption that are normal or safe, particularly in the absence of specific knowledge about evidence based drinking guidelines. Finally, the drinking behaviours of medical students might influence their attitudes and comfort about counseling those who drink excessively; there is a strong and consistent relation between physicians' personal health practices and their counselling practices, including

their practices around alcohol. [1] Heavy alcohol intake amongst the student population has implications for the individual, educational institutions, and wider society [2-4]. Students have been reported to drink at higher levels than non-student peers [5-9], making this an issue of public health concern given the negative social and health consequences of heavy intake [10]

and the link with other unhealthy behaviours (e.g. cigarette smoking [11] and recreational drug use [12]).Across the world it has been reported that university students' levels of alcohol consumption are higher than that of their non-university peers.[13,14]

The consumption pattern varies between cultures and societies. Alcohol is a underline cause of 3.2% of total deaths and 4% of the total loss of DALY irrespective of societies and occupation[15].Attitudes and practices of physicians and future physicians towards alcohol and substance abuse is a topic of significant importance and deserved to be examined. Their views will determine the extent of their involvement in the management programs for this serious problem, detrimental to the health of the community. Understanding any association between medical students' alcohol counseling habits and their drinking patterns and educational experiences could help increase screening and brief counseling interventions among healthcare providers.

Aim and objectives:

The aim of the study was to find out the prevalence of alcohol use among the undergraduates of Rohilkhand Medical College , Bareilly and the factors affecting its use.

Methodology:

A cross-sectional type of epidemiological study was conducted among the medical students of Rohilkhand Medical College , Bareilly, U.P. in which all the students present at the time of study were included . The research ethics committee provided ethical approval. Data

was collected using WHO questionnaire (AUDIT: Alcohol use disorder identification test)[71] as the study tool.

Additional information was obtained on the socio-demographic and other determinants of alcohol use.

The AUDIT is a 10-question alcohol screening instrument developed by W.H.O. and validated in six-country sample from four industrialized and two developing countries. Questions included in the instrument showed reliability across a wide range of cultural settings. The AUDIT has been shown to be highly sensitive (80%) and specific (89%) screening instrument.

Students were provided with self-administered questionnaires to complete during the last 10 minutes of lectures that they were attending. Participation was voluntary and anonymous, no monetary or course credit incentives were provided to participants, and data were confidential and protected. Students were informed that by completing the questionnaire, they agreed to take part in the study. . The students were assured about anonymity and confidentiality of the responses given in the questionnaire and instructed to return the completed questionnaire.

The results were analyzed using the Statistical Package for the Social Sciences 12.0. Data was coded, entered and analyzed using the Statistical Package for Social Sciences (SPSS). A descriptive analysis was done to summarize information. Chi-square test was used to test significance between variables. Logistic regression models were conducted, drinking status was taken as dependent variable separately, and independent variables (such as religion, mother's occupation, etc.) were fit in the model simultaneously. A p-value less than 0.05 was considered statistically significant.

Observations:

Table : 1 Association of socio-demographic factors with the drinking status

	Drinking status		
Residence area	Teetotalers	Drinkers	Total
Urban	130(69.9%)	56(30.1%)	186(100%)
Rural	21(61.8%)	13(38.2%	34(100%)
Total	151(68.6%)	69(31.4%)	220(100.0%)
χ^2value=0.882; df=1; p-value=0.348			
Religion			
Hindu	124(67.8%)	59 (32.2%)	183(100.0%)
Muslim	18(78.3%)	5(21.7)%	23(100.0%)
Others	9(64.3%)	5(35.7)%	14(100.0%)
Total	151(100.0%)	69(100.0%)	220(100.0%)
χ^2value=1.178; df=2; p-value=0.555			
Caste			
General	119(70.0%)	51 (30.0%)	170(100.0%)
S.C./S.T.	2(100%)	0(0)%	2(100.0%)
O.B.C.	30(62.5%)	18(37.5)%	48(100.0%)
Total	151(68.6%)	69(31.4%)	220(100.0%)
χ^2value=1.900; df=2; p-value=0.387			
Type of family			
Nuclear	106(71.6%)	42 (28.4%)	148(100.0%)
Joint	45(62.5%)	27(37.5%)	72(100.0%)
Total	151(68.6%)	69(31.4%)	220(100.0%)
χ^2value=1.872; df=1; p-value=0.171			
Family Size	Teetotalers	Drinkers	Total
3	17(81.0%)	4(19.0%)	21(100.0%)
4	65(63.7%)	37(36.3%)	102(100.0%)
5	26(74.3%)	9(25.7%)	35(100.0%)
6	13(61.9%)	8(38.1%)	21(100.0%)
7	8(88.9%)	1(11.1%)	9(100.0%)
8	10(66.7%)	5(33.3%)	15(100.0%)
9	5(83.3%)	1(16.7%)	6(100.0%)
10	6(66.7%)	3(33.3%)	9(100.0%)
12	1(50.0%)	1(50.0%)	2(100.0%)
Total	151(68.6%)	69(31.4%)	220(100.0%)
χ^2value=7.099; df=10; p-value=0.716			

