Research Article

Prevalence and predictors of tobacco and alcohol use among adults in rural area of Varanasi district

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ABSTRACT

Background: What is the extent of tobacco and alcohol use among adults in a rural area of Varanasi district? **Objectives**: To estimate the prevalence of tobacco and alcohol use among adults in a rural area and the factors associated with it. **Materials and Methods:** A community-based cross-sectional study was conducted in Chiraigaon Development Block of Varanasi district. 201 adults were included in the study. Data were collected by house-to-house survey. The World Health Organization STEPwise tool was used as the study instrument to assess the behavioral risk factors. Simple proportions were calculated and Chi-square and logistic regression was applied for statistical significance using SPSS Version 17. **Results:** Overall, the prevalence of tobacco use was 46.3%. About one-third of the females were using tobacco users. 15.9% of the subjects were current alcohol consumers. 31 out of 32 alcoholics were tobacco users. **Conclusion:** The study showed a high burden of tobacco and alcohol use was high in rural area.

KEY WORDS: Tobacco Use; Alcohol Use; Non-communicable Diseases

INTRODUCTION

The second half of the 20th century has witnessed major health transitions in the world. Among these transitions, the most globally pervasive change has been the rising burden of non-communicable diseases (NCDs).[1] This high burden of NCDs is more in developing countries. The NCD does not occur in isolation. Many of the NCDs occur due to complex chains of events spanning over long periods of time. Alcohol and tobacco use being a major cause among it.[2]

Tobacco is cultivated in many parts of our country and can be purchased legally. The dried leaf of the plant is used for smoking, chewing, or snuff. Tobacco use causes increased risk of mortality from lung cancer, upper aerodigestive cancer, several other cancers, heart disease, stroke, chronic respiratory disease, and a range of other medical causes.[3] In India, tobacco consumption is responsible for half of all cancers in men and a quarter of all cancers in women.[4] The World Health Organization (WHO) predicts that tobacco deaths in India may exceed 1.5 million annually by 2020.[1]

Alcohol has been consumed in human populations for millennia, but the considerable and varied adverse health effects, as well as some benefits have been characterized recently.[5] Global alcohol consumption has increased in recent decades, with most or all of this increase occurring in developing countries. Overall, there are causal relationships between average alcohol consumption and around 60 types of diseases and injury. Besides, the direct effects of alcohol intoxication and addiction, it is estimated to cause about 20–30% of esophageal cancer, liver cancer, cirrhosis of liver, homicide, epilepsy, and motor vehicle accidents.[6]

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Affluence, improving socioeconomic conditions, and changed lifestyles have caused an increase of consumption of tobacco and alcohol use. In fact, the life patterns of people residing in the proximity of cities are atypical in the sense that these are neither rural nor urban. With this background, this study was undertaken in selected villages of Chiraigaon Community Development Block of Varanasi district to study the prevalence of tobacco and alcohol use in a rural community and to assess the various factors associated with it.

MATERIALS AND METHODS

This was a community-based cross-sectional study. The study was a part of research work done to ascertain the risk factors of NCDs in a rural area of Varanasi district. This was carried out in the field practice area of the Department of Community Medicine, Institute of Medical Sciences, Varanasi, among adults aged 18–64 years. The study was approved by Ethics and Research Committee before its implementation. Assuming the prevalence of tobacco and alcohol consumption to be 50% and 15% as the permissible level of error, the sample size worked out to be 171. Considering the non-response rate at 20%, the sample size was fixed at 205.

For this study, multistage sampling technique was used. In the first stage, Chiraigaon development block was identified as the study block. The villages of community development block were stratified according to the distance from the block headquarter. From the first stratum of villages within 5 km, one village was selected by simple random sampling. Adopting the same approach, one village was selected from the second stratum. The family selection was based on probability proportion to size technique. 123 families were obtained from the first village (total population - 5974, 981 families) and 78 families were obtained from the second village (total population - 3778, 620 families). One male and one female from alternate families were selected. The selection of male or female from the list of eligible in the house was done in a random manner. If required, the household was revisited a 2nd time. In total, 201 subjects were selected for the study. A predesigned and pretested questionnaire based on the WHO STEPS was used for documentation of sociodemographic variables as well as behavioral patterns in terms of tobacco and alcohol consumption. The data, thus, generated were analyzed using SPSS Version 17 and statistical association of different parameters was tested.

