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A Cross-Sectional Study to Assessthe Prevalence of Harmful Alcohol Consumption Habits among Students of a Medical College

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ABSTRACT

Introduction: There is substantial change in the trend and pattern of consumption with wide range of alcoholic beverages available in market at petty pricing. In addition to change in patterns, there is a significant shiftin the composition of drinkers as well, with a greater number of female drinkers. Thus, this study was designed to assess the prevalence of Alcohol use disorders (mainly hazardous drinking and alcohol dependency) among medical college students.

Methodology: Study was undertaken among 230 students studying in ESIC Medical College, Kalaburagi. Students from all 3 phases including interns participated in the study.Study duration was for 3 months (from Aprto Jun2018). Screening for alcohol use disorders was done by using AUDIT questionnaire.

Results: 25.4% of subjects were either regular/occasional alcohol consumers. Prevalence of hazardous drinking, alcohol dependency and binge drinking were19.29%, 8.7% and 14% respectively.

Conclusions: There was a higher prevalence of hazardous drinking as well as dependency for alcoholic beverages among medical students. Most of the participants started consuming alcohol by 18 years or even before that. Hazardous drinking habits were more prevalent among males, compared to female drinkers.

Keywords: Alcohol, Hazardous drinking, Addiction, Dependency, AUDs

INTRODUCTION

Worldwide every year, about 5.9% of deaths, more than 200 diseases and injury conditions and5.1% of DALYs are attributed to harmful usage of alcohol. More concerning fact is that most of the deaths and disabilities due to alcohol usage tend to occur relatively during earlier life period i.e., 20-39 years. Harmfulalcohol usage is not only associated with range of mental and behavioural problems among young adults but alsoacts as an important risk factor for non-communicable diseases (NCDs) such as; cancers, cardiovascular diseases, as well as injuries resulting from violence and road clashes.[1] Alcohol usage alone accounts for 60% of all injuries reporting to India's emergency rooms.[2]In addition to contributing to the burden of NCDS and injuries, recentevidence suggests that; it isalso implicated in progression of,some of theinfectious diseases such as tuberculosis and worsening the course of HIV/AIDS.[1] Beyond health impact, harmful alcohol usage indirectly results in significant social and economic losses to individuals and society at large.[3]

In recent past, India has seen an alarming rise in city bars and night clubs; soon overcoming all inhibitions of lifestyle change.[4] Despite the fact, Government has recognised this problem as an emerging public health concern and has proposed policy changes regulating sales and taxation of drinks, but this may not be sufficient to curtail the rise in harmful effects of alcohol consumption in society. It has been observed that; from the past 20 years

per capita consumption of alcohol has increased by 55%, and the treatment gap for those affected has remained persistently high.[5, 6]Following increase in consumption of alcohol in recent years there is a parallel growth rate in alcohol sales as well. In India, government statistics shows that 21% of adult men and around 2% of women are engaged in drinking habits, 4-5% of which are dependent drinkers requiring "help".[7]

There is a significant change in the trends and consumption patterns of alcohol, with wide range of alcoholic beverages available in market. Current trend is that people have begun to drink at very young ages especially; there is a substantial rise in proportion of drinkers under 21 years of age-group. Commercials and surrogate advertisements have indirectly boosted this vast unexploited market especially among young adults as a most sought potential place for investment. Furthermore, there is drastic rise in number of young women drinkers as well. In India, studies have shown that more than half of drinkers are engaged in hazardous drinking habits; characterised by binging and isolated consumption.[4]

Thus, to curb hazardous drinking as a growing public health challenge, early recognition of drinking behavioural tendencies, which progress towards development of dependency among vulnerable age and sex groups plays a crucial role. Therefore, current study was undertaken among young adults with an objective to estimate the prevalence of alcohol use disorders[2] using AUDIT tool (Alcohol use disorder Identification test) among medical college students.[8]

METHODOLOGY:

Study setting and sample size: Study was undertaken among medical students in ESIC Medical College, Kalaburagi district. Current setting was selected conveniently. Study was conducted for three months from 1st April 2018 to 30th June 2018. Study was planned to conclude by June end, due to expected change in students' term. Assuming frequency of outcome to be 10% (based on previous studies)[9] and considering 5 % precision, sample size was estimated to be 239 at 99% confidence level.

