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Prevalence and Correlates of Alcohol Intake In a Rural Block of Haryana, India

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Abstract

Alcohol consumption is today's major public health concern in our country, which can be largely reduced solely by primordial and primary prevention. According to NFHS III, 31.9% of men and 2.2% of women drink alcohol in India. Aims & objectives: To determine the prevalence and correlates of alcohol intake among the rural community of block Beri, district Jhajjar, Haryana. Methods: This cross-sectional study was carried out during the period of September 2012 to August 2013. Multistage random sampling was used in this study. From each selected PHC, two subcentres were randomly selected and from each subcentre area, two anganwadis were also selected by simple random sampling technique. Hence a total of 6 sub-health centres and 12 anganwadis were included in the study. From each anganwadi, 90 individuals of 15-64 years age group who were further subdivided into 15-24, 25-34, 35-44, 45-54 and 55-64 years age-group were selected and interviewed. Thus, a sample size of 1080 was included in the study Appropriate statistical tests were used for analysis. Results: The overall prevalence of ever alcohol intake was found 25.7% (Males:49.1%; Females: 2.4%). The prevalence of current alcohol intake was found to be 18.8% (Males: 36.9%; Females: 0.7%). Conclusion: Our study confirmed the high burden of alcohol intake in rural areas and reiterated the need to address these issues comprehensively as a part of NCD prevention and control strategy.

Keywords : Alcohol, Prevalence, NCD

Introduction

Alcohol abuse is today's major public health concern in our country, which can be largely reduced solely by primordial and primary prevention. Alcohol accounted for 3.8% of deaths and 4.6% of DALYs.[1] Alcohol use has been causally linked to many cancers and in excessive quantity with many types of cardiovascular diseases.[2,3] Evidence also shows a causal, dose-response relationship between alcohol use and several cancer sites, including the oral cavity, pharynx, larynx, oesophagus, liver and female breast.[4]According to NFHS III, 31.9% of men and 2.2% of women drink alcohol in India..[5]In view of the public health importance of harmful use of alcohol related consequences, it is important to regularly analyze the pattern and trend of alcohol consumption. With this background, this study was carried out to determine the prevalence and correlates of alcohol intake among the rural community of block Beri, district Jhajjar, Haryana.

Material and methods

Study area and study period

This cross-sectional study was carried out during the period of September 2012 to August 2013 in Block Beri, district Jhajjar, Haryana, a rural field practice area of Department of Community Medicine, PGIMS, Rohtak. This block

is served by one General hospital (Beri), two Community Health Centres (Dighal and Dubhaldan), five Primary Health Centres and twenty five Subcentres and has a total of 136 AnganwadiCentres (AWCs). Ethical approval to conduct the study was taken from Institution Review Board (IRB).Active support and help of health workers and anganwadi workers was taken in contacting and motivating study population which made them more cooperative and the non-responders were minimized.

Sample Size and Sampling Strategy

The sample size was calculated to be 896 considering the prevalence of alcohol consumption as 16% [6] with confidence level of 95% and 15% relative allowable error.

Multistage random sampling was used by including both the CHC's and three randomly selected PHCs of the rural block. From each PHC, two subcentres were randomly selected and from each subcentre area, two anganwadis were also selected by simple random sampling technique. Hence a total of 6 sub-health centres and 12 anganwadis were included in the study. From each anganwadi, 90 individuals of 15-64 years age group who were further subdivided into 15-24, 25-34, 35-44, 45-54 and 55-64 years age-group were selected and interviewed. Gender wise enumeration of the study population according to the subdivided age groups was done from the anganwadi registers. Nine males and nine females were selected from each of the five age subgroups by systematic random sampling. Thus, a sample size of 1080 was included in the study. In case, the desired numbers of study subjects were not available in any anganwadi area, subsequent anganwadi population was included in the study. Those subjects who were not willing to participate were excluded and next individual was selected for the interview instead.

Definitions used[7]

Current Drinker: Those who consumed one or more than one drink of any alcohol in the year preceding the survey.

Former/Past Drinker: Those who have consumed alcohol but those who did not consume one or more drink during the year preceding the survey.

Standard Drink: It is defined as any standard drink with net alcohol content of 10 gm ethanol. One standard drink is equivalent to consuming one standard bottle of regular beer (285 ml), one single measure of spirits (30 ml) or one medium size glass of wine (120 ml).