Study Variables

Current daily smoker was defined as those who were currently smoking cigarettes, bidis, or hookah daily. Current daily smokeless tobacco users were defined as those who were currently using chewable tobacco products such as gutka, naswar, khaini, zarda paan, or sunghni daily. Current alcohol drinkers were defined as those reported to consuming alcohol within past 1 year. One standard drink was equivalent to consuming one standard bottle of regular beer (285 ml), one single measure of spirit (30 ml), or one medium size glass of wine (120 ml).

RESULTS

Of 201 study subjects, 88 were males while females were 113 in number. 60.7% of the subjects were in the age group 15–44 years. 39.8% of the subjects were educated high school and above. 135 subjects were from the joint family while two-third of the subjects belonged to other backward class (OBC) category. Majority of the females were engaged in domestic work. 24 subjects (11.9%) were government or non-government employees. 7% of the subjects belonged to social Class I, and at the same time, 52.2% of the subjects belonged to Class 4 and 5 categories (Modified BG Prasad).

Overall, the prevalence of tobacco use was 46.3% [Table 1]. 85 subjects were consuming smokeless tobacco among whom, 71.8% were tobacco chewers. Tobacco chewing was significantly ($P < 0.01$) more in males than in females. Gutka was used by 16.5% of the subjects while sunghni (snuff by mouth) was used by 23.5% [Table 2]. The minimum and maximum use of tobacco was observed in the age group 15–24 years and 55–64 years, respectively. The prevalence of tobacco consumption was more in unemployed group. There existed a significant difference between tobacco use and age, social class, and working status of study subjects. Although there existed no statistical difference between tobacco consumption and caste and years of schooling [Table 3].

Current alcohol consumption was to the extent of 15.9% in the study subjects. There existed a significant difference between alcohol consumption and age, caste, and working status of the study subjects [Table 3]. Of 93 subjects using tobacco, 31 (33.33%) were consuming alcohol currently; but 31 out of 32 (96.9%) alcoholics were tobacco users [Table 4].

The binary logistic regression analysis technique was used to examine and quantify the association between sociodemographic variables and prevalence of tobacco and alcohol use. The subjects of age group below 34 years and between 35 and 54 years were at lesser risk of tobacco and alcohol consumption than with subjects with age of more than 54 years. Subjects belonging to OBC and other caste category showed lower risk of both tobacco and alcohol consumption in comparison to SC category. In comparison to non-working subjects, the working people were observed to be more than 2-time higher risk of tobacco use while the scenario was reversed with alcohol consumption. Females were found to have lower chance of developing risk of both tobacco use and alcohol use in comparison to males [Tables 5 and 6].

Table 1: Prevalence of tobacco and alcohol use among study subjects

Pattern of use	*n* (%)		Total	*P* value
	Male (88)	Female (113)		
Tobacco use	60 (68.2)	33 (29.2)	93	χ^2=30.23, *P*<0.01
Current alcohol consumption	30 (34.1)	2 (1.8)	32	χ^2=38.69, *P*=0.001

Table 2: Distribution of smokeless tobacco use according to sex (*n*=85)

Type of smokeless	Male	Female	Total	Test of significance
Tobacco use	*n*	*n*		
Snuff by mouth	07	13	20	χ^2=9.18; df=1; *P*<0.01
Chewing tobacco	44	17	61	χ^2=6.89; df=1; *P*<0.01
Betel	23	09	32	χ^2=1.54; df=1; *P*>0.05
Gutka	10	04	14	χ^2=0.45; df=1; *P*>0.05

Table 3: Distribution of study subjects with sociodemographic variables

Variable	Tobacco use (93) *n* (%)	*P* value	Alcohol consumption (32) *n* (%)	*P* value
Age group				
15–24	06 (6.45)	χ^2=27.62; *P*=0.000	0 (0)	χ^2=12.44; *P*=0.014
25–34	20 (21.5)		09 (28.12)	
35–44	18 (19.3)		05 (15.62)	
45–54	20 (21.5)		07 (21.8)	
55–64	29 (31.1)		11 (34.3)	
Caste				
SC/ST	19 (20.4)	χ^2=2.72; *P*=0.257	10 (31.2)	χ^2=8.69; *P*=0.01
OBC	49 (52.7)		18 (56.2)	
Others	25 (26.8)		04 (12.5)	
Social class				
Class 5	18 (19.35)	χ^2=11.71; *P*=0.002	08 (25)	χ^2=4.497; *P*=0.213
Class 4	28 (30.1)		09 (28.12)	
Class 3	23 (24.73)		08 (25)	
Class 2	18 (19.3)		07 (21.8)	
Class 1	06 (6.4)			
Total years of schooling				
No formal schooling	26 (27.9)	χ^2=3.397; *P*=0.183	9 (28.12)	χ^2=0.502; *P*=0.77
<10 years of school	36 (38.7)		12 (37.5)	
More than 10 years of schooling	31 (33.3)		11 (34.3)	
Work status				
Government and non-government	10 (10.75)			
Employee				
Self-employed	40 (43.01)	χ^2=63.75; *P*<0.01	21 (65.6)	χ^2=23.02; *P*=0.0001
Non-paid and student				
Homemaker	30 (32.25)		02 (6.25)	
Unemployed	13 (13.97)		09 (28.12)	

