

## Original Research Article

# Prevalence of alcohol use among high school students, the pattern of consumption and the physical circumstances associated with alcoholism in an urban area of Kerala, India

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## ABSTRACT

**Background:** The present study was conducted to estimate the prevalence of alcoholism among high school students, the pattern of consumption and the physical circumstances lead them to alcoholism.

**Methods:** This study was done as a cross sectional study in the high schools of Pagappara PHC area which is the urban health training centre attached to Government medical college Thiruvananthapuram, Kerala, India. Sample size was calculated based on the prevalence of a previous study conducted in Kottayam district Kerala and estimated as 300. Data was collected using a pre tested questionnaire through interview technique. Data entry was done in SPSS 16 and percentages were calculated to express the results.

**Results:** The prevalence of drinking among the high school students was 21% and 1% of students were regular drinkers. Among those consumed alcohol 38.15 have used it before the age of 10 years. 61.9% started drinking for experimentation and beer was commonly used type (71%).

**Conclusions:** According to this study 21% of students have consumed alcohol and 1% is regular users of alcohol. Thus, there is a dire need to intervene.

**Keywords:** High school students, Pattern of drinking, Prevalence of drinking

## INTRODUCTION

Alcohol use among adolescence and young adulthood remain a public health problem all over the world. According to the global status report on alcohol and health by WHO 2014 about 3.3 million death in 2012 are estimated to have been caused by alcohol consumption.<sup>1</sup> This corresponds to 5.9 % of all deaths or 1 in every 20 deaths in the world. About 5.1 % of global burden of diseases and injury was attributable to alcohol. Globally 38.3% consumes alcohol. On an average, an individual over 15 years of age consumes 6.2 litres of alcohol annually.

Global status report on alcohol health by WHO 2014 also reveals that alcohol consumption has raised in India between the periods of 2008-2012. According to it around 30 % of total population of India consumes alcohol. The per capita consumption in the country increased from 1.6 litres in 2003-2005 to 2.2 litres in the period 2010-2012.

The scenario in Kerala is more alarming. Kerala led the states in terms of alcohol consumption.<sup>2</sup> A person over 15 years of age consumes about 8.3 litres per annum on an average in the state according to alcohol and drug information centre (ADIC ) in India.<sup>2</sup>

The most alarming trend is that people are beginning to drink at younger ages over the last few decades. The average age of initiation of alcohol use has reduced from 28 years during 1980s to 17 years in 2007.<sup>3</sup> The percentage of drinking population aged below 21 years has increased from 2% to more than 14 % in the past 15 years in Kerala.<sup>4</sup> Many studies have also revealed that the early age of initiation of alcohol use is associated with alcohol abuse or dependence. It is also associated with other risk taking behaviours and can lead to many social problems.

The declining age at onset of alcoholism is a major concern in Kerala also. Hence a study was taken up with the objectives of estimating the prevalence of alcoholism among school children and also their pattern of consumption of alcohol and the physical circumstances lead them to drink.

## **METHODS**

### ***Study design***

This study was conducted as cross sectional study to describe the prevalence of alcoholism among high school students and their pattern of drinking and the physical circumstances lead them to drink

### ***Study setting***

The study was conducted in 3 high schools of Sreekaryam ward under field practicing area of Pangappara urban health training center attached to Government medical college Thiruvananthapuram, Kerala, India.

### ***Study subjects and study period***

The study subjects were male high school students in the classes 8,9 and 10 standards. The study was done during 1st October to 31<sup>st</sup> December 2015.

### ***Sample size and sampling technique***

Sample size was calculated according to a study done at Kottayam district Kerala by Dr. Geetha Devi, Department of community medicine.<sup>5</sup> The prevalence of ever use of alcohol among the students was found to be 33.3%. So, setting the prevalence at 30% and the allowable error 5% of prevalence the sample size was calculated as 233 and this was rounded to 300.<sup>6</sup>

The three high schools present in the sreekaryam ward was included in the study. 100 male students from each school studying in 8, 9 and 10 classes and those present in the day of visit were selected by simple random technique based on the attendance register as the sampling frame. The subjects were included in the study after obtaining the consent. The study subjects were thanked for their co-operation for the study.

### ***Ethical considerations***

Informed consent was translated in to the regional language (Malayalam) and a written informed consent was obtained from all the participants after explaining the purpose of this study. Institutional ethics committee approval was obtained from Government medical college Thiruvananthapuram as a student project.

### ***Study tool***

Pre-tested structured questionnaire was used to collect the data.

### ***Defenition of main study variables***

#### ***Alcohol***

Any type of beverage (toddy, beer, brandy, rum, whisky) taken for the purpose of intoxication.

#### ***Alcohol consumption***

Any person who has consumed any type of beverage (toddy, beer, brandy, rum, whisky) more than two times for the last one month of survey irrespective of the amount consumed.

### ***Data collection***

The study was conducted after obtaining the consent from the headmasters of the schools. The date of visit was informed to the school authorities 3 days prior to the visit. On the day of data collection, the students were addressed by the headmaster followed by the researchers and the purpose of research was explained to them. The participants were assured of the anonymity and confidentiality of information after which data was collected one to one interview technique.

