Patterns and Correlates of Alcohol Use- A Retrospective Study in a Secondary Care Hospital Setting

JIBI ACHAMMA JACOB[1], RHENIUS EDWARD[2], ANJU KURUVILLA[3]

ABSTRACT

Introduction: Alcohol use in India has been increasing over the years, and it results in myriad medical and psychosocial problems. Primary and secondary care physicians can play a unique role in the early recognition and treatment of patients with alcohol problems.

Aim: To determine the prevalence of different patterns of use of alcohol and factors associated with it among patients presenting to the psychiatry clinic in a secondary hospital.

Materials and Methods: A retrospective review of the medical records of patients attending the Psychiatry Department in a secondary care hospital in a semi-urban area of southern India who attended the clinic between 1st January 2016 to 31st December 2016 was made. Data regarding alcohol use and other clinical and socio-demographic details were analysed. Bivariate and multivariate statistics was used to identify factors associated with dependence pattern of alcohol use.

Results: A total of 103 charts, which documented substance use were analysed of which 78 documented alcohol use in the subjects. The mean age of the sample was 44.09±13.18 years and majority (97.43%) were males. The prevalence of a dependence pattern of alcohol use was 83.4%. Factors associated with alcohol dependence were being married, greater daily expenditure on alcohol, greater number of days of alcohol use in a month, presence of a co-morbid medical diagnosis, problems with employment and marital discord. Depression was present in 33 (42.3%) individuals and it was the most commonly associated psychiatric morbidity.

Conclusion: There is a high prevalence of Alcohol Use Disorders (AUD) in secondary care settings. Tackling this problem requires a combination of strategies including early and effective medical and psychosocial intervention in addition to public health strategies and legislation to regulate the availability and consumption of the substance.

Keywords: Alcoholism, Prevalence, Psychiatry

INTRODUCTION

While alcohol use has been declining in many western European countries over the past three decades, it has been increasing in India [1]. The WHO's Global Status Report on Alcohol and Health, published in 2018, states that the per capita alcohol consumption in India increased two-fold between 2005 and 2016. Manthey J et al., forecast that this trend of increasing alcohol use in the middle-income countries including India is expected to continue through to the year 2030 [1]. The National Survey on Extent and Pattern of Substance Use in India in 2019 estimated that 14.6% of the Indian population between the ages of 10 and 75 use alcohol with the consumption being greater in men (27.3%) than women (1.6%) [2]. Country liquor and spirits or India-made foreign liquor are most common beverages consumed by alcohol users [1].

Patterns of alcohol use vary from social use to abuse patterns; the latter may be harmful use or dependence. Dependence pattern has been reported in 2.7% of the general population while 2.5% have a harmful use pattern. This translates to more than 5.7 crore individuals in the country using alcohol in a harmful or dependent pattern [2].

Psychosocial consequences of alcohol use include financial difficulties, problems in relationships within the home and outside, domestic violence and an inability to carry out responsibilities at work or home. Adverse health consequences, more prevalent than that seen in the general population, result from damage to multiple organ systems. Users' psychological well-being is affected as evidenced by depressive symptoms, more psychiatric emergency room visits, higher suicide rates as well as behavioural changes and psychosis [3-5].

The enormity of the problem points to the urgent need to identify and tackle AUD at the primary and secondary healthcare level, as these are the first point of contact for the majority of the Indian population given their accessibility and affordability. Services dedicated to the treatment of substance use disorders are few and there exists significant stigma related to a visit to a psychiatric hospital or deaddiction centre. In the background of the above factors, primary and secondary healthcare facilities are ideally suited to screen for problem drinking, promote awareness of the negative effects of heavy drinking, provide advice to motivate and facilitate reduction in drinking, provide appropriate medical treatment, and refer to a higher centre when necessary [6].

Data regarding AUDs from secondary healthcare is limited, though it is an important participant in the pathway to care in India [7]. Therefore, this retrospective study was done to estimate the prevalence of AUD in a secondary hospital, the patterns of use, factors associated and referral patterns to identify potential areas for intervention.