Every year, a batch of 100 medical students gets enrolled to this college. From each batch (1st year to final year MBBS, including interns) 50 students were randomly called at a time and briefed about the purpose of study and contents of tool. Subjects below 18 years and above 23 years were excluded from the study. Informed written consent was obtained from all volunteered subjects. Pupils were ensured about anonymity of their personal identity and confidentially of sensitive information gathered, following this a e-form of structured questionnaire was sent on their mobile phones for self-administration. A total of 230 students participated in the study of which six incomplete responses were omitted for analysis. Thus, final analysis was undertaken for 224 subjects.

Study tool: Initially information was gathered on socio-demographic profile of participants. Later part collected information on alcohol consumption in the past 12 months; responses are scored from 0 (Never occurs) to 4 (Daily) was taken as the criteria for defining alcohol use. A pre-tested AUDIT (Alcohol Use Disorders Identification Test) questionnaire was used to assess the harmful alcohol use. The AUDIT was developed by WHO and has been widely validated, including in India.[10, 11]

Data on hazardous drinking habits such as frequency of drinking, quantity of heavy drinking, dependence symptoms like, an impaired control over drinking, and morning drinking was gathered. In addition, data on harmful alcohol use like guilty feeling after drinks, blackouts and alcohol–related injuries and other information which were concerned with drinking were assessed. Total scores of 8 or more was considered as indication of harmful alcohol use, whereas a score of more than 13 in females and more than 15 among males was considered as alcohol dependence. Those who consumed alcohol monthly/less than that, were considered as occasional drinkers while those who consumed alcohol 2 to 3 times in a month or more than that were as regular drinkers.[10]

Statistical analysis:

Data was entered and analysed by using SPSS (Statistical Package for Social Sciences) version 20.0 for Windows. The variables were expressed in terms of proportions, mean and SD. Pie of pie charts, simple and component bar-graphs were used to make pictographic representation of the results. A P value of less than 0.05 was considered as significant for 95% CL.

Ethics: Prior to commencement of study Ethical clearance was obtained from Institutional ethical clearance committee, ESIC Kalaburagi. For adults who expressed suicidal ideation during study, were referred to department of Psychiatry, ESIC medical college hospital, Kalaburagi.

RESULTS

As shown in Table 1: Most of the subjects i.e. 55.8 % were present in 20 to 21 years age group with mean age being 20 years. Majority of the participants were males (54.9%) and most of them belonged to Hindu religion (76.8). There was almost

Table 1: Socio-demographic profile of the study subjects

Particulars	Cases (%)
Age (in years)	
18-19	56(25)
20-21	125(55.8)
22-23	43(19.2)
Gender	
Male	123 (54.9)
Female	101(45.1)
Religion	
Hindu	172(76.8)
Muslim	36(16.1)
Christian	8(3.6)
Others	6(2.7)
Current year of graduation in MBBS	
First year	62(27.7)
Second year	55(24.6)
Third Year	57(25.4)
Fourth Year	32(14.3)
Internship	18(8)
Current Residential details	
Home	46(20.5)
Hostel	164(73.2)
Staying singly	5(2.2)
Staying with friends	9(4)
Past Residential details	
Home	148(66.0)
Hostel	65(29)
Staying singly	3(1.3)
Staying with friends	8(3.5)
Monthly family income from all sources	
≤25000	56(25)
26000-50000	58(25.9)
51000-100000	46(20.5)
101000-150000	13(5.8)
≥151000	24(10.7)
Don't know	27(12.1)
Fathers educational status	
Illiterate	4(1.8)
Primary school	3(1.3)
Middle school	6(2.7)
High school	29(12.9)
Intermediate degree	49(21.9)
Graduate	91(40.6)
Post-graduate and above	42(18.8)
Mothers educational Status	
Illiterate	11(4.9)
Primary school	5(2.2)
Middle school	11(4.9)
High school	50(22.3)
Intermediate degree	51(22.8)
Graduate	78(34.8)
Post-graduate and above	18(8)
Family history of alcohol consumption	
None	160(71.4)
1 person	30(13.4)
1 to 2 persons	15(6.6)
More than 2 persons	19(8.4)