Data collection and Analysis

A pre-tested, semi-structured schedule was used for interviewing the study subjects. Written and informed consent was taken from all the subjects before initiating the interview. The confidentiality of the information was assured.

Collected data were entered in the Excel spreadsheet and analysis was carried out using Statistical Package for Social Studies (SPSS) version 20.0. Pearson's chi square test was used to evaluate differences between groups for categorized variables. Normally distributed data were presented as means and standard deviation, or 95% confidence intervals (CI) . Student's t test and logistic regression analysis was done to evaluate factors associated with alcohol intake. All tests were performed at a 5% level of significance, thus an association was significant if the p value was < 0.05.

Results

The overall prevalence of current-alcohol use was found 18.8% (203/1080) and it was higher among males (36.9%) as compared to females (0.7%) as is evident from table 1. Among males, it increased from 20.4% in 15-24 years age group to 48.1% in 35-44 years age group and then decreased to 36.1% in both 45-54 years and 55-64 years age group. This difference was statistically significant among males (p=0.000). While alcohol use (current) among females was 2.8% (only 3 subjects) in 55-64 years age group and there was none in 15-24 years, 25-34 years and 45-54 years age group and this difference was not statistically significant (p=0.073). So, the current alcohol use among females in the rural areas was found to be negligible.

Our study found the overall prevalence of ever-alcohol use was 25.7% (278/1080) and it was higher among males (49.1%) as compared to females (2.4%).

Table 2 shows that the median age for initiation of alcohol was 22 years. The median age was observed to be lower among males as compared to females, which shows men indulge more in these unhealthy habits because of frequent movements and less inhibition due to social and financial independence.

Nearlytwo-fifths (39.9%) of current alcohol users drank 1-3 days/month, about one-fourth (26.6%) drank almost daily (5-7 days/week) and about one-fifth (20.2%) of them drank less than once a month in a year (Table 3)

The median number of standard alcohol drink (on drinking day) among current alcoholics was found 3.0. The mean number of standard drinks was found to be higher among males (3.2) than females (2.0). The mean duration of alcohol consumption was found 20.3 17.4 years (Table 4).

As per the stepwise logistic regression analysis, it was observed that the prevalence of current alcohol consumption using the above mentioned socio-demographic variables, majority were found to be statistically significant except educational status. Males were nearly 90 times (aOR: 88.59, CI: 32.05-244.89, p-0.000) more likely to consume alcohol than females. Age was a very important predictor of alcohol consumption which showed two (aOR: 2.37) and three times (aOR: 3.02) increase in 25-34 and 35-44 years age group respectively with reference to 15-24 years group. Labourer (aOR: 2.68, CI: 1.55-4.65, p-0.000) by occupation and upper socio-economic scale (aOR: 7.39, CI: 1.38-39.36, p-0.001) also showed high positive association with alcohol consumption. (Table 5)

Table 6 shows that weight (64.51 ± 13.81 vs 57.97 ± 12.67 kgs, p=0.000), WC (88.53 ± 12.49 vs 85.14 ± 12.48 cms, p=0.001), was significantly higher in current alcohol users as compared to non-users by applying unpaired t test. BMI (22.93 ± 4.89 vs 23.01 ± 4.79 kg/m^2, p=0.831) had no significant difference while SBP (125.14 ± 16.50 vs 119.24 ± 17.60 mmHg, p=0.000), DBP (83.22 ±13.75 vs 77.83 ±10.59 mmHg, p=0.000) was significantly higher in current alcohol users.

Discussion

In our study, the overall prevalence of ever alcohol use was found to be 25.7% and it was higher among males (49.1%) as compared to females (2.4%). The prevalence of current alcohol use was found 18.8% with 36.9% in males and 0.7% in females. In males, there was a steep rise from 20.4% in 15-24 years to 43.5% in 25-34 years with maximum consumption observed in 35-44 years age group (48.1%). **Krishnan et al** reported that the prevalence of ever alcohol consumption and current alcohol consumption among men was 29.0% and 24.6% respectively and none of the women was involved in alcohol consumption.[8] This difference in prevalence by gender could be attributed to socially unacceptable alcohol use among females & overindulgence of males in this unhealthy practice, accompanied with peer pressure in younger age groups and cultural practices to celebrate social functions like marriages, festivals. The

difference by age group may be attributed to financial independence and work place culture in 25-34 years age group and beyond among males. Other community based studies conducted in various parts of rural India reported variable prevalence of current alcohol use as 16.5%, 20.9%, 29.8%, 37.7%, 21%, and 30.8% respectively.[6, 9, 10, 11, 12, 13]