MATERIALS AND METHODS

The retrospective study was conducted in a private hospital, functioning at the level of a district hospital in a semi-urban area of southern India. It has a bed strength of 200 and provides outpatient multi-speciality services, including outpatient psychiatric services, to more than 250 persons daily. For this study, the medical records of all patients who attended the psychiatric clinic between 1st January 2016 to 31st December 2016 were analysed. The study protocol was approved by the Institutional Review Board and Ethics Committee {IRB - 11489(Retro)- dated 22.08.2018} and study was conducted between 1st October to 31st December 2018.

Patients attending the various departments of the hospital are routinely referred to Psychiatry Department for evaluation when the physician identifies a mental health problem or substance use

disorder. In the psychiatry clinic the patient is evaluated in detail by a psychiatrist and diagnoses are made on the basis of ICD 10-Classification of mental and behavioural problem [8].

Inclusion criteria: Medical records of all consecutive patients who visited the psychiatry clinic during the specified period were reviewed and those which mentioned alcohol use were selected.

Exclusion criteria: Medical records that did not mention any form of substance use were excluded.

A standardised data extraction form was used to record demographic details, clinical and psychosocial factors pertaining to alcohol use, alcohol related withdrawal symptoms, details of psychiatric morbidity including presence of depressive and anxiety symptoms, sexual dysfunction, cognitive symptoms and other substance use. Alcohol related medical co-morbidities along with the referral pathway were also documented. Confidentiality was maintained by anonymising the data with codes.

STATISTICAL ANALYSIS

The statistical software Statistical Package for Social Sciences version 16.0 (SPSS 16.0) was employed for the analysis of data. Mean and standard deviation were employed to describe continuous variables, while frequency distributions were obtained for categorical data. Data were found to be normatively distributed; therefore, parametric statistical tests were used. The Chi-square test and the Student t-test were used to assess the significance of associations for categorical and continuous variables, respectively. The Pearson's correlation coefficient was employed to assess the statistical significance of the association between two continuous variables. Logistic regression adjusted for age was used to identify factors associated with dependence pattern of drinking.

RESULTS

One hundred and three medical records had documentation regarding substance use and of these 78 patients (41.27%) were consumers of alcohol. The details of these 78 individuals, henceforth known as the sample, are as follows: 76 (97.43) were male and 79.5% were currently married. The mean age was 44.09 years (SD=13.18) while the mean number of years of education was 8.63 (SD=4.32). The majority belonged to the Hindu religion (73.1%) and were semiskilled workers (57.5%). Total 21.8% had financial debts. Among the two women in the sample, one had a dependence pattern of alcohol use while the other had harmful use. The former was a widow, unskilled labourer who used locally brewed arrack while the latter was a professional who was married and whose drink of choice was India-made foreign liquor [Table/Fig-1].

Variables	Frequency (%) (n=78)	Mean±SD	Range
Age (years)		44.09 (13.18)	17-83
Gender			
Male	76 (97.43)		
Female	2 (2.56)		
Education (years)		8.63 (4.32)	0-18
Employment			
Unemployed	04 (5.1)		
Semiskilled	45 (57.5)		
Skilled	26 (33.3)		
Professional	02 (2.6)		
Student	01 (1.3)		
Religion			
Hindu	57 (73.1)		
Christian	19 (24.4)		
Muslim	02 (2.6)		

Marital status			
Married	62 (79.5)		
Divorced/widower	06 (7.69)		
Never married	10 (12.8)		
Number of children		1.83 (1.44)	0-7
Number of people in the house		4.5 (1.39)	2-10
Type of family			
Nuclear	51 (65.4)		
Joint/Extended	27 (34.61)		
Family history of alcohol use	57 (73.07)		
Family history of mental illness	08 (10.25)		
History of mental illness	03 (3.84)		
Presence of debt	17 (21.79)		
Type of house (n=72)*			
Concrete roof	43 (55.1)		
Thatched/Tiled roof	29 (37.1)		
Other substance use			
Nicotine	17 (21.79)		
Cannabis	02 (2.6)		

[Table/Fig-1]: Socio-demographic and clinical details.
*data for the rest were missing

