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Pattern of Drinking, Dependence and Morbidity among Male Alcohol Consumers in a Coastal Area of South India.

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ABSTRACT

Background: Alcohol consumption causes around 2.5 million deaths each year globally. Almost 4% of all deaths worldwide are attributed to alcohol consumption. **Objectives:** To measure the prevalence of alcohol consumption among adult males and to determine the pattern of drinking, prevalence of dependence and morbidity among alcohol consumers. Materials and Methods: Study design-Cross sectional study. Study area- Kalapet, a coastal area in South India. Sample size- 500. Sampling method- Systematic random sampling. Study population- Adult males aged above 18 years. Data collection- Done by house to house survey using predesigned and pretested questionnaire. Ethical considerations- Approved by PIMS institutional ethical committee. A written informed consent was taken from each study participant before data collection. **Results:** Prevalence of alcohol consumption was 59.6%. Among alcohol consumers around 27.5% (82) reported that they consume alcohol 2-3 days in a week and 26.5% (79) reported daily consumption. More than half (53.1%) of the alcohol consumers were heavy drinkers. Around 18.1% of alcohol consumers had hepatomegaly and 9.1% had hepato-spleenomegaly. Prevalence of alcohol dependence syndrome was found as 17.7% among 298 alcohol consumers. **Conclusion:** Prevalence of heavy drinking and alcohol dependence was found to be high among alcohol consumers. Community based screening programme for identification of alcohol dependence and alcohol related morbidity should be developed.

Key-words: Alcohol, dependence, morbidity, 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. Alcohol is one of the oldest known drink the usage of which dates back to 7000 B.C. Due to globalization and innovative marketing techniques the prevalence of alcohol consumption had increased in the last decade to a great extent. Manufacturers are targeting particularly young people so that they can be lifelong consumers. Such long term alcohol consumption will affect almost all visceral organs such as liver, kidney, heart and gastrointestinal tract. The major chronic diseases associated with hazardous drinking are alcoholic liver disease, diabetes mellitus, hypertension, cardiovascular disease, stroke, GIT cancers and alcohol dependence syndrome. Globally harmful use of alcohol results around 2.5 million deaths each year. Almost 4% of all deaths worldwide are attributed to alcohol which is greater than deaths caused by AIDS, tuberculosis or violence.[1] More than half of these deaths occur from NCDs including cancers, cardiovascular disease and liver cirrhosis. While adult per capita consumption is highest in high income countries and nearly as high as in the upper-middle-income countries. An estimated 4.5% of the global burden of disease – as measured in DALYs – is caused by harmful use of alcohol . Worldwide, alcohol causes more harm to males (6.0% of deaths, 7.4% of DALYs) than females (1.1% of deaths, 1.4% of DALYs) reflecting differences in drinking habits, both in quantity and pattern of drinking [2]. India which was considered as one of the countries with tradition of abstinence is a thing of past. A nationwide survey on drug abuse showed that the prevalence of alcohol consumption was 21% among men and 2% among women in India. 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 had become signature pattern among Indians which is of a serious health concern.[3] Because of frequent heavy consumption dependence among alcohol consumers had also increased alarmingly. Studies done in Bangalore[4] and Tamil Nadu[5] among alcohol users had shown the prevalence of dependence as 14.5% and 33.7% respectively. This study was planned to measure the prevalence of alcohol consumption among adult males and to determine the pattern of drinking, prevalence of dependence and morbidity among alcohol consumers residing in the field

practice area of Department of Community Medicine of Pondicherry Institute of Medical Sciences.

MATERIALS AND METHODS

This cross sectional study was conducted between Jan 2013 and December 2013 in Kalapet, a coastal area in Pondicherry (South India). Study area has a population of 17000 with 5800 houses and fishing is the main occupation of people residing in this area. Adult males aged above 18 years who are living in the area for more than one year were included in the study. Sample size was calculated based on 46.7% prevalence of alcohol consumption among males as reported in a study by John A et al[6] in Vellore assuming 5% alpha error and 10% deviation. It came to 456 and was rounded to 500. Systematic random sampling was used for selection of the study participants. With 5800 houses and the sample size of 500, the sampling interval was calculated to be 12. So every twelfth house was selected and one adult male from each house was interviewed. If the house was locked or a male member was not available at the time of visit, then the adjacent house was selected. One male member (preferably the head of the house) in every selected house was interviewed. Details regarding socio demographic profile and alcohol consumption habits were collected by interviewing the subjects with a pre-designed and pre tested questionnaire. A complete physical examination was done after the interview.

