Prevalence of alcohol use and the interventions needed among adults: A community study in a rural area in South India

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ABSTRACT

Background: The health issues and social problems associated with alcohol use are well known. This study seeks to identify the prevalence of alcohol consumption and dependence among alcohol users in a rural area of Trivandrum district. **Objectives:** To assess the prevalence of alcohol use among adults of Nellanad Panchayat, a rural area in Trivandrum, Kerala, to find out the interventions required among the alcohol users, and to identify persons with harmful and hazardous use of alcohol using AUDIT. **Settings and Design:** Cross-sectional study in Nellanad Panchayat, Trivandrum district, Kerala. **Methods and Materials:** A cross-sectional study was carried out among 1545 residents in Nellanad Panchayat, a rural area in Kerala, by interviewing adults with the help of a questionnaire. Data were analyzed using SPSS. **Results:** The overall prevalence of current alcohol use was 146 (9.5%). The prevalence among males was 143 (18.3%) and females was 3 (0.4%). ASSIST scores showed that 99 (50%) of ever users required health education, 74 (37.8%) required counseling, whereas 23 (11.7%) required de-addiction. **Conclusions:** Among males, the alcohol consumption is still as high as 18.3%. The most important factor affecting alcohol use is peer pressure. Health education is the most required intervention to reduce burden of alcohol use.

Keywords: Adults, alcohol, ASSIST, AUDIT, Kerala, substance use

Introduction

Alcohol consumption is associated with increased risk for many disease outcomes.[1] According to the World Health Organization (WHO), globally, about 2.3 billion are current drinkers. The harmful use of alcohol amounted to 3 million deaths in 2016.[2]

Hazardous use of alcohol is defined as the quantity or the pattern of alcohol consumption that places the individual at risk for adverse health events whereas harmful alcohol use refers to alcohol consumption that results in adverse events.[3]

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The primary care physician has a key role in initiating the intervention required in a person who consumes alcohol. Early identification of individuals with hazardous alcohol consumption helps in early initiation of rehabilitative measures to reduce the complications in them. The data regarding the prevalence of alcohol use, its associated factors, and identifying the interventions required are the initial step toward it.

Objective

This study was done to assess the prevalence of alcohol use among adults of Nellanad Panchayat, a rural area of Trivandrum district, to identify persons with harmful and hazardous use of alcohol and to identify the interventions required among them.

Materials and Methods

A cross-sectional study was conducted among adults in Nellanad Panchayat, a rural area in Thiruvananthapuram district, during 2017-18. The inclusion criteria for the study were both male and female of age ≥20 years and permanent residents of the study area. Sampling technique used was cluster sampling. Considering prevalence of alcohol use as 21% and a precision of 20%, and design effect of 2, the sample size was estimated to be 1416. Adding 10% non-response rate, the sample size estimated as 1557. Sixty-four clusters were identified with twenty-five participants in each cluster. All eligible respondents, who were 20 years and above were interviewed using the questionnaires, ensuring adequate privacy and confidentiality. The ASSIST was used to determine the prevalence of alcohol consumption and associated level of harm. AUDIT scores[4] were used to identify the risk and the interventions required. Out of the total 1600 participants interviewed, fifty-five persons were excluded due to incomplete data. Approval of institutional ethics committee was obtained before starting the study. EC approval obtained from IEC of Sree Gokulam Medical College And Research Foundation, Trivandrum SGMC IEC NO.20/221/03/2016.

In this study, ever user was one who had reportedly used alcohol at least once in his or her life time. A never user was one who had not used alcohol even once in his or her lifetime. Ex-user, if the person had not used alcohol for the past 3 months among the ever user. In this study, current alcohol use was regarded as use in preceding 3 months.

According to ASSIST, a score of 0–10 is regarded as lower risk, required health education; 11–26 as moderate risk, required counseling; and 27+ as high risk, required de-addiction. AUDIT scores between 0 and 7 required health education, between 8 and 15 meant advice was needed, between 16 and 19 needed health advice and counseling, whereas score between 20 and 40 needed referral to specialist.

Data were analyzed using SPSS. Frequency and percentages were calculated for categorical variables. Chi-square test is used as the test of significance. *P* value < 0.05 was taken as significant.

Results

Participants include 780 (50%) males and 765 (49.5%) females. A total of 182 (14.2%) were Hindus, 12 (6.2%) were Muslims, and 2 (0.031%) were Christians. Four hundred and twenty-nine (27.8%) were educated up to high school, 407 (26.3%) had finished graduation, 308 (19.9%) had studied up to intermediate school, 160 (10.4%) had studied up to middle school, and 67 (4.3%) were professionals. Only 152 (9.8%) had completed primary education and 22 (1.4%) were illiterate. A total of 997 (64.5%) belonged to nuclear family, whereas 192 (12.4%) belonged to joint family and 356 (23%) from three-generation families. Three-hundred and fifty-five (23%) were aged between 20 and 30 years, 272 (17.6%) were between 31 and 40 years,

310 (20.1%) between 41 and 50 years, 261 (16.9%) between 51 and 60 years, and only a small proportion among the elderly, that is, 236 (15.3%) belonged to 61-70 years and 111 (7.2%) belonged to age above 71 years. A total of 881 (57%) were unmarried, 594 (38.4%) were married, 5 (0.3%) were widowed, and 65 (4.2%) were divorced. The mean age of study participants was found to be 45.01 years with a SD of 16.462.