Our study found only 0.7% women as current alcoholics. Other studiesreported almost similar findings as prevalence of current alcohol consumption in females as 1.1%, 0.9% and 1% respectively.[6,14,15]while there are other studies that reported none of the females as current alcoholics.[8,11,12]

The frequency of alcohol intake among current alcoholics in our study was found as follows: 20.2% less than once a month; 39.9% 1-3 days in a month; 13.3% 1-4 days/wk and 26.6% almost daily (5-7 days/wk). However, Sugathan et alreported only 13% of the current users drank alcohol almost daily, which was nearly half as compared to our study.[14]This might be because of more awareness in highly literate state of Kerala. According to IDSP risk factor survey, consumption of alcohol 5-7 days per week in the past one-year was found to be 6.7% in Madhya Pradesh to 21.1% in Andhra Pradesh.[16]

The reason of comparatively higher prevalence in our study could be due to significant number of liquor shops in the state and weak law system. Instead of display of hoardings with warning "use of alcohol is injurious to health" there are hoardings like **"piyoaurjiyo"** written on liquor shops. The sale of alcohol to persons below the age of 25 years is prohibited as per law but majority of habitual drinkers usually started drinking much before they were 25 years, which signals the implementation failure of law system in the state of Haryana.

Intake of average number of standard drinks on a drinking day was reported to be 3.2 ± 1.8 in our study. However, IDSP risk factor surveyreported average standard drinks on a drinking day ranged from a low of 1.8 in Mizoram to 3.3, 4.7 and 8.1 in Andhra Pradesh, Tamil Nadu and Uttarakhand respectively.[16] This difference might be attributed to variation in socio-cultural pattern in different parts of India.Our study revealed that the mean age for initiation of drinking was 24 years, while Basu et al reported corresponding figure as 18 years.[12]

On logistic regression analysis, our study reported that the prevalence of current alcohol intake among labourers and in service class were about 3 times (aOR: 2.68; 95% CI: 1.55-4.65, p=0.000) and 0.83 times (aOR: 0.83; 95% CI: 0.41-1.67, p=0.622) respectively than those who had no occupation (reference) whereas Sugathan et al reported that unskilled workers were around two times (aOR: 1.5; 95% CI: 1.2-1.9) more indulged than professionals (reference) in this unhealthy habit.[14]

In the present study, association of occupation, educational and socioeconomic status with current alcohol intake was found to be statistically significant. The prevalence of current alcohol consumption was highest in graduate and above category (28.5%) considering it as a symbol of social status and lowest in illiterate (12.3%) as the majority in this category in our study were females who were housewives and socially females were negligibly involved in alcohol consumption. Regarding association of alcohol consumption with occupation, it was observed to be highest in labourers (32.6%) and service class (28.5%).In contrast to our study, IDSP NCD risk factor survey reported prevalence of alcohol consumption to be high with lower levels of education. This survey also reported the prevalence of alcohol intake in some of the occupational categories was high; manual worker (44%, 33% and 26%) and service class (31%, 27% and 23%) in Kerala, Andhra Pradesh, Maharashtra respectively, which was comparable to our study.[16]The Pseudo-belief of labourers to get relieved from exertion, they get involved in consumption of cheaper alcoholic products.

Our study reported the prevalence of current alcohol consumption was highest among upper-middle (44.0%) followed by upper (40.0%), middle (20.9%), lower-middle (14.7%) and lower socio-economic status (12.1%).In contrast to our study,Kinra et al reportedprevalence of alcohol intake was more in low socioeconomic group (Males: 33.7%; Females: 11.2%) as compared to middle (Males: 26.9%; Females: 8.1%) and high socioeconomic group (Males:

20.2%; Females: 2.5%).[17]This difference was because of the sample size in our study, as only 1.4% of the study population constituted upper socio-economic category and majority (nearly 80%) of the subjects in middle and lower middle category.

Conclusion

In-spite of various governmental health efforts like health education campaigns, enactment in the direction of cessation of alcohol use, significant achievement could not have been made in this field so far. Our study confirmed the high prevalence of alcohol use in rural areas and reiterated the need to address these issues comprehensively as a part of NCD prevention and control strategy. According to the results of this study, it appeared highly imperative that multidisciplinary healthcare professionals must address alcohol use as a NCD risk factor in their daily clinical practice at all levels.

