
Original Article

Determinants of alcohol and tobacco use among medical students of a Medical College in South India

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Abstract:

Background: Undergraduate (UG), as well as postgraduate (PG), medical students are exposed to daily stressors, which can lead to substance use and abuse. Substance abuse remains a covert yet well-known phenomenon among medical students and medical practitioners globally.

Objective: To study the determinants of alcohol and tobacco consumption among medical students of a Medical College in South India

Methods: An institution based cross sectional study was carried out among 612 students present on the day of the survey. In beginning the concerned batch in-charge was contacted; date and time was fixed; students were asked to sit in single row so that confidentiality is maintained. Students name or any other personal identification information was not asked. Questionnaire was given to all at same time and collected exactly after 10 minutes such that discrimination was avoided. Same procedure was followed for all the medical students of 5 batches. The data was analyzed using SPSS version 16.

Results: The prevalence of alcohol use was 21.24%. The prevalence of tobacco use was seen only in 34 students i.e. 5.55%. Batch year, being male, residing at their own house or outside the college in a private hostel or room, and belonging to problem family were significantly associated with alcohol use. Only being male was statistically significant with tobacco use. Males were 10.5 times more likely to use tobacco compared to females.

Conclusion: Prevalence of alcohol use at young age of studies was very high and it increased as the seniority increased. Counselling of these students in the first year of admission could help prevent further increase in the addictions.

Key words: determinants, alcohol consumption, medical students, Medical College

INTRODUCTION:

Drug addiction is defined as “A state, psychic and sometimes also physical, resulting in the interaction between a living organism and a drug, characterized by behavioral and other responses that always include a compulsion to take the drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence. Tolerance may or may not be present.”¹

When not indicated medically either legal use or illegal use of any drug or substance which is psychoactive is called as substance use. It is a health hazard. It is also a hazard to the society, families and also economically as well as to the nation also. The number of people using drugs or substance use is an increasing problem in the community. It has been estimated by various studies that the prevalence of alcohol use is around 20-40% in people more than 15 years of age.² Medical students are a well known community who are exposed to daily stress. This is one of the strongest risk

factor for predilection towards the substance use. Psychedelics, tranquilizers and alcohol are the most common substances abused commonly by the medical students. Substance use has been found to be associated with impairment of the occupational and social functioning. This leads to failure in the control of the substance use; withdrawal symptoms are also common. Heavy and regular use can lead to the disciplinary action against physicians. Most of the studies related to the substance use focus on elderly age groups and general population. It has been stated that males are 9.7 times more likely to use alcohol compared to females. Smoking and tobacco use is also very high among males compared to females. Some studies have pointed out that smoking was 25.5 times more in males and that of tobacco chewing was 3.7 times more compared to females. The prevalence of tobacco and alcohol use in undergraduate medical students was 9% and among postgraduate medical students was 7.1% and 16.7% in young physicians.³

It has been estimated by World Health Organization that globally there are two billion people who use alcohol, 1.3 billion people who smoke, and 185 million people who use drugs.⁴

Hence, the present study was undertaken to estimate alcohol and tobacco consumption pattern and determinants among medical students of a Medical College in South India.

METHODS:

Type of study: Cross sectional study

Place of study: The present study was conducted at a medical college in South India

Study Duration: The study was conducted for a period of one month from 22 January 2018 to 18 February 2018.

Ethics: The ethical committee approval for the current study was taken prior to the survey. Permission of Dean and respective class in-charge of all the 5 batches had been taken. Participation in the study was voluntary and informed consent was implied if students completed and returned their questionnaire.

Sample size: During the study period it was possible to study 612 medical students.

Study population: 702 Medical students from the medical college belonging to the batches 2012, 2013, 2014, 2016, and 2017 formed the study population for the present study.

Inclusion criteria:

Students present on the day of data collection and willing to participate in the survey are included in the present study.

Exclusion criteria:

Students who are absent on the day of data collection and unwilling to participate are excluded from the present study.

Study questionnaire: After extensive review of literature, a pre-designed and semi structured questionnaire was formed.

