Original Research Article

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An epidemiological study on alcohol consumption and knowledge of its harmful effects on human health among rural adult population of adopted villages covered under field practice area of a private medical college in Udaipur, Rajasthan

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ABSTRACT

Background: Consumption of alcohol among adults is a serious public health issue worldwide. However the knowledge of adverse effects of alcohol consumption on human health is very negligibly less in small towns and villages of India. Present study was conducted to determine the extent of alcohol intake and the knowledge of its adverse effects on human health among adult population.

Methods: A cross-sectional study was carried out on randomly selected 400 rural adults from a field practice area of private medical college, Udaipur.

Results: Prevalence of alcohol consumption was found to be (47.25%) with (49.36%) males and (39%) females. More than half of drinkers (55.9%) were belonging to 30-39 age group. Country liquor was preferred by (68.88%) and only (17.77%) consume English (IMFL). (56%) of alcohol consumers were drinking alcohol for more than a year. Most of the drinkers (49%) were induced by their friends, (24%) were induced/influenced by their parents. (42.25%) drinkers had knowledge of harmfulness of alcohol drinking; however the awareness per se did not have statistically significant effect for alcohol consumption. Results showed that the knowledge of excessive intake of alcohol can cause harmful effects on human health like Infertility to woman, irregular menstrual cycle, cancer were statistically significant (p<0.05) gender wise, while effects like depression, sleep disturbances, alcoholic hepatises, liver disease, malnutrition were statistically not significant (p>0.05).

Conclusions: There is a need to enhance awareness on adverse effects of alcohol and at least bring down consumption level among heavy drinkers through peer group/family/community involvement.

Keywords: Alcohol consumption, Inducing factors, Harmful effects

INTRODUCTION

Alcohol consumption is prevalent all over world since ages and in many societies it is a normal customary habit where as in many it is considered as taboo and prohibited. Consumption of alcohol has increased immensely in recent decades particularly among young adults. According to a WHO report an estimated about 2 billion

people worldwide consume alcoholic beverages and about 2.3 million people die from alcohol related causes.¹ Over the past 30-40 years, increasing percentages of young people have started to drink alcoholic beverages, their alcohol consumption has increased in quantity and frequency and the age at which drinking start has declined.² Alcohol impairs driving ability and increases risk of accidents, alcohol is the direct cause of 30-50% of

severe road accidents.² Alcohol is considered etiologic factor in suicide, accidents and injuries, and a risk factor in Violence including domestic violence, poverty, and high risk sexual behaviour. Alcohol consumption and development of obesity is positive among men and negative among women. Alcohol is also considered as a carcinogen resulting in cancer of oesophagus, mouth, pharynx and larynx.³ Harmful use of alcohol was the cause for 5.9% of all deaths and 5.1% of global burden of disease and injury.⁴ Alcohol consumption has increased more in rural strata because of rise in un-employment, low economic status, making impression on society or may be as a reason of some customs, etc. There is a dearth of data on the hazardous use of alcohol in rural India.⁵

Excessive consumption of alcohol can negatively affects human health throughout the lifespan.

A medical graduate 'be familiar with basic, clinical and translational research'. Present study has been carried out from a field practice area of a medical college as part of educational tool and to expose undergraduate medical students in research methodology. Research project was designed and executed through active involvement of a group of students.

Objective

- To assess the prevalence and consumption pattern of alcohol among adult rural population of a village.
- To analyze the awareness of knowledge of harmful effects of alcohol consumption among alcohol drinkers.

METHODS

Study design and data collection

This cross sectional study was conducted during August to December 2017 in Villages Bhilo ka Bedla, Pratappura, Manapura, Rabariyo ki Dhani in Badgaon Tehsil of Udaipur, Rajasthan; which are rural field practice area of Community Medicine Department of Pacific Medical College and Hospital Udaipur for undergraduate MBBS students teaching. The data was collected by house to house visit after explaining them the purpose of study and on obtaining informed consent, using pre-tested interview questionnaire; read/explained in their language with the help of local medico-social worker of our department Mr. Ganesh Salvi and Mr. Durga Shanker Dangi.

Sample size

In aggregate village have a population of 2590 as per baseline data obtained through village survey. Out of total adult population in village 400 adults were selected randomly.

Inclusion criteria

Inclusion criteria were adults of age group >20 years.

Exclusion criteria

Exclusion criteria were those who were not willing to participate and age <20 years.

Data analysis

Collected data was compiled on MS Excel and analyzed using appropriate statistical methods and tests like descriptive statistics, t test, chi-square test. Significance of different factors was tested on the basis of P value <0.05.

Ethical clearance

Prior permission/ clearance of Institutional ethics committee were obtained. No financial grant was sought/ received since no significant expenses were incurred except for institutional transport and stationary.

RESULTS

Table 1 shows that the total study participants from 2590 total village population were 400, of which 316 were male and 84 were female. The overall prevalence of alcohol use was (47.25%; out of which male (49.36%) and female (36%)). The highest prevalence (55.9%) of alcohol use was observed in the age group of 30-39 years than any other age group, among married people (46.39%) and those belonging to joint families (57.40%). Primarily educated and Illiterates had high prevalence of 92.85% and 100% respectively. Household workers, farmers/labourers, and businessman group had high prevalence of 88.05%, 42.03%, and 15.79% respectively.