Current alcohol use was found to be 146 (9.5%) [Table 1]. The mean age of alcohol use was found to be 22.02 years. Among the ever users of alcohol, 96.9% of reported that peer pressure has an influence in their consumption of alcohol. Thirty-nine percentage reported that mass medias like television or radio or social media have affected their drinking habit. A total of 3.5% has attributed family problems to their drinking habit. Among the current users, 9.7% reported that they have some stressors like death of a dear one or loan.

Current alcohol use was significantly high among males (18.3%) as compared to females (0.4%) [Table 2].

A total of 25.4% were regular alcohol users, 4.1% suffered from health or financial problems, whereas 4.8% had failed to carry out responsibilities on most days of the week. 41.1% and 10.3% of current alcohol users received concern from friends or relatives within or more than past 3 months, respectively.

There was a statistically significant association among age group, gender, religion, education, marital status, and smoking status with alcohol use while no association was observed between socioeconomic status and alcohol use (*P* = 0.14) [Table 3].

Multivariate logistic regression analysis found significant association with male gender (*P* < 0.001), age group (*P* < 0.001), smoking (p < 0.001), religion (*P* < 0.001), and alcohol use, but no significant association among

Table 1: Prevalence of alcohol consumption (*n*=1545)

Pattern of alcohol consumption	*n*	Percentage	95%CI
Current users	146	9.5	8.0-10.9
Ex users	50	3.2	2.4-4.1
Never users	1349	87.3	85.4-88.9
Total	1545	100	100

Table 2: Prevalence of alcohol consumption and gender (*n*=1545)

Gender	Alcohol use	*n*	Percentage	95% CI
Male	Current user	143	18.3	15.6-21.2
	Ex user	48	6.2	4.7-7.8
	Never user	589	75.5	72.4-78.6
	Total	780	100	
Female	Current user	3	0.4	0 -0.8
	Ex user	2	0.3	0-0.7
	Never user	760	99.3	98.8-99.9
	Total	765	100	

Variables	Alcohol Use		Total	Chi Square value	P
	Ever user	Never user			
Age group in years					
20 -30	8	347	355	66.66	<0.001
31-40	24	248	272		
41-50	53	257	310		
51-60	39	222	261		
61-70	52	184	236		
>70	20	91	111		
Gender					
Male	191	589	780	198.06	<0.001
Female	5	759	764		
Religion					
Hindu	182	1103	1285	16.63	0.001
Muslim	12	181	193		
Christian	2	65	67		
Socio economic status					
Class I	5	26	31	6.92	0.14
Class II	41	365	406		
Class III	43	332	375		
Class IV	103	586	689		
Class V	4	39	43		
Education					
Illiterate	1	21	22	53.67	<0.001
Primary	24	128	152		
Middle	27	133	160		
High School	89	340	429		
Higher Secondary	25	283	308		
Graduate	27	380	407		
Post Graduate	3	64	67		
Marital status					
Married	66	528	594	12.58	0.006
Unmarried	129	751	880		
Widowed	0	5	5		
Divorced	1	65	66		
Smoking status					
Smokers	115	75	190	268.89	<0.001
Non smokers	81	1274	1355		

Table 3: Association between socio demographic variables and alcohol use (*n*=1545)

socioeconomic status ($P = 0.34$), education ($P = 0.112$), marital status ($P = 0.405$), and alcohol use.

Discussion

Alcohol consumption poses serious physical and psychological problems as well as affects societies by disrupting social harmony and familial issues and it is hence important to identify and treat individuals with alcohol abuse at the earliest. Individuals with earlier ages of initiation of alcohol use especially pre and early adolescent years were found to have more vulnerability to developing alcohol-related disorders as it is during this period that adolescents develop psychological and social changes that help them adapt socially at a later age. Early alcohol use interferes with these adaptation processes thus causing an escalation in heavier and increased consumption of alcohol.[5]

This study, which was carried out in a rural area, found that among 1545 study participants, 146 (9.4%) were current alcohol users of which 143 (97.9%) were males and 3 (2.1%) were females. The mean age of initiation of alcohol was 22.02 years and the maximum use of alcohol was between age group of 61 and 70 years (22%) although use among middle age group was common. There was a statistically significant association among male gender, age group, religion, smoking status, and alcohol use. In the study area, more than half are educated to high school or above. Among those who have education more than high school, the prevalence of alcoholism was less. Education, marital status, and socioeconomic status were found to have no significant association with alcohol use.