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Table 1: Prevalence of Current-alcohol use among study participants by age groups & gender.

Age group (years)	Current Alcohol users		
	Male (n=540)	Female (n=540)	Total (N=1080)
15-24	22/108 (20.4)	0/108 (0)	22/216 (10.2)
25-34	47/108 (43.5)	0/108 (0)	47/216 (21.8)
35-44	52/108 (48.1)	1/108 (0.9)	53/216 (24.5)
45-54	39/108 (36.1)	0/108 (0)	39/216 (18.1)
55-64	39/108 (36.1)	3/108 (2.8)	42/216 (19.4)
Total	199/540 (36.9)	4/540 (0.7)	203/1080 (18.8)
χ^2	20.6	8.56	16.5
p value	0.000	0.073	0.002

(Figures in parentheses indicate percentages)

Table 2: Age of initiation for Alcohol intake

Variables		MEAN ± S.D	MEDIAN (IQR)
Age of initiation for alcohol use	Male	23.93 ± 4.329	22 (20-25)
	Female	26.33 ± 5.246	25 (22-30)
	Total	24.03 ± 8.279	22 (20-26)

Table 3: Frequency of Alcohol intake among current alcoholics

Frequency	Current alcohol users	Percent
5-7 days/week	54	26.6%
1-4 days/week	27	13.3%
1-3 days/month	81	39.9%
<once/month in one year	41	20.2%
Total	203	100%

Table 4: Average standard drinks and duration of alcohol intake among current alcoholics

Variables		MEAN ± S.D	MEDIAN (IQR)
Average standard drinks (on a drinking day) (N=203)	Male	3.23 ± 1.808	3 (2-4)
	Female	2.00 ± 0.000	2 (2-2)
	Total	3.21 ± 1.798	3 (2-4)
Duration of alcohol (years)		17.40 ± 12.77	14 (6-27)

Table 5: Independent association of socio-demographic variables with current alcohol consumption (Logistic Regression analysis) (N=1080).

Variables	Current alcoholic		
	Prevalence (%)	aOR (C.I.)	p value
Gender			
Female	4 /540 (0.7)	Reference	
Male	199/540 (36.9)	88.59 (32.05-244.89)	0.000
Age group (years)			
15-24	22/216 (10.2)	Reference	0.000
25-34	47/216 (21.8)	2.37 (1.22-4.61)	0.010
35-44	53/216 (24.5)	3.02 (1.53-5.96)	0.001
45-54	39/216 (18.1)	1.84 (0.94-3.61)	0.077
55-64	42/216 (19.4)	2.63 (1.37-5.03)	0.003
Occupation			
None	46/475 (9.7)	Reference	0.000
Labourer	70/215 (32.6)	2.68 (1.55-4.65)	0.000
Caste occupation	2/13 (15.4)	0.3 (0.06-1.49)	0.141
Business	7/30 (23.3)	0.63 (0.23-1.68)	0.360
Independent	15/83 (18.1)	0.48 (0.22-1.01)	0.054
Cultivation	22/120 (18.3)	0.38 (0.19-0.78)	0.008
Service	41/144 (28.5)	0.83 (0.41-1.67)	0.622
Socio-economic status			
Lower	18/149 (12.1)	Reference	0.008
Lower middle	70/477 (14.7)	0.84 (0.40-1.77)	0.906
Middle	73/364 (20.1)	1.64 (0.74-3.64)	0.934
Upper middle	33/75 (44.0)	3.36 (1.21-9.32)	0.946
Upper	6/15 (40.0)	7.39 (1.38-39.36)	0.001

Table 6: Comparison of various quantitative variables with current alcohol users (N= 1080).

Variables	Current Alcohol users (N=203)	Current Alcohol non-users (N=877)	p value
Weight (kgs)	64.51 ± 13.81	57.97 ± 12.67	0.000
Height (cms)	167.78 ± 7.08	158.73 ± 9.11	0.000
BMI (kg/m^2)	22.93 ± 4.89	23.01 ± 4.79	0.831
SBP (mmHg)	125.14 ± 16.50	119.24 ± 17.60	0.000
DBP (mmHg)	83.22 ± 13.75	77.83 ± 10.59	0.000
WC (cms)	88.53 ± 12.49	85.14 ± 12.48	0.001
Age (years)	40.60 ± 13.76	39.09 ± 14.61	0.181