equal representation of study participants from first three years of graduation, however, subjects studying in final year (14.3%) and those perusing their internship (8%) represented in lesser number. Considering current residential details; subjects residing in hostel were present in greater number (73.2%) compared to all other groups. As less as 4% of subjects stayed in room (outside the campus) with friends and only 2.2% stayed in room without friends or singly respectively. A significant proportion of subjects reported their total family income, ranging from 25000 to one lakh per month and minority (10.7%) of them reported it to be greater than one and half lakh per month, but 12.1% of subjects did not reveal their income. Substantial proportions of subject's parents were educated up to High school or more than that; of which majority of fathers (40.6%) and mothers (34.8%) were graduate degree holders. Subjects having a history of; at least one person regularly consuming alcohol in their family were in more number (13.4%) compared to subjects having family history of more than one-person consuming alcohol.

Among all subjects who participated in the study, 74.6% constituted non-drinkers (never consumed alcohol in life-time) and 25.4% constituted either occasional/regular alcohol drinkers. Amid alcohol drinkers 19.29% (11) had hazardous drinking habits whereas 81% had non-hazardous drinking habits as shown in Fig 1.

Fig 2: Most of pupils who consumed alcohol were present in 20 to 21 years age group. Majority of subjects who started alcohol consumption regularly within past one year were in 18 to 19 years age group, whereas drinking initiation (new beginners) was least in 22-23 age groups. The proportion of subjects who consumed alcohol from more 4 years was highest in 20 to 21 years age-group, which indirectly indicates much early initiation of drinking habits, even before 18 years.

The prevalence of Hazardous drinking habits among alcohol consumers was 19.29% (11); of which as high as 72.7% were males and 27.3% were female subjects. Alcohol dependency was present in 8.7% of alcohol consumers of which males contributed 60% andfemales contributed for 40% of dependency. Prevalence of binge drinking (5 or more alcoholic drinks for males or 4 or more alcoholic drinks for females on the same on at least 1 day in the past month)[2]was 14%. It was observed that 25.4% (57) of subjects had experimented by consuming alcohol at least once in their life-time of which 75% were males and remaining 25% were females.

The association between alcohol consumption and gender was statistically significant ($p<0.01$). A total of 50.8% (29) of those who experimented with alcohol at least once in their life-time later turned out to be a regular-drinker of which 76% were males and 24% were females as shown in Table 2.