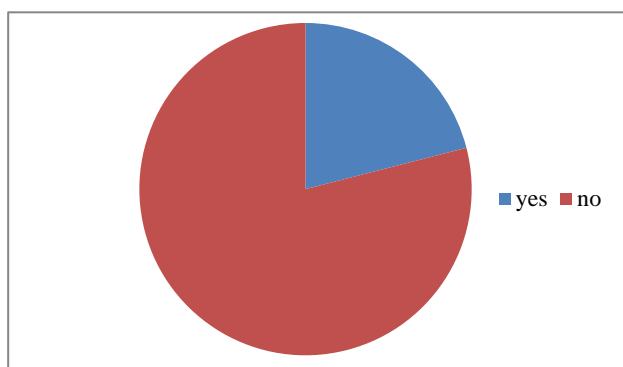
## **RESULTS**

A school based cross sectional study was under taken to estimate the prevalence of alcoholism among the high school students and also the pattern of drinking and the physical circumstances lead them to drink and the following observations were made from the study.

Age distribution of study population, about 9 (3%) was below 12 years of age and 249 (83%) in the age group 13-15 years and 42 (14%) above 15 years of age, education of father and mother 70% of the fathers having education below SSLC whereas only 60% of mothers having education below SSLC. Among the study population 120 (44%) is having alcoholic father but 132 (47%) got any one member in the family is alcoholic including father.

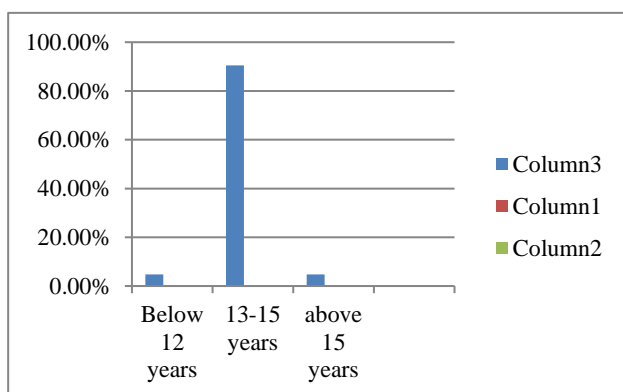
**Table 1: Socio demographic profile of study population.**

Age	Number	%
Below 12 years	9	3
12-15 years	249	83
Above 15 years	42	14
Total	300	100
<b>Education of father</b>		
Below SSLC	210	70
Above SSLC	90	30
Total	300	100
<b>Education of mother</b>		
Below SSLC	180	60
Above SSLC	120	40
Total	300	100
<b>Having alcoholic father</b>		
Yes	132	44
No	168	56
<b>Having any family member alcoholic</b>		
Yes	141	47
No	159	53



**Figure 1: The prevalence of alcohol use among the study population.**

Among the study population 63 (21%) has used alcohol more than two times in past one month irrespective of amount consumed.



**Figure 2: Age distribution of subjects according to alcohol use.**

The age distribution of subjects those who consume alcohol shows about 4.76% of subjects are below the age of 12 years and 90.48% of subjects were in the age group 13-15 years and 4.76% was above 15 years of age.

**Table 2: Age of initiation and the pattern of drinking among those who consumed alcohol.**

Age of consuming alcohol for first time	Number	%
Below 10 years	24	38.1
10-15 years	33	52.4
Above 15 years	6	9.5
<b>Type of drink consumed by the subjects</b>		
Toddy	6	9.5
Beer	45	71.4
Rum /brandy	9	14.3
Whisky	3	4.8
<b>Amount of alcohol consuming at a time</b>		
1 to 2 drinks	48	76.2
More than 2 drinks	15	23.8
<b>Source of alcohol</b>		
Beverage	42	66.7
Friends	15	23.8
Others	6	9.5
<b>Subjects having daily craving for drinking</b>	1	1.58

**Table 3: The circumstances lead the students to take alcoholic beverages.**

Person who introduced to drinking	Number	%
Family member	30	47.6
Self	24	38.1
Friends	9	14.3
<b>Having alcoholic father</b>		
Yes	45	71.42
<b>Having any alcoholic family member including father</b>		
	47	74
<b>Occasions of drinking</b>		
Family functions	36	57.1
Night	21	33.4
School hours	6	9.5
<b>Reasons for starting drinking</b>		
Experimentation	39	61.9
Perception as cool	9	14.3
Peer pressure	12	19
Relief from grief	3	4.8
<b>Drinking openly</b>		
	33	52.4
<b>Drinking habit known to family members</b>		
	39	61.9
<b>Drinking in groups</b>		
	42	66.7

Among those who consumed alcohol, the first consumption of alcohol was, 24 (38.1%) of students consumed alcohol before the age of 10 years and 33

(52.4%) between the age group 10-15 years and 6 (9.5%) above 15 years. The common beverage used was beer among 45 (71.4%) followed by rum/brandy 9 (14.3%). The amount of beverage used by students at a time was, up to 2 drinks in 48 (76.2%) but about 15 (23.8%) has consumed more than 2 drinks at a time (one drink was about 30 ml). The main source of alcohol was beverage out let 42 (66.7%) followed by friends 15 (23.8%) and others from family members.