Data collection: In beginning the concerned batch in-charge was contacted; date and time was fixed; students were asked to sit in single row so that confidentiality is maintained. Students name or any other personal identification information was not asked. Questionnaire was given to all at same time and collected exactly after 10 minutes such that discrimination was avoided. Same procedure was followed for all the medical students of 5 batches.

Statistical Analysis: The data was entered in Microsoft Excel work sheet and analyzed using SPSS version 16. For determinants, binary logistic regression analysis was carried out. P value of less than 0.05 was considered as statistically significant.

RESULTS:

Majority of students participated were from 2014 batch followed by 2013 and 2017. The least percentage was of 2012 batch, due to difference in participating rates at the time of survey. Majority of the students belonged to 22 yrs (18.3%) of age followed by 21 yrs (17.81%) of age. The least were of 27 yrs (0.16%) and 17 yrs (1.96%) of age. Majority of the students are females (65.84%). Majority of the students were day scholars (58.16%) and the least percentage are from private hostel. Majority of the students were from nuclear family (83.98%). Majority of the students were not from broken family (93.4%). Majority of the students were not from problem family (94.93%). Minority of the students were having single parent (3.59%).

Table 1: Distribution of medical students based on their alcohol use

Alcohol use	Number	Percentage
Yes	130	21.24
No	481	78.59
No response	01	0.16
Total	612	100

Majority of the students were non alcoholics. The prevalence of alcohol use was 21.24%. Majority of the medical students started consuming alcohol at the age of 16-20 years of age (60%). Majority of the students started their alcohol consumption because of curiosity (59.23%). Majority of the students consumed alcohol on special occasions (70%) and least were consuming twice a day (0.76%). 33% percentage of students were involved in binge drinking. Majority of the students had binge drinking 1-5 times (48.83%). 30% of the students tried to quit alcohol.

Table 2: Prevalence of tobacco use among study subjects

Tobacco us	Number	Percentage
Yes	34	5.55
No	549	89.70
No response	29	4.73
Total	612	100

The prevalence of tobacco use was seen only in 34 students i.e. 5.55%. Among these 34 tobacco users, majority i.e. 58.82% were smoking cigarettes. Majority of the students (35%) were using the tobacco since last three years. 11.76% of the students gave family history of tobacco use. 41.17% of the students reported that they tried to quit smoking; 28.57% of the students attempted to quit tobacco use as they wanted to be healthy and 21.42% used counseling method to quit tobacco use.

Table 3: Determinants of alcohol use among medical students: Results of the binary logistic regression analysis

Variables	Odds ratio	95% CI (lower-upper)	P value
Batch year	0.754	0.587-0.969	0.027
Age	7.094	0.867-1.380	0.449
Sex	Female	1	-
	Male	3.979	2.518-6.289
Residence	College hostel	1	-
	Day scholars	2.042	1.253-3.329
	Private room	3.006	1.249-7.230
Family type	Joint	1	-
	Nuclear	1.270	0.618-2.608
	Three generation	1.821	0.537-6.167
Broken family	No	1	-
	Yes	0.862	0.315-2.360
Problem family	No	1	-
	Yes	3.842	1.241-11.896
Single parent	No	1	-
	Yes	1.380	0.526-3.621

The null model correctly predicted 78.9% of the alcoholics. The predictive accuracy increased to 81.5% after the variables were entered in the model. The Omnibus Tests of Model Coefficients indicated that the chi square value is statistically significant to reject the null model. Nagelkerke R Square was 0.226 which means that 22.6% of the variation in the outcome was explained by the predictors entered in the model. The p value for Hosmer and Lemeshow Test was 0.368 which indicated that the model was pretty good to predict the outcome.

Variables like batch year (batch year indicates the total duration spent in the medical college), age, residence, family type, broken family, problem family, and single parent were entered as independent variables in the model. Out of these variables, batch year, being male, residing at their own house or outside the college in a private hostel or room, and belonging to problem family were significantly associated with alcohol use.

As the batch year increased by one year, the odds of alcohol use decreased by 0.754 and it were statistically significant. Males were 3.9 times more likely to use alcohol than females. Day scholars 2 times and those who stayed in the private hostel or rooms outside the college were 3 times more likely to use alcohol compared to those who stayed in the college hostel. Those who belonged to problem family the risk of alcohol use was 3.842 times more than those who did not. Residing at college hostel was found to be protective compared to residing in their house or outside the college in a private hostel or room.