Table : 2 Association of Parent's occupation with the drinking status

	Drinking status		
Mother's occupation	Teetotalers	Drinkers	Total
Housewife	112(91.1%)	11(8.9%)	123(100.0%)
Working	39(40.2%)	58(59.8%)	97(100.0%)
Total	151(68.6%)	69(31.4%)	220(100.0%)
χ^2value=65.143; df=1; p-value=0.000			
Father's occupation			
Business	72(66.7%)	36(33.3%)	108(100.0%)
Private	32(62.7%)	19(37.3%)	51(100.0%)
Govt. Job	47(77.0%)	14(23.0%)	61(100.0%)
Total	151(68.6%)	69(31.4%)	220(100.0%)
χ^2value=3.022; df=2; p-value=0.221			

Table : 3 Association of Family History of alcohol use with the drinking status

	Drinking status		
Family History of alcohol use	Teetotalers	Drinkers	Total
Yes	115(72.5%)	38(24.8%)	153(100.0%)
No	36(53.7%)	31(46.3%)	67(100.0%)
Total	151(68.6%)	69(31.4%)	220(100.0%)

Chi –square value=9.942; df=1; p-value=0.002

Table 4: Predictors of alcohol use among the medical students: A Multivariate Logistic Regression Analysis

Variables	B-coefficient	Odd's Ratio*	p-value	Confidence Interval	
Residence area					
Urban	0.530	1.699	0.368	0.536	5.388
Rural	Reference	-	-	-	-
Semester					
First	1.353	3.869	0.123	0.694	21.567
Third	0.913	2.491	0.290	0.459	13.531
Fifth	1.122	3.071	0.178	0.600	15.734
Seventh	-0.757	0.469	0.378	0.087	2.520
Ninth	Reference	-	-	-	-
Family History of alcohol use					
Yes	1.427	4.166	.008**	1.449	11.973
No	Reference	-	-	-	-
Religion					
Hindu	-1.054	.348	.208	0.068	1.796
Muslim	0.517	1.678	.667	0.159	17.666
Others	Reference	-	-	-	-
Caste					
General	1.001	2.720	0.089	0.860	8.607
S.C./S.T.	16.600	16185315.913	-	16185315.913	16185315.913
O.B.C.	Reference	-	-	-	-
Type of family					
Nuclear	1.207	3.345	.042**	1.047	10.684
Joint	Reference	-	-	-	-
Family Size					
1	0.026	1.026	0.991	0.015	68.837
2	-1.457	0.233	0.470	0.004	12.171
3	-0.626	0.535	0.761	0.010	30.075
4	-0.025	0.975	0.990	0.016	59.178
5	0.497	1.643	0.830	0.018	153.116
6	1.025	2.788	0.634	0.041	190.789
7	-0.232	0.793	0.940	0.002	317.575
12	-0.456	0.634	0.834	0.009	45.303
	Reference	-	-	-	-
Mother's occupation					
Housewife	3.969	52.946	.000***	16.862	166.246
Working	Reference	-	-	-	-
Father's occupation					
Business	-2.066	0.127	0.000***	0.040	0.398
Private	-2.220	0.109	0.000	0.032	0.365
Govt. Job	Reference	-	-	-	-

* Adjusted for all other variables, **p-value<0.05, ***p-value<0.001.

