Research Article

Prevalence and determinants of alcohol consumption among adult men in a coastal area of South India

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Received October 10, 2014. Accept November 6, 2014

Abstract

Background: Globally, harmful use of alcohol results in approximately 2.5 million deaths each year. Almost 4% of all deaths worldwide are attributed to alcohol. Prevalence of alcohol consumption is on a continuous rise in India.

Objectives: To measure the prevalence and determinants of alcohol consumption among adult men in a coastal area of Pondicherry.

Material and Methods: A community-based cross-sectional study was carried out at Kalapet, a coastal area in Pondicherry that comes under the field practice area of Department of Community Medicine, Pondicherry Institute of Medical Sciences. Study population consisted of 500 men aged 18 and above. A systematic random sampling was used for sample selection. The study was conducted during January 2013 to December 2013. Data were collected by house-to-house survey using a predesigned questionnaire. Data were analyzed using SPSS, version 16.0. Simple proportions were calculated and χ^2-test was applied for statistical significance. A p-value <0.05 was considered as statistically significant.

Results: The prevalence of alcohol consumption was found to be 59.6%. Factors such as lower literacy level, having family history of alcohol consumption, and cigarette smoking were found to be positively associated with alcohol consumption.

Conclusion: The prevalence of alcohol consumption was found very high in Pondicherry compared to national levels.

KEY WORDS: Alcohol, prevalence, determinants of drinking, coastal area

Introduction

Alcohol is the common name given to organic compounds having hydroxyl group linked to a carbon atom. In everyday life, alcohol refers to any beverage containing ethanol or ethyl alcohol. It is available in many forms with beer being the third most popular drink throughout the world next to water and tea. A WHO report[1] states that worldwide per capita consumption of alcoholic beverages in 2010 was equal to 6.2 liters of pure alcohol consumed by every person aged 15 years or older. Approximately 2.3 million people die each year from the harmful use of alcohol, accounting for approximately 3.8% of all deaths worldwide. More than half of these deaths occur from noncommunicable diseases including cancers, cardiovascular disease, and liver cirrhosis. Although adult per capita consumption is highest in high-income countries, it is nearly as high in the upper-middle-income countries. An estimated 4.5% of the global burden of disease—as measured in disability-adjusted life years—is caused by harmful use of alcohol.[2]

The India, which was considered as one of the countries with tradition of abstinence, is a thing of past. Alcohol consumption has now become a social activity and is accepted as a casual behavior. A nationwide survey on drug abuse showed that the prevalence of alcohol consumption was 21% among men and 2% among women in India.[3] Though this is less compared to international statistics, half of them fall under hazardous category and one-fifth are dependent drinkers. Spirit accounts for 95% of the alcohol consumed in India, and drinking heavily and frequently has become signature pattern among Indians, which is of a serious health concern.

Alcohol leads to a number of health problems, both acute and chronic. Among the acute problems, the most important are accidents and injuries. Alcohol is a central nervous system depressant that leads to loss of inhibition, impaired sense of judgment, blurring of vision etc. This is the reason why accidents and injuries are common among alcohol consumers. A hospital-based study has shown that 60% of all injuries

Access this article online	
Website: http://www.ijmsph.com	Quick Response Code:
DOI: 10.5455/ijmsph.2015.1010201479	