Table 4: Determinants of tobacco use among medical students: Results of the binary logistic regression analysis

Variables	Odds ratio	95% CI (lower-upper)	P value	
Batch year	0.278	0.434-1.271	0.278	
Age	1.023	0.690-1.516	0.910	
Sex	Female	1	0.000	
	Male	10.568		4.120-27.111
Residence	College hostel	1		
	Day scholars	0.699	0.310-1.577	0.388
	Private room	0.823	0.229-2.961	0.766
Family type	Joint	1		
	Nuclear	2.395	0.500-11.477	0.275
	Three generation	3.418	0.376-31.0741	0.275
Broken family	No	1	0.435	
	Yes	0.394		0.038-4.079
Problem family	No	1	0.135	
	Yes	4.351		0.634-29.853
Single parent	No	1	0.296	
	Yes	0.302		0.032-2.850

Tobacco use included smoking of tobacco in any form, and tobacco chewing in any form. The null model correctly predicted 94.6% of the tobacco users. The predictive accuracy of the model did not change after the variables were entered in the model. The Omnibus Tests of Model Coefficients indicated that the chi square value is statistically significant to reject the null model. Nagelkerke R Square was 0.250 which means that 25% of the variation in the outcome was explained by the predictors entered in the model. The p

value for Hosmer and Lemeshow Test was 0.031 which indicated that one has to be cautious while interpreting the results of the model as the value was less than 0.05 and statistically significant.

Variables like batch year (batch year indicates the total duration spent in the medical college), age, residence, family type, broken family, problem family, and single parent were entered as independent variables in the model. Out of these variables, only being male was statistically significant with tobacco use. Males were 10.5 times more likely to use tobacco compared to females.

DISCUSSION:

The prevalence of alcohol use was 21.24%. The tobacco use was seen only in 34 students i.e. 5.55%. Batch year, being male, residing at their own house or outside the college in a private hostel or room, and belonging to problem family were significantly associated with alcohol use. Only being male was statistically significant with tobacco use. Males were 10.5 times more likely to use tobacco compared to females.

Garg A et al ⁵ carried out a prospective study among 168 UG and PG medical students in three medical colleges. They found that the use of alcohol was 56.57% which is very high compared to the present study. They found that there was a strong association between family history of alcohol use and use by the students.

Rai D et al ⁶ collected response from 2135 medical students found that the prevalence of alcohol use was 7.1% which is low compared to the present study prevalence and the prevalence of tobacco use was 6.1% which is comparable to the present study.

Bhojani UM et al ⁷ found that the prevalence of ever use of tobacco use was 15.7% and the prevalence of current users was 5.3% which is comparable to the prevalence of the present study. The author found that 78.3% of the students were aware about the tobacco as health hazard. Peer pressure was the most common reason for initiation of the tobacco use.

Ramakrishna GS et al ⁸ found that the prevalence of tobacco use was 8.7% which is comparable to the present study. The prevalence was more in males compared to the females. We also found similar findings. They noted that in 34% of the cases, the use started after admission to the medical college. They found that third year students were 3.2 times more likely to be current tobacco users in comparison to first year medical students.

Voigt K et al ⁹ observed that the median daily consumption of alcohol was significantly more among males compared to females. Problematic alcohol drinking behavior was seen in more than 30% of the cases. Consumption of illegal substances was higher in medical students compared to the general population.

Flaherty JA et al ¹⁰ noted that as the age increased among physicians, the pattern of increased alcohol problems increased. The authors did not find any gender differences in problematic alcohol drinking.

Kumar P et al ¹¹ found that the dependence rate for medical students was 5% and for doctors it was 3%. Medicine specialty doctors were found to be more inclined towards substance abuse i.e. 21%.

Naskar NN et al¹² carried out a study among 1993 UG medical students. They found that the prevalence of drug abuse was 27.9%. They also observed that the prevalence increased with increasing academic year which is similar to the findings of the present study. The prevalence was more among males compared to females which are similar to the findings of the present study.

CONCLUSION:

Prevalence of alcohol use at young age of studies was very high and it increased as the seniority increased. Counseling of these students in the first year of admission could help prevent further increase in the addictions.

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