A diagnosis of Alcohol Dependence Syndrome (ADS), based on ICD-10 criteria, was fulfilled in 83.4% of the sample, 3.8% had a pattern of harmful use, while 12.8% were social or occasional drinkers. A binge pattern was described in two of those with ADS. Half the group preferred brandy (50%). Clinical details of AUD, details of associated medical and psychosocial factors are depicted in [Table/Fig-2] [9]. Most (73.1%) had not been treated for AUD in the past; of those who had, treatment was allopathic in thirteen, magico-religious in six, while

Variables	Frequency (%) (n=78)	Mean±SD	Range
Age of onset of alcohol use		27.89 (9.11)	12-52
Duration of alcohol use (years)		16.08 (10.52)	0.5-40
Duration of dependence, as per ICD-10 criteria (years)		4.92 (5.03)	0-20
Quantity of alcohol consumed/day (mL)		286.44 (163.20)	60-850
Number of days of alcohol consumption/month		25.26 (2.08)	01-30
Money spent on alcohol (INR/day)*		314.10 (313.33)	90-1000
Longest period of abstinence (in months)		2.21 (6.07)	0-48
Pattern of consumption			
Weekend drink†	38 (48.71)		
Night drink‡	67 (85.89)		
Eye opener drink§	21 (26.92)		
ICD 10 based diagnosis for alcohol use			
Abuse	10 (12.8)		
Harmful	03 (3.8)		
Dependence	65 (83.4)		
Pattern of alcohol use			
Solitary	41 (52.56)		
In company	37 (47.40)		
Preferred beverage			
Single type of India-made foreign liquor	52 (66.67)		
Mixed	22 (28.20)		
Wine/local arrack preparation	04 (5.12)		
Past treatment for alcohol use disorder (yes)	21 (26.92)		

Adverse consequences of alcohol use (yes)	
Work affected	38 (48.70)
Marital discord	36 (46.2)
Road traffic accidents	16 (20.5)
Withdrawal features	
Autonomic symptoms	19 (24.35)
Nausea	30 (38.46)
Vomiting	33 (42.30)
Insomnia	48 (61.53)
Seizure	14 (17.94)
Hallucination	14 (17.94)
Delirium	18 (23.07)
Psychiatric symptoms	
Depressive symptoms	33 (42.30)
Anxiety symptoms	21 (26.92)
Sexual dysfunction	19 (24.35)
Cognitive symptoms	07 (8.97)
Referral pattern	
Physician referral	58 (74.35)
Self-referral	20 (25.6)
Systemic involvement	
Musculo-skeletal (trauma)	11 (14.10)
Cardiovascular	07 (8.97)
Gastrointestinal	37 (47.43)
Hepatobiliary	21 (26.92)
Peripheral nervous system	07 (8.97)

[Table/Fig-2]: Details of Alcohol Use Disorder (AUD).
*INR-Indian Rupees; †Weekend drink- alcohol use restricted to week end days, ‡Night drink- alcohol use regularly at nights, §-eye-opener drink -subject needs drink first thing in the morning to steady your nerves or to get rid of a hangover- part of CAGE questionnaire [9]

two had approached indigenous practitioners. Nine of the sample had a diagnosis of infertility. Among the seven individuals who were found to have significant cognitive symptoms, one recorded diagnosis of Wernicke's encephalopathy.

Among the majority, 74.35% of the sample had been referred for psychiatric evaluation by other departments of the hospital, mostly (57.7%) from internal medicine. Of the others, two had been suggested an evaluation by religious healers and one by a practitioner of alternate systems of medicine.

Factors that were found to be associated with dependence pattern use of alcohol, on multivariate analysis after adjusting for age, included current married status, greater daily expenditure on alcohol, a greater number of days of alcohol use in a month, regular night-time drinking, presence of a co-morbid medical diagnosis, problems with employment and marital discord. Multivariate analysis of factors associated with withdrawal related delirium showed significance with history of seizures in withdrawal period, liver cell failure, past treatment seeking behaviour, marital discord, duration of dependence, quantity of alcohol and amount spend in alcohol use [Table/Fig-3].