Operational definitions:

Persons were classified as current alcohol consumers if they had consumed at least one alcoholic drink in the past one year. One standard drink is defined as any drink with net alcohol content of 10 gm ethanol which is 30 ml of spirits (whisky, rum, brandy, gin, vodka or 330 ml (1/2 bottle) beer or 110 ml (1/3 bottle) strong beer or 15 ml of arrack.[7] Alcohol consumers were classified into light (<5 drinks), heavy (5-8 drinks) and very heavy drinkers (>8 drinks) based on the number of standard drinks consumed per episode.[7] Alcohol dependence was diagnosed using ICD-10 criteria[8] for alcohol dependence syndrome. It includes the symptoms of craving, loss of control, physiological withdrawal state, tolerance, salience and persistent use despite physiological or psychological harm. The presence of three or more of the above symptoms in the past one year is defined as alcohol dependence syndrome.

Ethical consideration

The study was initiated after obtaining the approval of PIMS Institutional Ethical Committee, Pondicherry. A written informed consent was taken from each study participant before data collection. For this purpose a participant information sheet indicating the purpose of the study, procedure of maintaining confidentiality and right to not to participate in this study was provided to the participants. Persons identified with alcohol dependence and other significant health problems were counselled and referred for further treatment. Adverse effects of alcohol consumption were explained to all the alcohol consumers.

RESULTS

Out of 500 adult males included in the study 298 were current alcohol consumers which gives the prevalence of alcohol consumption as 59.6%. Among alcohol consumers around 27.5% (82) reported that they consume alcohol 2-3 days in a week and 26.5% (79) reported daily consumption. Brandy was the most preferred spirit among alcohol consumers used by 43.9% (131) followed by beer which was used by 38.3% (114). More than half of alcohol consumers (53.1%) were heavy drinkers consuming 5-8 drinks per episode while 119(39.7%) were light drinkers consuming <5 drinks and 7.2% (21) were very heavy drinkers consuming > 8 drinks per episode. When asked the reason for alcohol consumption 36.9% (110) of the study respondents replied leisure and 35.2% (105) replied as workload. Peer pressure was reported by 9.1% (27) of them and 6.1% (18) told family problem. Around 12.7% (38) of them told that alcohol consumption had become their habit.(Table 1)

Table 1: Pattern of alcohol consumption among alcohol consumers (n=500)

Pattern	n (%)
Frequency	
Daily	79 (26.5)
2-3 days per week	82 (27.5)
Weekly once	71 (23.8)
Occasional	66 (22.2)
Type of alcoholic beverage	
Brandy	131 (43.9)
Beer	114 (38.3)
Arrack	83(27.8)
Whisky	37 (12.5)
Rum	16 (5.4)
Vodka	5 (1.7)
No of standard drinks per episode	
Light drinkers (< 5 drinks)	119 (39.7)
Heavy drinkers (5-8 drinks)	158 (53.1)
Very heavy drinkers (>8 drinks)	21 (7.2)
Reason for alcohol consumption	
Leisure	110 (36.9)
Workload	105 (35.2)
Habit	38 (12.7)
Peer pressure	27 (9.1)
Family problem	18 (6.1)

Out of 298 alcohol consumers, 19.5% (58) were known diabetes mellitus patients, 14.4% (43) were known hypertension patients and 3.7% (11) reported history of cardiovascular diseases. Around 16.1% of alcohol consumers reported history of accidents (either falls or road traffic) at least once under the influence of alcohol consumption. Around 34.2% (102) of the alcohol consumers had dental carries, 14.4% (43) had absent

tooth, 5.1% (15) had leukoplakia and oral ulcer was present in 1.3% (4) of alcohol consumers. Hepatomegaly was present in 18.1% (54) of them and hepato-spleenomegaly was present in 9.1% (27) of them. Prevalence of alcohol dependence syndrome was found as 17.7% among 298 alcohol consumers. More than one third of the alcohol consumers had at least one symptom of alcohol dependence i.e craving.(Table 2&3)

Table 2: Morbidity among adult male alcohol consumers (n=298)

Morbidity	n (%)
Diabetes mellitus	58(19.5)
Hypertension	43(14.4)
Cardiovascular diseases	11(3.7)
History of accidents	48(16.1)
Dental carries	102 (34.2)
Absent tooth	43 (14.4)
Leukoplakia	15 (5.1)
Oral ulcer	4 (1.3)
Jaundice	16 (5.4)
Hepatomegaly	54(18.1)
Hepato-spleenomegaly	27(9.1)
Sleep disturbances	62 (20.8)
Tremors	41 (13.8)

Table 3: Symptoms of alcohol dependence among alcohol consumers (n=298)

Symptoms	n (%)
Craving	112(37.5)
Loss of control	49 (16.4)
Physiological withdrawal	69 (23.2)
Tolerance	53 (17.8)
Salience	21 (7.0)
Persistent use despite harm	11 (3.7)
Alcohol dependence syndrome*	53(17.7)

*According to ICD-10 criteria, alcohol dependence is defined as 'presence of 3 or more symptoms mentioned above in the past one year'.