OBC: Other backward class

DISCUSSION

Tobacco use has significant association with occurrence of NCDs. A prevalence of 11.4% of smoked tobacco in this study was less than the National Family Health Survey (NFHS) 3 report.[7] Contrary to the observation of present study, some researchers have reported higher figures of prevalence of smoking in rural areas.[8] This study had the prevalence of smokeless tobacco use (42.3%) which is more than the NFHS 3 data.[7] Nearly, two-third of the male

subjects were consuming tobacco in any form and about 3 out of 10 females were also belonging to the same category. The figure of tobacco use by female was higher than the NFHS report[7] as well as Haryana study.[8]

Our study shows a rising trend of tobacco use with advancing age. Similar trend has been observed in the study conducted in Haryana[8] and NFHS 3.[7] It is a common belief among the masses that tobacco products act as a mood elevator and can serve as a remedy for stress and strain. It is also taken for enjoyment and there may be influence of peers also. High level of tobacco uses among employed and self-employed groups support this statement.

Alcohol consumption is a long tradition, but its adverse health effects are being substantiated now.[5] Although the prevalence of alcohol consumption in the study has been more than the rural Kerala,[9] this was less than the figure reported from Haryana.[8] Haryana is known for high alcohol consumption and several initiatives have been taken to curb this social meniscus. As per prevailing norms in Kerala[9] and Haryana,[8] in this study too, less consumption of alcohol has been observed in female subjects which were similar to NFHS 3 (i.e., 2%).[7]

It is understandable that habit of alcohol consumption is inculcated at younger age, and in any community, its number increases in the higher age group. In this zone of the country, alcohol consumption is a caste-based phenomenon and may be consumed as a tension reliever, particularly in the unemployed and the retired persons. It appears that these factors are more conspicuous than social class and education. Majority of alcoholics were tobacco users whereas reverse of this was not true.

Table 4: Tobacco use and current alcohol consumption

Tobacco use	Current alcohol consumption, *n* (%)		Total
	Present	Absent	
Present	31 (33.3)	62 (66.6)	93
Absent	1 (1)	107 (99.0)	108
Total	32 (15.9)	169 (84.1)	201

χ^2=39.206; *P*=0.000

Table 5: Results of logistic regression for tobacco and alcohol consumption

Variables	Tobacco consumption		Alcohol consumption	
	OR (95% CI)	*P* value	OR (95% CI)	*P* value
Age (years)				
≤34	0.118 (0.037–0.381)	0.000	0.257 (0.058–1.143)	0.074
35–54	0.332 (0.118–0.933)	0.037	0.688 (0.193–0.460)	0.566
>54*				
Caste				
SC/ST*				
OBC	0.363 (0.127–1.037)	0.059	0.402 (0.106–1.52)	0.180
Others	0.264 (0.076–0.919)	0.036	0.071 (0.012–0.420)	0.004
Total years of schooling				
No education	2.154 (0.654–7.09)	0.207	2.29 (0.46–11.42)	0.311
1–10	4.062 (1.47–11.18)	0.007	3.42 (1.01–11.64)	0.048
>10*				
Social class				
Upper	0.693 (0.269–1.679)	0.449	0.741 (0.188–2.92)	0.668
Middle	0.497 (0.167–1.481)	0.210	0.577 (0.130–2.55)	0.468
Lower*				
Working status				
Working	2.283 (0.949–5.490)	0.65	0.674 (0.213–2.133)	0.502
Not working*				
Type of family				
Nuclear	1.665 (0.740–3.748)	0.218	1.78 (0.551–5.768)	0.335
Joint*				
Sex				
Male*	0.172 (0.062–0.480)	0.001	0.015 (0.002–0.095)	0.000
Female				

*Is the reference category. OR: Odds ratio, CI: Confidence interval, OBC: Other backward class

CONCLUSION

The association of tobacco and alcohol use with a spectrum of disease is a well-established fact. In general, intake of tobacco and alcohol begins at the adolescent age and increases with age. This trend can be changed by anti-smoking drive and other educational efforts. This study reflects that initiatives for curtailing tobacco and alcohol use should be contemplated as early as possible.

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