Results:

This study highlights that being rural or urban does not have significant influence on the drinking status (Table1). Similarly, religion, caste, type of family and size of family do not show any significant association with alcohol use (Table 1). It is quite evident that occupation of mother has significant association with drinking status (Table 2; p- value being 0.000) while there is no significant association with father's occupation (p-value=0.221). The family history of alcohol use has significant effect on alcohol use (Table:3 ; p-value=0.002).

On applying logistic regression, independent association is found between alcohol use and its family history, type of family, mother's occupation and father's occupation (p-value=0.008; p-value=0.042); and other two being highly significant (p-value=0.000 each).

It is clear that those with family history of alcohol use are at four times more chances of involved in this habit of alcohol use as compared to those who were not involved. Surprisingly, the alcohol use is found about 52 times in the students whose mothers were housewife as compared to those with working mothers (Table 4).

There has been an inverse relationship with father's occupation i.e. those whose fathers were in govt. job had more chances of developing the habit of alcohol use than those with private job or business.

Discussion:

The undergraduates of Rohilkhand Medical College, Bareilly have been found to be indulged in the habit of drinking by about 31.36% while the study on analysis of Substance Abuse in Male Adolescents in Aligarh reported 3.8% of alcohol use among all substance use [16] and the study in Sambalpur, Orissa stated that 14.7% were alcohol users [17].

Though, there has not been found any significant association with religion while the study by Balabanova D. et al in Bulgaria reported that Muslims were less likely to drink than the orthodox Christians. When all variables were included in this model, only age and financial status remained significant [18]. The study in Nigeria by Gureje O. et al reported that there were differences in patterns of drug use according to religious affiliations. Muslims were less likely to report lifetime alcohol and sedative use than Christians (Protestants or Catholics) and less than those subscribing to other religions; they did not differ for other substances [19]. The study in Campinas by Barros M.B.A. et al in Brazil reported that the prevalence of abuse was significantly higher among those who did not have a religion or went to church less often. The prevalence of alcohol abuse/dependence was significantly higher among individuals with no religion or religion other than Evangelical [20].The study in Moshi, Northern Tanzania by Mitsunaga T. et al reported that the Christians had higher alcohol abuse than Muslims or other religions, as did Chagga men compared with men of other ethnic groups[21]. The study in Ajmer by Sundaram K.R. et al showed that alcohol abuse was found to be significantly associated with religion (higher in Hindus with a relative risk of 8.65 in males and 5.21 in females) [22].The study in Western India (Mumbai) by reported that the highest prevalence for ever use was among Christians (61.2%) closely followed by Buddhists (58.6%). The lowest prevalence was among Muslims (9.4%)[23].. A collaborative project of RMRC, Port Blair, NIMHANS, Bangalore, and Action Aid, International India Andaman and Nicobar Islands in the year 2008 reported Alcohol consumption is highest among Sikhs (very small sample size), followed by Christians, Hindus, and Muslims (p<0.001) [24]. The study in Ludhiana, Punjab by Khosla et al reported that and students belonging to the sikh religion were two times more likely to be current alcohol users compared to their counterparts [25]. The study in Aligarh reported that religion was not associated with substance use [18].

As far as the type of family is concerned, no significant association was found in this study on application of chi-square while on application of logistic regression it showed association with alcohol use while the study in Faridabad by Goswami A. et al reported that the type of family had a significant difference in relation to smoking but not alcohol [26].

As far as the family size is concerned, though no significant association was found with alcohol use in the indexed study but a statistically significant association between the substance abuse and size of their families was found in the study done by Ahmad A. et al in Aligarh [18].

In the present study, association with family history has been found, similar to the study in America which stated that the males reported a mean of 1.8 members who drank heavily or who drunk heavily in the past; 66.7% listed relatives whom they identified as first degree relatives [27].

Conclusion:

Health care professionals should be supported in their position as role models for healthy lifestyle. Intensified education concerning healthy lifestyle and coping with consumption of alcohol, cigarettes and illegal substances among medical students could help improve these

habits in health care professionals and their patients There is also need to bring about academic changes in quality of teaching and evaluation system.

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