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A SURVEY STUDY ON THE ALCOHOLIC DRINKING BEHAVIOUR AMONG ALCOHOL DEPENDENT PEOPLE SEEKING DE-ADDICTION TREATMENT IN HASSAN DISTRICT, KARNATAKA

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ABSTRACT

Background: Patterns and behaviours of drinking has a strong bearing on alcohol-related negative consequences. Only few studies have been conducted in this area in Karnataka state.

Aim: The current study aims to assess the alcoholic drinking behaviour among alcohol dependent people seeking de-addiction treatment in Hassan district, Karnataka.

Materials and Methods: This cross-sectional, observational study, after obtaining Institutional Ethics Committee clearance and CTRI approval, was conducted among 402 subjects who sought treatment for alcoholic addiction at different centres in Hassan district of Karnataka. Screening of the participants were done by the ICD 10 criteria for alcohol dependence and specified inclusion and exclusion criteria. Alcoholic drinking behaviours were obtained by a personalised in-depth, semi structured interview using specially designed questionnaire with each subject. Descriptive statistics in terms of frequency, percentage, mean with standard deviation were used to analyse and represent the obtained data.

Results: 52% of the subjects started consuming alcohol in 3rd decade of their life, and the most prominent reason behind first consumption was peer influence (38.1%). The most preferred alcoholic type was whisky (34.1%). 39.4% were consuming Indian Made Foreign Liquor (IMFL) in heavy mode and 67.7% consumed alcohol daily. It was also found that 65.2% followed binge drinking pattern. 54.7% consumed alcohol at bar and companions for consumption was equally distributed between solo drinking and social drinking. 60.9% of them reported of financial instability and some of them spent more on account of alcohol than their income.

Conclusion: A large proportion of the participants were suffering significantly from alcohol-related consequences and the patterns followed by majority of the participants were severe enough to cause serious health impacts. It emphasizes the need for more epidemiological studies and policy implementations in this area for prevention, management and rehabilitation.

Key words: Alcoholic dependence, Alcoholic drinking behaviours, Survey study

INTRODUCTION:

Alcohol is a potent drug that causes both acute and chronic changes in almost all neurochemical systems, with the result that heavy drinking can produce serious temporary psychological symptoms including depression, anxiety, and psychosis. Beverage alcohol (ethanol) is a product of fermenting fruit or grain .[1]The alcohol dependence syndrome is a cluster of physiological, behavioural, and cognitive phenomena in which the use alcohol takes on a much higher priority for a given individual than other behaviours that once had greater value.[2]

As per the National survey conducted regarding magnitude of substance use in India by the Ministry of Social justice and Empowerment in 2019; 14.6% of total population in the age group 10-75 were consuming alcohol; out of which about 2.7% affected by alcohol dependence. In Karnataka state 6.4% of total population in the age group 10-75 were consuming alcohol; out of which 40.3% drink alcohol in a dependent pattern. Alcoholic drinking behaviours refers to the quantity and frequency of consumption, type of beverage consumed, temporal variations in drinking, settings where drinking takes place, the activities associated with drinking, the reason for drinking etc.3 Drinking behaviour is generally associated with particular personal characteristics like personality traits, age, gender, and religion etc. Alcohol use contribute towards physical mental and social problems.

Absenteeism from work, job-related accidents, low employee productivity, road accidents, violence, and suicide are also possible outcomes of alcohol use. Severe problematic alcohol use also contributes to feelings of sadness and irritability, which contribute to suicide attempts and completed suicides. Alcoholic drinking behaviours are the important determinants of consequences of drinking which affects the quality of life. This survey aims at describing the drinking behaviour of people seeking de-addiction treatment which reflect the severity of alcoholic dependence in the society. Understanding the drinking behaviours could help in strengthening de-addiction programmes and health promoting activities in future. A number of research works have already been conducted on the alcoholic drinking behaviour and severity on the drinking behaviour among alcoholics of Hassan district of Karnataka.So, this survey of alcoholic addiction in different parts of India. But there are very few research works done was conducted with the objective to study the alcoholic drinking behaviour among alcohol dependent people seeking de- addiction treatment in different centres in Hassan district, Karnataka.