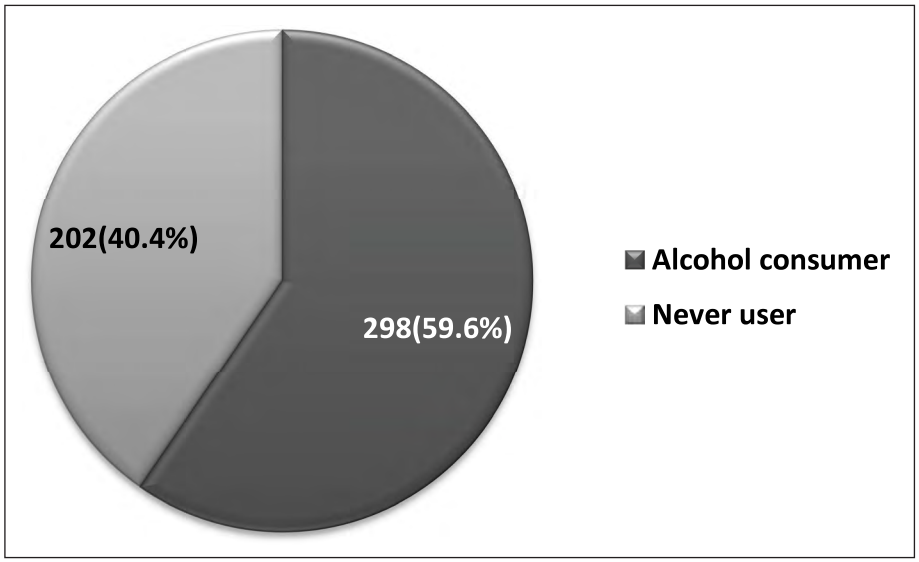

Figure 1: Prevalence of alcohol consumption among study participants (*n* = 500)

reporting to emergency ward are due to alcohol usage,[4] and another study has shown that 18% of all brain injuries reporting to emergency ward are attributed to alcohol usage.[5] A number of factors are associated at the individual and social levels to determine the magnitude and pattern of alcohol consumption and alcohol use disorders such as age, sex, familial factors, drinker's behavior, alcohol exposure (volume, patterns, and quality of alcohol consumed), economic development, culture, and existing alcohol-related policies.[6]

Alcohol consumption has become one of the most important public health problems in recent days. Hence, knowing the prevalence and determinants of alcohol consumption is essential to suggest control measures. The current study was conducted to measure the prevalence and determinants of alcohol consumption among adult men.

Material and Methods

Study setting

This community-based cross-sectional study was conducted in Kalapet, a coastal area in Pondicherry (South India). It included the following four areas—Kanagachettikulam, Chinnakalpet, Periyakalapet, and Pillaichavady. The study area has a population of 17,000 with 6,000 houses. Main occupation in the study area is fishing followed by agriculture. The study was conducted during January 2013 to December 2013. Study population consisted of adult males aged 18 years and above who were living in the study area for more than 1 year. On the basis of 46.7% prevalence of alcohol consumption among males as reported by John et al.,[7] for 5% a error and 10% acceptable deviation, sample size was calculated to be 456. It was rounded to 500. Systematic random sampling was used to select the study participants. With 6,000 houses and sample size of 500, the sampling interval was calculated to be 12. The first house in each area was selected randomly and then every 12th house was selected for the study. One male member from each house (preferably head of the household) was included in the study. If the house was locked or a male member was not available at the time of visit, the adjacent house was selected for the study.

Data collection

All the participants were interviewed using a pretested and predesigned questionnaire. A pilot study was conducted before data collection to identify the difficulties in carrying out this study, and changes were made in the questionnaire accordingly. Details regarding sociodemographic characteristics, alcohol consumption and related habits, smoking history, and paternal history of alcohol consumption were collected from the participants. Individuals with history of alcohol consumption (both current and past) were considered as ever drinkers and individuals who had never consumed an alcoholic drink in their lifetime were considered as never consumers. Socioeconomic status of the participants was assessed using Modified Kuppuswamy's Socioeconomic Scale 2013. Data were collected by house-to-house visit and one-to-one interview by the investigator. All the details were collected in local language (Tamil) and entered in English by the investigator.

Statistical methods

Data were analyzed using SPSS, version 16.0, and proportions were calculated. c2-Test was applied to find significant difference in proportions, and p-value of <0.05 was considered statistically significant. Association was expressed in odds ratio with 95% confidence interval.