Table 2 shows mean age of study population, total drinkers, adult male drinkers and female drinkers is 36.41 years, 34.69 years, 35.08 and 32.17 years respectively. Majority of drinkers are in age group 30-39 years, followed by younger 20-29 years age group in total study population. 54.5% males in 20-29 age group are into drinking alcohol as compared to only 25% females in this age group. However, in study population of 30-39 years consumption of alcohol was almost similar i.e. 65.6% and 60% respectively in males and females.

Table 3 shows that the majority of the drinkers (68.88%) preferred Desi Daru followed by (17.77%) English (IMFL). (56%) of drinkers were drinking since more than a year. Most of them (69%) were drinking to get relief from stress. (49%) drinkers were induced by their friends followed by (24%) were induced by their parents.

Table 4 shows that out of 169 (42.25%) people in study population, who were aware about the harmful effects of alcohol consumption, 89 (47%) were drinkers and 80

(38%) were non- drinkers. Majority (57.75%) were not aware about ill effects of alcohol. Awareness on alcohol

associated diseases does not have significant effect on the consumption of alcohol by adults.

Table 1: Sociodemographic characteristics of the adults in Udaipur.

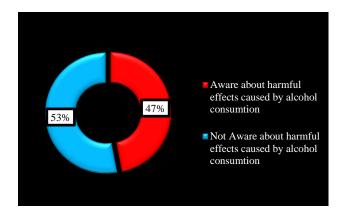
Characteristics	Number (400)	Alcohol users (N=189)	Prevalence (%)
Gender			
Male	316	156	49.36
Female	84	33	39
Age groups (in years)			
20-29	120	56	46.7
30-39	136	76	55.9
40-49	72	28	38.9
50-59	44	20	45.45
60 & above	28	9	32.14
Religion			
Hindu	370	180	48.64
Muslim	30	9	30
Others	0	0	0
Marital status			
Unmarried	35	20	57.14
Married	360	167	46.39
Widow	5	2	40
Type of family			
Joint	162	93	57.40
Nuclear	88	7	7.95
Extended	150	89	59.33
Education			
Illiterate	2	2	100
Primary	70	65	92.85
Secondary/higher secondary	321	119	37.07
Graduate/post graduate	7	3	42.85
Occupation			
Household works	67	59	88.05
Farmer/labourer	295	124	42.03
Businessman	38	6	15.79

Table 2: Age wise distribution of alcohol consumers among male and female study group.

Ago	Male			Female			Total	Total			
Age group (in years)	No. of adults	No. of alcohol consumers	%	No. of adults	No. of alcohol consumers	%	No. of adults	No. of alcohol consumers	%		
20-29	88	48	54.5	32	8	25	120	56	46.7		
30-39	116	64	65.5	20	20	60	136	76	55.9		
40-49	56	24	42.9	16	5	25	72	28	38.9		
50-59	44	16	36.4	0	0	0	44	16	36.4		
≥60	12	4	33.3	16	0	0	28	4	14.3		
Total	316	156	49.4	84	33	39.28	400	189	47.25		

Table 5 shows that the level of extent to which adult study population was aware about the adverse effects of excessive alcohol consumption on human health. Findings shows that male and female adults were significantly differ in their awareness of the adverse effects of heavy alcohol drinking on human health:

Excessive drinking can increase the risk of various forms of cancers (t=11.92, p<0.05); Woman's menstrual cycle and fertility get adverse effects by heavy alcohol intake (t=23.89, p<0.05); alcohol abuse can suffer from malnutrition (t=4.56, p<0.05).



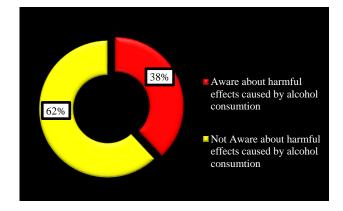


Figure 1: Awareness about harmfulness among alcohol drinkers.

Figure 2: Awareness about harmfulness among alcohol non-drinkers.

Table 3: Reasons and pattern of alcohol consumption (n=189).

W 111	Alcohol users				
Variable	N (%)				
Type of alcohol consumed					
Desi Daru	130 (68.88)				
English (IMFL)	34 (17.77)				
Both	25 (13.33)				
Duration of alcohol consumption (months)					
<6	19 (10)				
6-12	34 (18)				
>12	106 (56)				
Don't remember	30 (16)				
Frequency of alcohol consumption					
Occasionally	25 (13)				
Sometimes	85 (45)				
Frequently	55 (29)				
Regularly	24 (13)				
Injuries as a result of drinking					
No	106 (56)				
Yes (during the past one year)	51 (27)				
Yes (not during the past one year)	32 (17)				
Number of pegs drunk/sitting (pegs)					
1-2 pegs	32 (16)				
3-4 pegs	62 (33)				
5-6 pegs	44 (24)				
7+ pegs	51 (27)				
Inducing factors					
Friends	92 (49)				
Parents	45 (24)				
Siblings	0 (0)				
Others	51(27)				
Reason for intake					
Stress relief	130 (69)				
Making impression on others	4 (2)				
Enjoyment	39 (20)				
Increase efficacy to work	17 (9)				

Table 4: Awareness on disease causing potential of alcohol among study group adults.