METHODS:

Study design:

The study was a cross-sectional health behaviour descriptive study among alcohol dependent people seeking de-addiction treatment in different centres of Hassan district in Karnataka. The Institutional Ethical Committee clearance numbered SDM/IEC/10/2019 was obtained following which CTRI approval numbered CTRI/2019/04/018772 was obtained. After screening each subject who are willing to sign the informed consent, with the ICD-10 diagnostic criteria for alcohol dependence, personalised indepth semi-structured interview with those qualifying the criteria was conducted to find out different attributes of drinking behaviour using a specially designed questionnaire. The data so collected was classified, analysed, presented and interpreted using descriptive statistical methods.

Sample size calculation:

The following formula was used for calculating the adequate sample size in cross-sectional study, where N is the sample size, Z is the statistic corresponding to the level of confidence, P is the expected prevalence and d is the precision.[4]

$$N=\frac{Z^2\,P(1-P)}{d^2}$$

Z = 0.95, P = 0.038, d = 0.0095

So total sample size N = 366 which is rounded off to 400.

Criteria for diagnosis:

A diagnosis of alcoholic dependence was made based on the ICD 10 criteria of alcoholic dependence.[5]

Source of data:

Subjects who fulfil the inclusion criteria of alcohol dependence; from de-addiction camps conducted by Shri Kshetra Dharmasthala Rural Development Project, Dharmasthala at 6 Taluks in Hassan district; Patients attending OPD and IPD of SDM college of Ayurveda and Hospital (SDM CAH), Hassan; inmates of a deaddiction unit at Hassan and few of the inmates of previous camps (Telephonic) were selected for the study. 402 subjects who fulfilled the inclusion criteria of alcohol dependence were included in the survey.

Locations and periods of recruitment:

Table 1: Locations and periods of recruitment

S. No:	Date	Venue	No: of subjects
1	6/7/2019-13/7/2019	Bhudeswara Math, Hassan	54
2	13/12/2019-20/12/2019	Channarayapatna	74
3	22/12/2019-29/12/2019	Halli Mysuru, Holenarasipura	72
4	15/11/2020-20/12/2020	Belur (telephonic)	12
5	15/11/2020-20/12/2020	Sakleshpura (telephonic)	13
6	20/12/2020-1/2/2021	Cure foundation de-addiction centre, Hassan	35
7	25/12/2020-3/2/2021	Police health checkup camp at SDM CAH, Hassan	52
8	1/4/2019-10/2/2021	OPD and IPD of SDM CAH, Hassan	90
		Total	402

Inclusion criteria:

All subjects who were in the age group of 18-60, who were fulfilling the diagnostic criteria and who were willing to sign the informed consent form were selected for the study.

Methods of data collection:

The permission to conduct a survey study among the people attending de-addiction camps conducted by Shri Kshetra Dharmasthala Rural Development Project, Dharmasthala, at six taluks of Hassan district of Karnataka was sought from the authority after explaining the details of survey study. After obtaining permission for survey study, each camp was visited as per the schedule provided by the authority and detailed interview was conducted with the inmates. Details of patients who visit OPD of Manovigyan avum Manasaroga and who get admitted to IPD of SDM College of Ayurveda and hospital were collected as and when it happened. The deaddiction unit in Hassan was visited twice in a month to collect the details from the inmates there. After screening each subject who are willing to sign the informed consent, with the ICD-10 diagnostic criteria for alcohol dependence, and those fulfilling inclusion criteria ; excluding those with major psychological illnesses such as schizophrenia; other

substance abuse except nicotine and with severe withdrawal symptoms, personalised in-depth semi-structured interview was conducted to find out different attributes of drinking behaviour such as quantity and frequency of consumption, personal characteristics of the drinkers, type of beverage consumed, temporal variations in drinking, settings where drinking takes place, the activities associated with drinking , the reason for drinking etc using a specially designed questionnaire. Data were collected using personalised in-depth semistructured interview by incorporating all the aspects of objectives and methodology, irrespective of caste, sex and religion.

Method of analysis of data:

Data was collected using case report form designed by incorporating all aspects for the study. Such collected data was tabulated and analysed using SPSS (Statistical package for social sciences) version 23. Demographic data and alcoholic drinking behaviours were analysed with descriptive statistics and expressed in percentage.

RESULTS:

430 subjects who enrolled and sought treatment for the complaints related to alcoholic dependence were screened and 402 subjects who fulfilled the inclusion criteria were selected and registered for the study.