Among those who have consumed alcohol the person who introduced drinking was a family member in 30 (47.6%) students and self-drinking by 24 (38.1%) and by friends in 9 (14.3%).

Those who consumed alcohol 45 (71.42%) got alcoholic father and 47 (74%) got an alcoholic member in the family including father. The main occasion of drinking was family function in 36 (57.2%) of cases and during night in 21(33.4%) and even 6 (9.5%) is drinking in school time.

Reason for starting drinking, 39 (61.9%) started the habit as experimentation and 9 (14.3%) to get a perception of cool and 12 (19%) due to peer pressure 3 (4.8%) to get relief from grief.

Among those who are consuming alcohol, 33 (52.4%) are drinking openly, means that others (friends, other people around) knows that they are drinking and in 33 (61.9%) the family members are aware that they have consumed alcohol. About 42 (66.7%) students are drinking in groups and one student got daily craving for alcohol.

## DISCUSSION

This study was a school based cross- sectional study done by using simple random sampling method which ensures generalizability of results to the study population. The present study shows the prevalence of alcoholism, the pattern of use and circumstances lead them to use alcohol.

### *Socio demographic profile of study population (Table 1).*

The three important socio demographic variables collected from the students were educational status of parents and alcoholism in father and any alcoholic member in the family including father. As Kerala is a state having very high female literacy, 40% of study population having mothers with education above 10<sup>th</sup> standard with compared to fathers (30%). Among the 300 students studied, 44% got alcoholic father and 47% got an alcoholic member in the family including father. Alcoholism is a family diseases and any one alcoholic member in the family can influence others also. Study conducted by Nishanth M among young people between age 15-24 years using self-administered questionnaire 31.3% have reported that they have an alcoholic member

in the family.<sup>6</sup> NFHS 3 data also shows the prevalence of alcoholism among men in Kerala is about 45.2%. If we consider the study population as cross section of Kerala population the prevalence of alcoholism in male members is par with this results.

### *Prevalence of alcoholism (Figure 1).*

Prevalence of alcoholism among school children in the present study was 21%. Many studies have done in different states to estimate the prevalence of alcoholism in younger age groups. Study done by Mohanan P et al at Udipi district Karnataka in 2011 the prevalence they got was only 5.7% much below than the present study.<sup>7</sup> Another study carried out by Devi G et al in Kottayam district of Kerala the prevalence of alcoholism among school children was around 33.3% but the definition used was ever use of alcohol.<sup>5</sup> Study by National drug dependence treatment centre (NDDTC ) and the All India institute of medical sciences Delhi among children between 5-18 years of age reported 74 % of children got some kind of addiction.

### *Age of initiation of alcohol and pattern of drinking (Figure 2, Table 2).*

Age of initiation of alcohol is very important. According to the global status report on and health the early initiation of alcohol use before the age of 14 years is a predictor of impaired health status and associated with increased risk of alcohol dependence and abuse later ages. In the present study 38% of study population has consumed alcohol before the age of 10 years. Declining age of alcoholism is also a concern in Kerala. A time trend study conducted by Unnikrishnan et al among patients attending the de addiction clinic in Government Medical College Thiruvananthapuram, there was significant linear decline in the age at onset of alcohol use over the years.<sup>8</sup> The mean age at onset of alcohol use has declined from 27 to 17 years comparing between the 1950 birth cohort to post 1985 birth cohort. This study also reveals that the younger age of alcohol initiation was strongly related to alcohol abuse and dependence. Another study conducted by Tumge L about prevalence and pattern of alcohol use among college students the mean age initiation of alcohol use was 16 years and about pattern the important type of beverage used was beer and important source of beverage was liquor shop.<sup>9</sup>

### *Circumstances associated with the drinking behaviour.*

The surveys about the prevalence of alcohol use generally do not gather information about situational or the contextual conditions associated with drinking. These conditions got significant importance in planning appropriate interventions and policies. In the present study many family level factors are associated with drinking. These factors includes person who introduced drinking, presence of alcoholic family member, father alcoholic, main occasion of drinking, Family members

aware of drinking habit. Many other studies also revealed that all these family factors got influence on the drinking habit.<sup>6,10</sup> Study by Tunge L also got similar findings. Among 24.5% of cases family member was present at the time of initial drink and the first place of consumption was home and family function.

## CONCLUSION

The study high lights an increased prevalence of alcoholism among school children, an early age of initiation of alcohol use and the family level factors associated with alcoholism. All these factors got individual, social, economic and policy implications. Drinking pattern is changing in Kerala with increased social acceptability and accessibility of alcohol. So further studies are needed for exploring the mediating or casual factors for habits and appropriate interventions.

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