Individuals with younger age of onset of alcohol use had a family history of mental illness (t=-2.02, df=76, p=0.04) and alcohol use (t=-2.05, df=76, p=0.043). Those with a later age of onset of alcohol use preferred a single brand of India-made foreign liquor rather than a mixture of spirits seen in younger onset drinking. Those with onset of alcohol use below the age of 25 years tended to have more blackouts while those above the age of 25 had a history of delirium. A solitary drinking pattern was associated with age above 40 years, married status, and presence of cognitive impairment.

The quantity of alcohol consumed daily negatively correlated with the age of the individual, age of onset of alcohol use and positively correlated with the amount of money spent daily on alcohol. Consumption of larger quantities also showed significant

Factors associated with alcohol dependence syndrome								
	Bivariate statistics					**Multivariate statistics$**		
	Alcohol dependence syndrome n/Mean (SD)		χ^2/Fischer's/ t-value	df	p-value	**Adjusted OR**	p-value	CI
Variable	**No**	**Yes**						
Currently married								
No	08	08	16.10	1	<0.001†	0.056	<0.001†	0.011-0.274
Yes	05	57						
Presence of Co-morbid medical diagnosis								
No	6	20	08.43	1	0.010*	0.156	0.008*	0.040-0.609
Yes	7	45						
Past de-addiction treatment								
No	13	44	05.75	1	0.016*	0.000	0.998	--
Yes	0	21						
Night time alcohol use								
No	03	08	24.47	1	<0.001†	0.020	<0.001†	0.003-0.131
Yes	05	62						
Eye opener drink								
No	13	44	05.75	1	0.016*	0.000	0.998	--
Yes	0	21						
Marital discord								
No	11	31	05.94	1	0.015*	0.161	0.024*	0.033-0.789
Yes	02	34						
Sexual dysfunction								
No	13	46	05.02	1	0.031*	0.000	0.998	--
Yes	0	19						

Work affected								
No	12	28	10.51	1	0.001*	0.063	0.010*	0.008-0.516
Yes	01	37						
Quantity of alcohol per day (mL)	175.38 (308.65)	136.29 (159.86)	2.81	76	0.006*	1.011	0.015*	1.00-1.02
Number of days of alcohol use (per month)	09.84 (09.17)	28.35 (05.05)	7.061	76	<0.001†	1.308	<0.000†	1.15-1.49
Amount spent on alcohol (INR/day)	154.61 (51.41)	345.23 (222.0)	6.191	76	<0.0001†	1.024	0.004*	1.01-1.041
Factors associated with delirium								
Dependence pattern								
No	13	0	4.68	1	0.032*	0.000	0.999	--
Yes	47	18						
History of seizures in withdrawal period								
No	55	09	16.32	1	<0.001†	0.091	<0.001†	0.025-0.334
Yes	05	09						
Liver failure								
No	50	07	13.90	1	<0.001†	0.127	0.001*	0.040-0.408
Yes	10	11						
Past treatment seeking								
No	48	09	6.33	1	0.017*	0.250	0.015*	0.082-0.766
Yes	12	09						
Marital discord								
No	39	03	13.02	1	<0.001†	0.108	0.001*	0.028-0.415
Yes	21	15						
Duration of dependence (years)	04.21 (04.93)	07.31 (05.93)	2.36	76	0.021*	1.115	0.030*	1.01-1.23
Quantity of alcohol per day (mL)	265.0 (146.37)	357.89 (198.13)	2.17	76	0.033*	1.003	0.042*	1.00-1.006
Number of days of alcohol use (per month)	24.02 (01.99)	29.39 (01.78)	2.26	76	0.027*	1.192	0.133	0.948-1.500
Amount spent on alcohol (INR/day)	272.83 (164.86)	448.89 (296.09)	3.25	76	0.002*	1.003	0.007*	1.00-1.006

[Table/Fig-3]: Bivariate and multivariate analysis.
χ^2: Pearson's chi-square value; t: Independent sample t-test value; *p-value <0.05; †p: value <0.001; $: Multivariate logistic regression (adjusted for age); CI: Confidence interval

association with eye opener drinking pattern, adverse effects on employment, a history of delirium, past treatment for alcohol dependence, history of mental illness and a positive family history of alcohol use.