Observations on demographic data:

The observations on demographic data have been summarised into a tabular form as given below in **Table 2**.

Observations on alcoholic drinking behaviours:

The observations on alcoholic drinking behaviour data have been summarised into a tabular form as given below in **Table 3**.

Table 2: Observations on demographic data

Variable	Category	Frequency	Percentage	Mean with Std. Deviation
Age				40.42±9.197 years
Gender	Male	398	99.0	
	Female	4	1.0	
Religion	Hindu	394	98.0	
	Muslim	5	1.2	
	Christian	3	0.7	
Class of profession	Skilled labourer	105	26.1	
	Unskilled labourer	197	49.0	
	Professionals	96	23.9	
	Student	4	1.0	
Marital status	Married	340	84.6	
	Single	61	15.2	
	Divorced	1	0.2	
Educational status	Uneducated	20	5.0	
	Primary school	79	19.7	
	High school	48	11.9	
	Secondary School Leaving Certificate	108	26.9	

	Pre University Course	89	22.1	
	Under Graduation	52	12.9	
	Post Graduation	6	1.5	
Socio economic status	Low	133	33.1	
	Middle	266	66.2	
	High	3	0.7	

Table 3: Observations on alcoholic drinking behaviours

Variable	Category	Frequency	Percentage
Reason for initiation	Curiosity only	12	3.0
	Peer influence only	153	38.1
	To feel good only	11	2.7
	To reduce mental stress only	97	24.1
	Social drinking only	9	2.2
	Curiosity and peer influence	98	24.4
	Others	22	5.47
Reason for current intake (Separate response taken for each option)	To feel good or function better	240	59.7
	To reduce physical or mental stress	273	67.9
	Due to influence of friends	217	54
	Toddy	6	1.2
Type of alcohol consumed	Arrack	10	2.5
	Beer	11	2.7
	Wine	4	1.0
	Brandy	111	27.6
	Whisky	137	34.1
	Vodka	10	2.5
	Rum	39	9.7
	Cocktail	74	18.4
Time of consumption of alcohol	Evening only	158	39.3
	Night only	63	15.7
	Morning, daytime, evening	52	12.9
	Morning, daytime, evening, night	71	17.7
	Others	58	14.43
Venue of intake	Home	145	36.1
	Bar	220	54.7
	Others	37	9.20
Companion for intake	Alone	202	50.2
	With friends	199	49.5
	Others	1	0.25
Type of comorbidity if any	Diabetes mellitus only	11	2.7
	Hypertension only	25	6.2
	Diabetes and Hypertension	6	1.5
	Fatty liver only	49	12.2
	Others	6	1.5
	No comorbidities	305	75.9
Reason for approaching to treatment	Self -motivation	283	70.4
	Compulsion from family	119	29.6

Table 4: Other observations on alcoholic drinking behaviours

Variable	Mean with Std. Deviation
Age of initiation of alcoholic intake	26.9 ±7.835 years
Number of days of consumption in a week	5.71 ±1.974 days
Quantity of toddy consumed per occasion	538.3333 ±498.414 ml
Quantity of arrack consumed per occasion	304.00 ±252.903 ml
Quantity of beer consumed per occasion	508.1818 ±213.6266 ml
Quantity of wine consumed per occasion	275.000 ±176.918 ml
Quantity of IMFL consumed per occasion	347.843 ±223.173 ml
Total monthly expenditure	10124.85 ±9267.314 Rupees

Among the 402 subjects 65.2%(262) were following binge drinking pattern, 61.7%(248) were consuming more alcohol during festive seasons, 16.9%(68) have been hospitalized at some time due to excess alcohol consumption, 32.3 % (130) were having positive family history of alcoholic consumption, 37.8%(152) were taking alcohol as an eye opener, 27.1%(109) were consuming alcohol with food, 58.2% (234) were having associated tobacco usage, 93.3% (375) stay at home after consuming alcohol, 15.2%(61) got troubled at workplace due to alcohol, 20.4%(82) had quarrels with others after consuming alcohol, 55.2%(222) drive vehicles after alcoholic consumption, 6.2%(25) had illicit sexual relations after taking alcohol, 25.6%(103) have domestic violence after taking alcohol, 85.6%(344) feel guilty after taking alcohol, 58.5%(235) have tried some time to cut down alcohol, 23.6% (95) were having known comorbidities such as diabetes, 60.9%(245) faced financial instability due to alcohol consumption and 94.3% were wishing sincerely to quit alcohol.