Ethical considerations

The study was approved by the institute ethics committee of the Pondicherry Institute of Medical Sciences. A written

Table 1: Sociodemographic characteristics of the study participants (n = 500)

Sociodemographic characteristics	Frequency (%)
Age group	
21–30	122 (24.4)
31–40	189 (37.8)
41–50	103 (20.6)
>50	86 (17.2)
Educational status	
Graduate and above	54 (10.8)
Higher secondary	66 (13.2)
High school	133 (26.6)
Middle	84 (16.8)
Primary	109 (21.8)
Illiterate	54 (10.8)
Occupational status	
Semi-professional	18 (3.4)
Shop-owner, clerk, etc.	52 (10.6)
Skilled	37 (7.4)
Semi-skilled	153 (30.6)
Unskilled	191 (38.2)
Unemployed	49 (9.8)
Socioeconomic status	
Upper middle	114 (22.8)
Lower middle	124 (24.8)
Upper lower	202 (40.4)
Lower	60 (12.0)

informed consent was obtained from all participants before collecting data. For this purpose, a participant information sheet (in Tamil) indicating the purpose of the study, procedure of maintaining confidentiality, and right to not to participate in this study was provided to the participants. Health education regarding the ill effects of alcohol consumption was given to all alcohol consumers who had participated in this study.

Results

Out of 500 adult men interviewed in this study, maximum (37.8) were in age group 31–40 and majority (80.2%) were married. Maximum (26.6%) of the study participants had studied up to high school and approximately 40.4% belonged to upper lower class. The prevalence of alcohol consumption was found to be 59.6% (95% CI 55.4–63.8).

The proportion of alcohol consumers was more in age group 41–50 and the individuals in this age group had 2.4 times more risk to be an alcohol consumer compared to those belonging to age group 21–30. Individuals with lower educational status had higher risk to be an alcohol consumer compared to graduates. Illiterate individuals had 5.7 times more risk and those with up to primary education had 12.5 times more risk to be an alcohol consumer.

Smokers were found to have 3.1 times more risk (OR = 3.1, 95 CI = 2.1–4.5) to be an alcohol consumer compared to nonsmokers. It was also found that individuals having paternal history of alcohol consumption had 3.5 times more risk (OR = 3.5, 95% CI = 2.3–5.5) to be an alcohol consumer compared to those without paternal history.

Discussion

Our study found that the prevalence of alcohol consumption among adult men was 59.6% (95% CI 55.4–62.8) in the coastal area of Pondicherry. A population-based study by Kaur et al.[8] in 11 villages of Tamil Nadu found the prevalence of alcohol consumption to be 69.8% among 497 men aged 25–64 years. A cross-sectional study conducted in rural Goa by Dhupdale et al.[9] among 410 subjects reported that the overall prevalence of alcohol consumption was 49% whereas the prevalence among males was 72%. A study by John et al.[7] conducted in a rural area of Vellore, Tamil Nadu, found the prevalence of alcohol consumption among 345 men aged above 18 years to be 46.7%.

In our study, 69.9% of individuals in the age group 41–50 (OR = 2.4, 95% CI = 1.3–4.1) and 62.8% of individuals in the age group 51–60 (OR = 1.7, 95% CI = 0.9–3.1) were found to be alcohol consumers. Similarly, in the study carried out by Dhupdale et al.[9], the prevalence of alcohol consumption showed a peak near age 40. They found that 58.3% individuals in age group 45–54 and 50% in age group 54–65 were alcohol consumers. In a study by John et al.,[7] age more than 40 years was found as risk factor for hazardous alcohol use (OR = 2.6, 95% CI = 1.35–5.03). Fathima et al.[10] carried out a study in rural Bangalore and found that prevalence of alcohol consumption was higher (43.1%) in the age group 41–60 compared to other age groups.

In this study, we found that the proportion of alcohol consumption was higher among persons with lower educational status. Primary education group (OR = 12.5, 95% CI = 5.7–27.4) and illiterate individuals (OR = 5.7, 95% CI = 2.4–13.1) were at a higher risk of becoming alcohol consumers as compared to higher educational groups. The study by John et al.[7] found that having more than 6 years of school education was a protective factor against hazardous alcohol use (OR = 0.39, 95% CI = 0.21–0.72). In the study carried out by Kaur et al.[8], illiterate individuals and persons with education up to 5 years were found to be at a greater risk of becoming alcohol consumer (OR = 2.4, 95% CI = 1.4–2.9).