Blackouts were associated with longer duration of dependence and greater daily expenditure on alcohol, while withdrawal related seizure was associated with amount spends on alcohol.

Cardio-vascular disorders were significantly more in older persons while gastrointestinal problems were more in the younger group. Presence of cognitive symptoms was associated with larger quantity of consumption and expenditure on alcohol while deranged hepatic function was associated with greater frequency of alcohol use.

Impairment in work was associated with longer duration of use and greater quantities of use, while marital discord was associated with duration of alcohol dependence, number of days engaged in alcohol use and amount spent on alcohol.

DISCUSSION

This study was carried out to determine the patterns of alcohol use and the factors associated with it among patients in a secondary healthcare setting. The prevalence of ADS was high and found to be associated with larger amount of alcohol use, regular night-time drinking, co-morbid medical illness, and psychosocial issues such as marital discord and problems with employment.

The socio-demographic profile of the study sample was similar to that described in a secondary care hospital study conducted in Karnataka [10,11]. A hazardous pattern of use was seen in the majority of the sample while only a small percentage was

social drinkers. The rate was higher than in other studies carried out in primary care [12] and the community [13] in the same geographical region, as it was a hospital-based study and included participants referred to psychiatry from other departments where they had presented with physical complaints and/or injury related to alcohol use.

Harmful use was more common among men than women, similar to that reported by most other researchers from India [14]. Under-reporting due to stigma and lower enquiry rates based on gender related stereotypes may also contribute to the lower prevalence of alcohol use in women. The prevalence of alcohol consumption was found to be higher among female medical students (40.6%) compared to male students (38%) in a study conducted by Verenkar YJ and Vaz FS [15].

The prevalence of harmful use was more among married persons, which is comparable to studies by Ramanan VV and Singh SK [16] and Bal R [17]. The mean age of the sample was 44.09 years, similar to demographics reported from other studies in this region [18,19]. In contrast, Ghosh S et al., reported a higher prevalence among adults less than 25 years of age [20].

A dependence pattern of alcohol use was found to be associated with higher rates of medical disorders and psychosocial consequences. The common medical co-morbidities were gastrointestinal and hepatobiliary disorders. Dutta R et al., similarly reported that hepatic and gastrointestinal complications were the commonest causes for seeking medical consultation in persons with AUD [21]. Among the psychosocial issues, lack of marital satisfaction was associated with harmful use of alcohol in this study. Similarly, Ramanan VV and Singh SK reported a strained relationship between the consumers of alcohol and their spouse

and children [16]. Kishor M et al., also reported a high rate of marital dissatisfaction, psychological distress and psychiatric morbidity among the spouses of alcohol dependent men [22]. Longer duration of use of alcohol, as well as consumption of larger quantities over longer periods of time was found to be associated with a greater risk for health problems; this is comparable to other studies that found that the longer substance use continues, the more it is associated with serious health problems and social consequences [23,24].

Young people have been reported to be more likely to engage in heavy episodic drinking than others [25]. This was evident in the present study where younger age was significantly associated with alcoholic blackouts, which are often preceded by drinking large quantities of alcohol. This study also found early onset of alcohol use to be associated with a family history of alcohol use. Varma VK et al., likewise reported that early-onset alcoholics had a larger proportion of first-degree relatives with AUDs [26]. A trend of decreasing age of onset of alcohol use with successive birth cohorts has been reported by some researchers [27,28]. A significant number of the study population reported solitary drinking. Ghosh S et al., also reported a significant association between drinking alone and a harmful or hazardous pattern of drinking [20].

This study provides information from a private sector secondary care hospital, and emphasises the need to strengthen and increase the general hospital and consultation liaison psychiatry units which may be more cost-effective and acceptable to the public. Integrating screening procedures for substance use disorders into routine health assessments will improve the rates of detection of AUDs at the primary and secondary healthcare levels. Clinicians have an important role in educating the individual patient regarding the risks of alcohol consumption, to prevent or delay initiation of drinking among those who do not drink, and limit consumption to low-risk drinking levels among those who do consume alcohol [29]. While public education regarding the potentially devastating medical, psychological and socio-economic impacts of excessive use of alcohol is essential, this study emphasises the need to improve awareness particularly among young people with school and college-based education programs, which have been shown to help reduce substance use and other behavioural consequences [30]. The association of AUDs with amount and frequency of drinking highlights the need for policies and legislation regarding the sale and procurement of alcohol.