DISCUSSION:

In this study maximum number of subjects were from the age group of 31-50 years. There is predominance of males (99%) over females (1%). Research has suggested four categories of possible sociocultural reasons why men's and women's drinking patterns remain dissimilar, viz. power, sex, risks, and responsibilities. Also, cultural restrictions prevent females from consuming alcohol.[6]Majority of the subjects were Hindus (98%) probably due to the fact that study population was predominant of Hindus. Out of 402 subjects 122(30.3%) were farmers, 57 (14.2%) were drivers,53 (13.2%) were policemen and other professions constituted the remaining 42.3%. More subjects experience physical strain (farmers and drivers) and some experience both physical and mental strain in their occupation (policemen). As most of people around Hassan district are farmers it may be the reason that there were more subjects with physical strain were observed in this study. Among all subjects 26.9% were SSLC qualified and 22.1% were PUC qualified. This indicates that though the patients are well educated and they know the ill effects of alcohol then also they continue the intake of alcohol. For alcohol use and its disorders, education level may not be an influencing factor.

The mean age of initiation of alcohol was found to be 26.9 years. Majority of patients started drinking alcohol in the teenage only. Teenagers are more curious about newer experiences and peer pressure will be more in this age. Hence, they start developing newer addictions and fall in to dependence.

In a study titled Relation between age at first alcohol drink & adult life drinking patterns in alcohol-dependent patients the mean age of first drink was found to be 21.14±5.33 years.[7] In this study 38.1% started consuming alcohol due to peer influence, 24.4% due to curiosity and peer influence, 24.1% to reduce mental stress. The habit develops as social drinking with peer group slowly turns up in to dependence. Studies suggests that in relation to substance use, adolescents are influenced by what their friends do and what their parents think. These influences affect their own thoughts about whether they would enjoy using the substances.[8]

The most predominant reasons behind current alcohol intake were to feel good or function better, to reduce physical or mental stress and influence of friends. Out of 402 subjects 34.1% were consuming whisky, 27.6% were consuming brandy. The more palatable nature of whisky may be the reason behind it becoming as a choice. 75.8% subjects consuming IMFL took up to 400 ml of IMFL per day which is a heavy pattern of use. 67.7% consumed alcohol on daily basis in this study which is indicative of severity of dependence. It was found that the average number of days of consumption of alcohol in a week was 5.71 days. In a study titled Alcohol use and implications for public health; patterns of use in communities- 45% of the consumers in rural area were consuming alcohol on a daily basis.[9] In this study 65.2 % were following a binge drinking pattern. In a study titled Burden and socioeconomic impact of alcohol- the Bangalore study conducted by NIMHANS revealed that nearly 41% of the study population engaged in "binge drinking".[10] The differential duration of the intoxication period, excessive concentrations of alcohol at the tissue level, accelerated alcohol metabolism and generation of alcohol metabolites, and acute disruption of antioxidant mechanisms are some of the salient differences between chronic and binge-like alcohol mediated tissue injury.

It was found that 27.1% of the drinkers were consuming alcohol with food. In a study titled Association between patterns of alcohol consumption (beverage type, frequency and consumption with food) and risk of adverse health outcomes: a prospective cohort study, it was found that drinking alcohol without food was associated with higher mortality and cardiovascular risk compared to alcohol consumed with food when the same amount was consumed overall.[11] Among 402 subjects 37.8% were taking alcohol as an eye opener. This shows the clear sign of dependency on alcohol, in order to get rid of the withdrawal symptoms (Hangover).

Problem drinkers wants to get drunk in the morning itself, so they start taking alcohol as an eye opener. It was found that 39.3% were taking alcohol in the evening; 17.7% were taking alcohol in morning, daytime, evening and night. Probable reason for taking alcohol in evening may be to reduce physical strain and to feel good as major portion of subjects were having physical strain following day to day work. Taking alcohol either in the morning or in the daytime may lead to perceived hangovers at evening but taking alcohol in the evening leads to unperceived hangovers as the person sleeps by that time. Taking alcohol almost all the time in a day points to the severity of alcoholic dependence in the community.