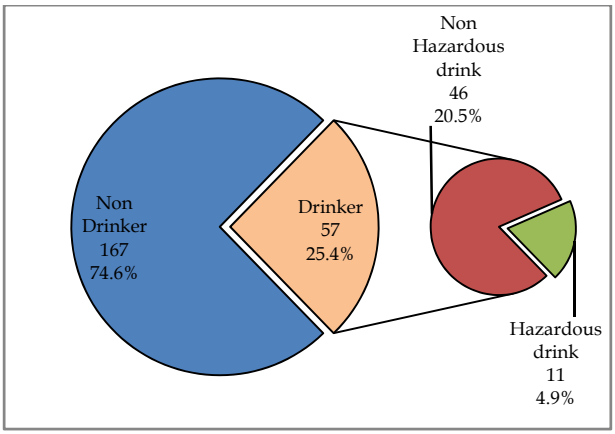

Fig 1: Prevalence of Hazardous drinking habits among medical college students

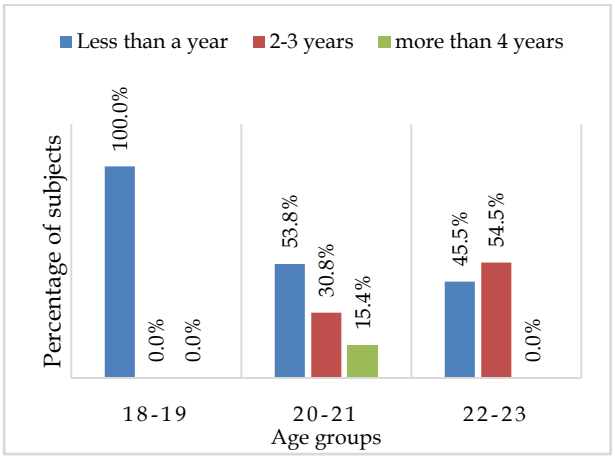

Fig 2: Distribution of subjects according to age and duration of alcohol consumption

Table 2: Gender wise pattern of drinking habits among study subjects

Variables	Male	Female	Total	P value
Hazardous drinking habits				
Yes (%)	8(72.7)	3(27.3)	11	0.22
No (%)	115(54)	98(46)	213	
Alcohol dependency				
Yes (%)	3(60)	2(40)	5	0.81
No (%)	120(54.9)	99(45.1)	219	
Subjects who experimented with alcohol at least once				
Yes (%)	43(75.4)	14(24.6)	57	<0.001
No (%)	80(47.9)	87(52.1)	167	
Occasional alcohol drinkers who later turned to regular				
Yes (%)	22(76)	7(24)	29	0.711
No (%)	8(89)	1(11)	9	
Binge drinking				
Yes (%)	6(75)	2(25)	8	0.67
No (%)	16(76)	5(24)	21	

Prevalence of binge drinking was 14%. Binge drinking habits were also more common among males compared to femalesas shown in Table 2. However, the association between gender and harmful drinking habits was not statistically significant.

DISCUSSION

In our study 75% of subjects were not found to consume alcohol, and 25 % consumed alcohol on regular basis or occasionally. A study conducted by Chaudry et al., in among medical college students in Meerut had similar resultswhereinthe pattern of drinking among the medical students showed about 87.3% students were non-problem drinkers. In our study among all those who consumed alcohol; Hazardous drinking habits were prevalent in 19% of subjects, which was more than prevalence pattern observed in above study (i.e. 6.8% of the alcohol users are hazardous drinkers). Further alcohol dependency was high in our study at 8.7% compared to above study which showed 3.6% subjectsas dependent users. Reasons may be attributed to increase in proportion of female drinkers with time.[12]A similar study during 2007, by D'Costa et al., in rural Goa using AUDIT questionnaire revealed, hazardous alcohol users were 76.2%, harmful alcohol users 14.3% while 9.5% were dependent users.[13]The study in Chandigarh by Chavan BS et al., showed that 10.7% were dependent in the urban slums whereas 3.12% fulfilled dependence criteria in rural areas.[14]The study in Goa found 8.2% of men and 0.7% of women were classified as problem drinkers.[15]

In a study by Anand A et al., the prevalence of couse of tobacco and alcohol among men aged 18-59 years was 23.5%, age cohorts were important determinants of alcohol and tobacco use.[16]Parallel to findings of our study a study by Ramanan et al., to analyse social problems among drinkers in rural India revealed; the overall prevalence of alcohol use among ≥18 years of age was 9.7% and exclusively among males was 17.1%. Problem of drinking increased with age. One-third of the users began drinking before 20 years of age andabout half of the users had strained relations with their family members and neighbours both. Majority of alcohol consumers had dependence problems.[17]Several studies from Nepal, Sri Lanka, Thailand, and India have also reported 1-year prevalence of alcohol consumption between 21.2% and 34.8%.[18, 19]