Limitation(s)
This was a retrospective study based on medical records and had a small sample size. It was carried out in a secondary care hospital setting, so the findings may not be generalisable to the community.

CONCLUSION(S)
This study highlights the high prevalence of AUDs in a secondary care setting. Many of these individuals presented to the hospital with medical and surgical problems and were found to have associated psychosocial difficulties. The study findings emphasise the need for a combination of strategies to tackle this preventable health risk factor by involving various stakeholders and also the need to strengthen research from secondary care settings, so as to identify lacunae in mental health care in peripheral settings .While healthcare professionals at the grass roots can screen and provide early and effective medical and psychosocial intervention, public health strategies

and legislation are required to regulate the availability and consumption of the substance.

REFERENCES
[1] Manthey J, Shield KD, Rylett M, Hasan OSM, Probst C, Rehm J. Global alcohol exposure between 1990 and 2017 and forecasts until 2030: A modelling study. The Lancet. 2019;393(10190):2493-502.
[2] National Survey on Extent and Pattern of Substance Use in India' 2019 [Internet]. AIIMS NEW. [cited 2020 Dec 16]. Available from: https://www.aiims.edu/en/national-drug-use-survey-2019.html.
[3] Vijayakumar L, Rajkumar S. Are risk factors for suicide universal? A case-control study in India. Acta Psychiatr Scand. 1999;99(6):407-11.
[4] Adityanjee, Mohan D, Wig NN. Alcohol-related problems in the emergency room of an Indian general hospital. Aust N Z J Psychiatry. 1989;23(2):274-78.
[5] Hesselbrock MN, Meyer RE, Keener JJ. Psychopathology in hospitalized alcoholics. Arch Gen Psychiatry. 1985;42(11):1050-55.
[6] Anderson P, O'Donnell A, Kaner E. Managing alcohol use disorder in primary health care. Curr Psychiatry Rep. 2017;19(11):79.
[7] Salve H, Kharya P, Misra P, Rai SK, Kant S. Psychiatric morbidity at secondary level health facility in Ballabgarh, Haryana. Ind Psychiatry J. 2013;22(1):86.
[8] World Health Organization (WHO). (1993). The ICD-10 classification of mental and behavioural disorders.World Health Organization. url-https://www.who.int/classifications/icd/en/bluebook.pdf.
[9] Ewing JA. Detecting alcoholism. The CAGE questionnaire. JAMA. 1984;252(14):1905-07. Doi: 10.1001/jama.252.14.1905. PMID: 6471323.
[10] Risal A, Tharoor H. A cross-sectional comparison of drinking patterns, alcohol use and related medical morbidities in a secondary versus tertiary setting. Kathmandu Univ Med J. 2013;11(42):152-57.
[11] Rathod SD, Nadkarni A, Bhana A, Shidhaye R. Epidemiological features of alcohol use in rural India: A population-based cross-sectional study. BMJ Open. 2015;5(12):e009802.
[12] Luitel NP, Baron EC, Kohrt BA, Komproe IH, Jordans MJD. Prevalence and correlates of depression and alcohol use disorder among adults attending primary health care services in Nepal: A cross sectional study. BMC Health Serv Res [Internet]. 2018 Mar 27 [cited 2020 Dec 22];18. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5869789/.
[13] John A, Barman A, Bal D, Chandy G, Samuel J, Thokchom M, et al. Hazardous alcohol use in rural southern India: Nature, prevalence and risk factors. Natl Med J India. 2009;22(3):123-25.
[14] Gopikrishnan SK, Ponraj DG, Newtonraj A, Purty AJ, Manikandan M, Vincent A. Prevalence and determinants of Alcohol use in a remote rural area in South India: A community-based cross-sectional study. J Family Med Prim Care 2020 [cited 2021 May 5];9:4333-36.
[15] Verenkar YJ, Vaz FS. Prevalence and pattern of alcohol consumption using alcohol use disorder identification test among students at a medical college in Goa, India. International Journal of Community Medicine and Public Health [S.l]. 2018;5(7):2935-38.
[16] Ramanan VV, Singh SK. A study on alcohol use and its related health and social problems in rural Puducherry, India. J Family Med Prim Care. 2016;5(4):804-08.
[17] Bal R. Prevalence of Alcohol Dependence among Males in Thiruvananthapuram District, Kerala. RRJSS. 2016;2(1):01-07.
[18] Ganesh Kumar S, Premarajan KC, Subitha L, Suguna E, Vinayagamoorthy, Kumar V. Prevalence and pattern of alcohol consumption using Alcohol Use Disorders Identification Test (AUDIT) in Rural Tamil Nadu, India. J Clin Diagn Res. 2013;7(8):1637-39.
[19] 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;4:360-64.
[20] Ghosh S, Samanta A, Mukherjee S. Patterns of alcohol consumption among male adults at a slum in Kolkata, India. J Health Popul Nutr. 2012;30(1):73-81.
[21] Dutta R, Gnanasekaran S, Suchithra S, Srilalitha V, Sujitha R, Sivaranjani SS, et al. A population based study on alcoholism among adult males in a rural area, Tamil Nadu, India. J Clin Diagn Res. 2014;8(6):JC01-03.
[22] Kishor M, Pandit LV, Raguram R. Psychiatric morbidity and marital satisfaction among spouses of men with alcohol dependence. Indian J Psychiatry. 2013;55(4):360.
[23] Tennant FS, Detels R. Relationship of alcohol, cigarette, and drug abuse in adulthood with alcohol, cigarette and coffee consumption in childhood. Prev Med. 1976;5(1):70-77.
[24] United Nations (2003). World Youth Report: The Global Situation of Young People, 2003. [Internet]. 2015 [cited 2020 Dec 22]. Available from: https://www.un.org/development/desa/youth/world-youth-report/world-youth-report-2003.html.
[25] Kuntsche E, Rehm J, Gmel G. Characteristics of binge drinkers in Europe. Soc Sci Med 1982. 2004;59(1):113-27.
[26] Varma VK, Basu D, Malhotra A, Sharma A, Mattoo SK. Correlates of early- and late-onset alcohol dependence. Addict Behav. 1994;19(6):609-19.
[27] Nair UR, Vidhukumar K, Prabhakaran A. Age at onset of alcohol use and alcohol use disorder: Time-trend study in patients seeking de-addiction services in Kerala. Indian J Psychol Med. 2016;38(4):315-19.