Majority (54.7%) of subjects were consuming alcohol at bar. This behaviour may be due to the tendency to maintain secrecy of how much one drinks and with whom he drinks etc. from the family members. Most of them preferred bar because they don't want to drink in front of children and other elderly at home. (To respect the emotional or religious sentiments of the family). Preference of companion was equally distributed for solo consumption and consumption with friends. Solo drinking behaviours can indicate that a person is self-medicating problems or issues that they do not want to face. A person may also begin to drink by themselves because they do not want people to question the amount or frequency of alcohol that they are drinking. A person who drinks alone is putting themselves at risk of developing a substance abuse problem.[12]

In this study 58.2% of the subjects were using tobacco along with alcohol. In a study titled Concurrent alcohol and tobacco use among a middle-aged and elderly population in Mumbai, the proportion of tobacco users among alcohol users was 86.7% compared to only 57% among non-users of alcohol. This indicates a close relationship between alcohol use and increased tobacco use.[13] 55.2% of the subjects used to drive vehicle after consuming alcohol. In a study conducted by the National Institute of Mental Health and

Neurosciences (NIMHANS) in 12 major hospitals of Bangalore city, it was found that nearly 28% of injuries because of road traffic accidents were directly attributable to alcohol. The roadside survey revealed that nearly up to 40% of the drivers were under the influence of alcohol.[14] In a study done by Aditya *et al*., it was found that 20% of the fatal road traffic accidents were because of alcohol use. The blood alcohol concentration (BAC) of 38% of those alcohol users were above the permissible

limits.[15] comorbidities. Out of these 12.2% were having fatty changes of liver, 6.2% were having Out of 402 subjects 23.6% were known to have hypertension, 2.7% were having diabetes mellitus, and 1.5% were having both diabetes and hypertension. Even after known comorbidities they were consuming alcohol pointing to the severity of alcoholic dependence. 60.9% of the subjects agreed that they faced financial instability due to alcoholic consumption. The average expenditure per month on account of alcohol was found to be 10124 Rupees. It was observed that some subjects spent more than their monthly earnings. In a study done by Benegal *et al*., it was found that alcohol-dependent persons spent more money than they earned, they were forced to take loans to spend for their expenses related to alcohol consumption, on an average, 12.2 working days were lost to the habit and around 60% of the families were financially supported by the income from other family members.[16]

It was found that the average amount of IMFL consumed per occasion was 347.843 ml which is heavy usage of alcohol which may lead to health issues such as liver cirrhosis very quickly. In a study titled Alcohol-Attributable Cancer Deaths and Years of Potential Life Lost in the United States an estimated 48% to 60% of alcohol-attributable cancer deaths occurred at average daily consumption levels of more than 40 grams of alcohol. Consumption of from more than 20 grams to 40 grams was responsible for 14% to 17% of deaths, whereas consumption of 20 grams or less accounted for 25% to 35% of alcohol-attributable cancer deaths. [17]

CONCLUSION:

Alcoholic consumption is an emerging major health problem. Alcohol-related negative consequences are governed by the amount of drinking and by pattern of drinking as well. In this study majority of the subjects consumed alcohol daily, most of them following a binge drinking pattern and a major portion of them were heavy alcohol users. There is an urgent need to educate population on ways to minimize alcohol-related consequences by modifying their pattern of alcohol use or by making them to abstain.

Limitations:

The sample was restricted to a population who sought treatment and there may be many cases who may have gone unidentified as they didn't seek help. Sample size was very small as far as an observational study is concerned. Recall bias which was unavoidable may be present.

Further Recommendations:

Multicentric, scientific, community-based research studies on large population have to be conducted to understand the problem better. The intervention programmes should include preventive strategies and screening programmes to identify different patterns of drinkers and intervention for alcohol-dependents. The preventive strategies should include reduction of access to alcohol by formulating and enforcing laws regarding alcohol consumption. The legal age of drinking must be clearly defined. Legal prohibition on drinking in the public places and workplaces must be strictly enforced. Licensing of alcohol outlets, limits on the number of outlets, and on timings of alcoholic beverage sales or service are to be implemented. Training programmes for local health workers regarding the abuse of alcohol and other substances and their health and social consequences must be conducted at regular intervals.[18]

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