In the United States, 86.3% of adults reported that they consumed alcohol at some point in their lifetime; and 55.3% consumed alcohol in the previous month according to the National Institute on Alcohol Abuse and Alcoholism Facts sheets.[6]

In a study conducted by Eashwar V M *et al.*, the prevalence of alcohol consumption among adults in an urban area in Kancheepuram district of Tamil Nadu was found to be 39% and among the consumers, 52.5% were hazardous/harmful drinkers. The mean age of initiation of drinking was found to be 24 ± 4 years.[7] A similar study conducted by Shashi Prabha Tomar *et al.* in a tribal area of Madhya Pradesh found that prevalence of overall alcohol use was 5.39%, alcohol consumption being more common among males and this association was found to be significant (8.26% among males and 0.95% among females).[8] Another study by Ganesh Kumar S *et al.* in a rural area of Tamil Nadu among 946 individuals aged above 10 years, 9.4% were current users of which 16.8% were males and 1.3% were females, the age of initiation of alcohol use being 25.3 ± 9.0 years. Middle age (15-44 years), male gender, illiteracy, lower education levels, and smoking were all independently associated with alcohol use.[9] Another study by Ramanan VV in rural Puducherry, among 2551 participants, found that the overall prevalence of alcohol use was 7.7%, majority of users (92.2%) were between 26 and 65 years of age and the mean age of first drinking was 23.6 ± 6 years.[10]

Binge drinking along with average volume of alcohol consumption is associated with increased risk of alcohol-related social consequences. A study by Kraus L in Germany found that 4.3% of population within 18 to 59 years had reported alcohol-related social problems. Alcohol-related social problems were more common among study participants with four or more binge drinking occasions during the previous month. In addition, the effect of average alcohol consumption was modified by frequency of binge drinking, that is, larger the frequency of binge drinking, stronger the relation with volume of alcohol consumption and alcohol-related social problems.[11] A study among elderly individuals by Anil Goswami in Haryana showed that 26% were regular users while 74% were occasional users.[12] Several factors influence the use of alcohol among individuals in the community. Apart from legal aspects, availability and social

factors such as negative behavior and income, there are other individual factors such as genetic, emotionally unstable, family problems, authoritative parenting style, and peer pressure.[13] Moreover, increased use of social media has exposed young adults to alcohol-related content, which influences their offline use of alcohol and risky drinking.[14] A study by Ramanan VV found that most of the participants drank to get relief from pain or tiredness and more than half had strained relations with their family members or neighbors.[10] In this study, however, peer pressure was found to be the most common influencing factor for initiating alcohol use. ASSIST scores revealed that among current alcohol users, almost a quarter, that is, 25.4% were regular alcohol users, 4.1% suffered from health or financial problems, whereas 4.8% had failed to carry out responsibilities on most days of the week. This reflects extent of problem of current alcohol use in Nellanad Panchayat and the need for effective intervention. According to ASSIST scores, identified that 99 (50.5%) of ever users required health education, 74 (37.8%), that is, more than a quarter of current users required counselling to drop the habit, whereas 23 (11.7%) had to be referred for de-addiction [Table 4]. These results although are significant in proportion, had included ex-users as well; hence, AUDIT findings could give a better idea regarding the current alcohol users.

This study through WHO AUDIT scores among current users revealed that a vast majority, that is, 95.8% of current alcohol users required health education [Table 5]. However, a small proportion had hazardous/harmful drinking practices of which according to AUDIT scores, 2.05% required advice, 0.7% required advice and counselling, whereas 1.36% required referral to a specialist. Similar results were found by Ganesh Kumar *et al.* in their study wherein 3.7% of alcoholics had hazardous or harmful use. A study by Rajeev. A *et al.* found that among 250 males, 12.8% were problem drinkers.[15]

In this study, the prevalence of ever use of alcohol among older adults above 60 years was 20.8%. According to Latanioti *et al.*, at-risk alcohol use among older adults is under-diagnosed by

primary care physicians, partially due to the lack of up-to-date epidemiological data.[16]

Conclusion

Alcohol use is an important public health problem in this rural area in Trivandrum. The prevalence of alcohol use among males is higher than females. Effective health education is the most required intervention which can help in reducing the burden of alcohol use in this area. The role of primary care physician is very important in organizing effective health education measures with help of his health team. The behavior change can be initiated and maintained with persistent motivation and support from primary care team.

Conflicts of interest

There are no conflicts of interest.

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Table 4: Intervention required among ever users as per ASSIST score (*n*=196)

Intervention as per ASSIST score	*n*	Percentage
Health education	99	50.5
Counselling	74	37.8
De-addiction	23	11.7

Table 5: Current alcohol users & the interventions according to AUDIT score (*n*=146)

Interventions required among users as per AUDIT score	*n*	Percentage
Education	140	95.8
Advice	3	2.05
Advice and counselling	1	0.7
Referral to specialist	2	1.36

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