DISCUSSION

Our study found that the prevalence of alcohol consumption among adult males was 59.6% (95% CI between 55.4% and 62.8%). A NCD risk factor survey in Tamil Nadu among 5000 households showed the prevalence of male alcohol consumption in the past 12 months was 25.6% in urban areas and 32.7% in rural areas[7].Another cross sectional study in rural Goa by Dhupdale N[9] et al among 410 subjects found that the overall prevalence of alcohol consumption was 49% while among males the prevalence was 72%. The free availability of all types of alcoholic beverages from arrack to IMFL at cheaper price in the study area may be one of the reasons for this high prevalence.

In our study among 298 alcohol consumers 79 (26.5%) consume alcohol daily and 82 (27.5%) consume 2-3 times per week. In a study done by Vedapriya R[10] et al in a rural area of Kancheepuram district (Tamil Nadu) among 950 males aged above 30 years, 45.5% had alcohol consumption for at least three times in a week. We also found that among 298 alcohol consumers 53.1% were heavy drinkers consuming 5-8 standard drinks per episode and 7.2% were very heavy drinkers consuming more than 8 standard drinks. Similarly in the IDSP NCD risk factor survey[7] in Tamil Nadu it was found that 47.1% of alcohol consumers in urban area and 46.7% of alcohol consumers in rural area consume 5 or more standard drinks per episode.

In this study it was found that 18.1% of alcohol consumers have hepatomegaly and 9.1% had hepato-spleenomegaly. Alcohol is exclusively metabolized by liver so the oxygen free radicals released during alcohol metabolism affects the liver to a larger extent. Alcoholic Liver Disease is a distinct spectrum of disorders which begins with fatty change in liver and proceeds to hepatomegaly. Further alcohol use will lead to cirrhosis and liver failure and only half of such patients will survive for 5 years. Rehm J et al[11] in their review article found the relative risk for developing liver cirrhosis among heavy drinkers as 9.54. Subir Kumar D et al[12] in their review article had stated that 39% of the liver cirrhosis in men throughout the world is attributable to alcohol consumption. We also found that 5.1% of alcohol consumers had leukoplakia and 1.3% had oral ulcers. Similarly Rooban T et al[13] in their hospital based study found that 7.1% of alcohol users had leukoplakia. A review article by Subir Kumar D et al[12] had also stated that 22% of oral cancers among men worldwide are due to their alcohol use.

The prevalence of alcohol dependence syndrome was found as 17.7% among alcohol consumers based on ICD-10 criteria. Similarly the study by Fathima F et al[4] among males aged above 18 years in rural Bangalore found that among alcohol consumers dependence was present in 14.5%. A study by Ganesh Kumar S et al[5] in a rural area of Tamil Nadu had found that 33.7% of alcohol consumers had dependence.

Conclusion:

The above discussion about some of the most common morbidity pattern among alcohol consumers depicts the seriousness of alcohol consumption. Liver cell failure is one of the medical conditions requiring long term and costly treatment. The only mode of treatment at the end stage is liver transplantation. Availability of compatible liver is very difficult and the facility is available only at super specialty hospitals. Liver cell failure is a chronic process passing through various stages and when identified at initial stages of hepatomegaly can be treated completely. Hence screening activity among high risk individuals and intervention can prevent the progress of disease and can save many lives and also money.

The common occurrence of leukoplakia and oral ulcers among alcohol consumers shows that they are more prone

for oral cancers. Other studies had also reported similar results. Oral cancers are very difficult to treat and have high mortality rate. There are also cancers attributed to alcohol which are not included in this study such as gastric carcinoma. Again cancers are chronic diseases requiring sophisticated treatment facilities with poor success rate even when diagnosed at early stage. Primary prevention is the only way to tackle this problem.

Alcohol dependence is one of the most neglected health problems in our country. There is no screening facility for dependence and treatment is available only at limited sites. Most of the dependent patients don't know about their problem. Even if they know, they don't know how to get treatment. Public awareness regarding diagnosis and treatment for alcohol dependence should be increased through extensive health education activities.

Limitations:

This is a cross sectional study so a causal association between morbidity pattern and alcohol consumption cannot be made out. Alcohol consumption habits and symptoms were self reported by the participants and the authors cannot verify them. So there is chance for information bias.

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