In this study, smokers were found to have higher risk for alcohol consumption compared to nonsmokers (OR = 3.3, 95% CI = 1.8–5.8). Kaur et al.[8] also found similar association between smoking and alcohol consumption (OR = 3.2, 95% CI = 2.9–4.3). The study undertaken by Dhupdale et al.[9] also found the positive association between tobacco use and alcohol consumption (OR = 1.89, 95% CI = 1.2–3.0). Similar finding was also reported in a study conducted by Ganesh Kumar et al.[11] in a rural area of Tamil Nadu. They found that

Table 2: Determinants of alcohol consumption among study participants (*n* = 500)

	Alcohol consumption		Odds ratio (95% CI)	p-Value
	Yes	No		
Age group				
21–30	60 (49.2)	62 (50.8)	Reference	
31–40	112 (59.3)	77 (40.7)	1.5 (0.9–2.3)	
41–50	72 (69.9)	31 (30.1)	2.4 (1.3–4.1)	0.015
>50	54 (62.8)	32 (37.2)	1.7 (0.9–3.1)	
Educational status				
Graduate and above	18 (33.3)	36 (66.7)	Reference	
Higher secondary	28 (42.4)	38 (57.6)	1.4 (0.7–3.1)	
High school	68 (51.1)	65 (48.9)	2.1 (1.2–4.1)	
Middle	50 (59.5)	34 (40.5)	2.9 (1.4–6.1)	0.0001
Primary	94 (86.2)	15 (13.8)	12.5 (5.7–27.4)	
Illiterate	40 (74.1)	14 (25.9)	5.7 (2.4–13.1)	
Socioeconomic status				
Upper middle	46 (40.4)	68 (69.6)	Reference	
Lower middle	90 (72.6)	34 (27.4)	3.9 (2.2–6.7)	
Upper lower	120 (59.4)	82 (40.6)	2.1 (1.3–3.4)	0.001
Lower	42 (70.0)	18 (30.0)	3.4 (1.7–6.7)	
Smoking				
Yes	154 (74.7)	52 (25.3)	3.1 (2.1–4.5)	0.0001
No	144 (48.9)	150 (51.1)		
Paternal history of alcohol consumption				
Yes	120 (78.9)	32 (21.1)	3.5 (2.3–5.5)	0.0001
No	178 (51.1)	170 (48.9)		

smokers had very high risk of alcohol consumption (OR = 17.7, 95% CI = 8.2–38.1).

In this study, it was found that having paternal history of alcohol consumption was a risk factor for alcohol consumption (OR = 2.1, 95% CI = 1.1–3.7). Similarly, Dhupdale et al.[9] reported that having an alcoholic father was a risk factor for being an alcohol consumer (OR = 2.8, 95% CI = 1.8–4.5). The study by John et al.[7] also reported positive family history of alcohol consumption as a risk for alcohol use, but it was not significant (OR = 1.57, 95% CI = 0.72–3.44). Meena et al.[12] in their study conducted in Rohtak found that 23.16% of alcohol users had an alcoholic father and 7.5% had alcoholic grandfather.

Conclusion

Prevalence of alcohol consumption was found to be high in the study area. Individuals with lower education had the highest risk to be an alcohol consumer compared to those with higher educational status. Smoking and paternal history of alcohol consumption were found to be significantly associated with alcohol consumption. Measures to improve the educational status of the community should be initiated by government, which can control the problem of alcoholism to some extent. Health education and behavior change strategies should be developed for the alcoholics and all health-care providers should be trained in this field.

Strengths and limitations

This was a community-based study, and all the participants were interviewed at their houses by a single investigator. This reduced the chance for interviewer bias and selection bias. Alcohol consumption habits were self-reported by the participants, so there could be a chance for recall bias.

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How to cite this article: Easwaran M, Bazroy J, Jayaseelan V, Singh Z. Prevalence and determinants of alcohol consumption among adult men in a coastal area of South India. Int J Med Sci Public Health 2015;4:360-364

Source of Support: Nil, **Conflict of Interest:** None declared.