In our study, most of subjects who started consuming alcohol on regular basis within past one year were present in 18 to 19 years age group, and proportion of those who consumed alcohol from past4 years or more; were in 20 to 21 years age-group, this indirectly depicted early initiation of drinking habits, before attaining 18 years age. Analogous to findings of our study a study undertaken by Environmental resource hub, Mumbai, showed an in-

verted U or V-shape relation between age groups and alcohol usage. In the same study about 28% of men in the working age group were consuming alcohol; two extreme age groups, 18-24 years and 50-59 years showed lowest consumers. The consumption of alcohol was accompanied by tobacco use in India, as most alcohol users were also tobacco users. The co-use of these products increased with age.[16]Malik K et al., found, average patients-initiated alcohol use in their early twenties and developed dependence by the age of 29.66 years (S.D = 7.60) and there was a long gap between average duration of alcohol dependence and seeking treatment. The mean composite score on ASI was 0.71 (S.D = 0.18) and on FTND was 5.16 (S.D = 2.59), indicating a high level of alcohol dependence.[20]The average age of initiating drinking in our study was 18 to 19 years or less than that which is slightly less than findings from Kolkata 20.8 ± 5.9 years[21]but much lower than the reports from Vellore 27.9 ± 9.0 years.[22]Younger ages of alcohol initiation have been associated with greater risk for heavy drinking, early onset of alcohol dependence and health problems such as cirrhosis and peripheral neuropathy among women with AUDs (SAMHSA, 2014). Compared to women, men showed a higher use of tobacco and alcohol in several studies from Asian countries including India, resulting in higher death rates due to cancer and related diseases.[23-25]

As expected, in our study harmful drinking habits were more prevalent among males (72.7%) compared to females (27.3%) in addition alcohol dependency was also more among males (60%) compared to female subjects (40%). Current study showed25.4% subjects had consumed alcohol at least once in their life-time. The WHO's most recent Global Status Report indicated that 28.9% of women worldwide aged 15 years and above consumed alcohol at least once and 5.7% of them engaged in heavy drinking (WHO, 2014). In our study what is remarkable is; major proportion of male subjects (75.4%) who experimented with alcohol at least once in their life-time turned out to be a regular drinker later in their life compared to females (24.6%). There aresome studies which show increase in number of women seeking treatment for alcohol use problems in India.[20,26]Women are at more risk for various adverse bio-psychosocial outcomes due to their alcohol abuse. Depression, anxiety and post-traumatic stress disorders have been frequently reported among women with alcohol use disorders (AUDs).[27]High levels of alcohol dependence along with nicotine dependence further increases their vulnerability to health and reproductive problems among women.[17]

CONCLUSION

Our findings revealed 25.4% of subjects were consuming alcohol occasionally or on regular basis. There was a higher prevalence of hazardous drinking as well as dependency towards alcoholic beverages among male students. Most of the participants started consuming alcohol by 18 to 19 years or even much before that. Hazardous drinking habits were more prevalent among male subjects,anda greater number of occasional male drinkers later turned out to be a regular drinker.

LIMITATIONS

The results are based on a cross-sectional survey, so the direction of relationship could not be established. Assessment of chronic morbidity, tobacco and alcohol use was self-reported by the respondents, which also might had influenced the results. Since the participation of subjects was voluntary there is scope for selection bias; individual's unwillingness to acknowledge that they drink are likely to have biased our prevalence estimates low and thereby reducing the magnitude of effects. Sampling technique being convenient results are not generalisable to all settings.

RECOMMENDATIONS

Rising trend of alcohol usage among young adults predisposes them for increased hazardous drinking behaviours in their later life; effects being more intensive especially among females. Thus, early screening and brief intervention through establishment adolescent counselling centres and health education programmes at Pre-college level may help in reducing the burden of alcohol use disorders among young adults. A more research must be undertaken among youth who have begun using alcohol, but have not developed alcohol use disorders with; individual specific early interventions such as promoting social connectedness, education about the potential risks of alcohol use, specific refusal skills, and improving self-efficacy etc.

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