[28] Manimunda SP, Sugunan AP, Thennarasu K, Pandian D, Pesala KS, Benegal V. Alcohol consumption, hazardous drinking, and alcohol dependency among the population of Andaman and Nicobar Islands, India. Indian J Public Health. 2017;61(2):105-11.

[29] Rehm J. The risks associated with alcohol use and alcoholism. Alcohol Res Health. 2011;34(2):135-43.

[30] Carney T, Myers B. Effectiveness of early interventions for substance-using adolescents: Findings from a systematic review and meta-analysis. Subst Abuse Treat Prev Policy. 2012;7:25.

PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of Psychiatry, Christian Medical College, Bagayam, Vellore, Tamil Nadu, India.
2. Nurse In-charge, Department of Nursing, Scudder Memorial Hospital, Ranipet, Tamil Nadu, India.
3. Professor, Department of Psychiatry, Christian Medical College, Bagayam, Vellore, Tamil Nadu, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Jibi Achamma Jacob,
Assistant Professor, Department of Psychiatry, Christian Medical College, Bagayam, Vellore-632002, Tamil Nadu, India.
E-mail: jibiachamma@gmail.com

AUTHOR DECLARATION:
• Financial or Other Competing Interests: None
• Was Ethics Committee Approval obtained for this study?   Yes
• Was informed consent obtained from the subjects involved in the study?   No
• For any images presented appropriate consent has been obtained from the subjects.   NA