Awareness on alcohol as a cause for many diseases	If Yes N (%)	If No N (%)	Total N (%)
Alcohol drinkers	89 (47)	100 (53)	189 (100)
Alcohol non-drinkers	80 (38)	131 (62)	211 (100)
Total	169 (42.25)	231 (57.75)	400 (100)

Chi-Square 0.411868, p≥0.05.

Table 5: Means, percentages and statistical t-test of the level of extent to which study population were aware of the harmful effects of alcohol consumption on human health.

Harmful effects caused by alcohol consumption	Male (N=156)			Female (N=33)			P value	Dagisian
	M±SD	%	Extent	M±SD	%	Extent	P value	Decision
Excessive drinking can increase the risk of various forms of cancers	2.89±0.56	57	SA	10.57±0.60	22	NA	0.000	S
Liver diseases can be caused by alcohol	3.22±0.44	64	SA	30.33±0.50	67	SA	0.454	NS
Heavy alcohol use causes alcoholic hepatitis	2.78±0.34	52	EA	20.72±0.46	59	EA	0.199	NS
Woman's menstrual cycle and fertility get adverse effects by heavy alcohol intake	3.46±0.46	61	MA	20.04±0.50	45	EA	0.000	S
Heart problems can be caused by heavy alcohol drinking	3.59±0.78	63	MA	30.48±0.80	57	MA	0.210	NS
Depression, Sleep disturbances, gum diseases and tooth decay are the most common side effects of excessive alcohol drinking.	2.22±0.81	43	EA	20.25±0.78	39	EA	0.089	NS
Alcohol abuse can suffer from malnutrition.	3.92±0.62	68	EA	30.02±0.59	59	SA	0.000	S

EA= Extremely aware, MA = Moderately aware, SA = Slightly aware, NA= Not aware, S= Significant, NS=Not significant, $M\pm SD=Mean\pm Standard$ deviation.

However, findings shows that no significance difference were found for male and female adults having similar awareness about the effects of heavy alcohol drinking on human health: liver diseases can be caused by alcohol (t=1.35, p>0.05); heavy alcohol use causes alcoholic hepatitis (p>0.05); heart problems can be caused by heavy alcohol drinking (t=0.00, p>0.05); depression, sleep disturbances, gum diseases and tooth decay are the most common side effects of excessive alcohol drinking (t=0.84, p>0.05).

DISCUSSION

Present study is an attempt to find the prevalence of alcohol consumption among the adults and knowledge of its harmful effects among adult study population in villages with a sample size of 400 individuals selected randomly through home visit. In our study, (47.25%) revealed to be consuming alcohol. Similar (46.7%) prevalence was found by John A in rural southern India. Prevalence of (25.11%) in Urban and (60%) in Rural areas was detected by Singh et al. Lower prevalence (35.7%) was found in study conducted by Dutta et al at

Tamil Nadu and (27.7%) in Chandigarh by Verma et al.^{8,9} A National Health survey 2004 revealed prevalence of alcohol at 21.4%. Meena et al found (19.78%) prevalence of alcohol consumption in their study at Rohtak which is quite low perhaps due to difference in age profile of their study group which comprised of subjects above 14 years and urban set up. 11 Mean age of total drinkers in study population, adult male drinkers and female drinkers is 34.69 years, 35.08 years and 32.17 years respectively. Majority of drinkers (55.9%) were in age group 30-39 years, followed by (46.7%) in 20-29 years age group in total study population. Meena et al also found (42.41%) users in younger 25-34 years age group. 11 On the contrary in their study Ramanan observed highest prevalence (17.1%) in age group 46-55 years. (54.5%) males in 20-29 years age group are into habit of drinking alcohol as compared to only (25%) females in this age group.⁴ Similar observations were made by Bilesha et al who in their study at Sri Lanka, among 15-19 age group found (21.2%) males and only (3.3%) among females. 12 However, in our study population of 30-39 years consumption of alcohol was almost similar i.e. (65.6%) and (60%) respectively in males and females.

In our study we found that (68.88%) drinkers consume Desi daru (country liquor). (75%) country liquor consumption was reported by Prakash et al, on the contrary only (26.9%) in a study in rural Pondicherry by Ramanan and Singh preferred country liquor perhaps due to higher socioeconomic status. Cost factors, availability, local trends, and quick effect could be possible reasons for higher proportion of country liquor use.

There were about (4%) whom started consuming alcohol during past 6 months and (18%) started consuming alcohol in past 6-12 months, Whereas majority were chronic drinkers (56%) were consuming alcohol for over 12 months and other (22%) did not remember/reveal the exact duration. While new starters may not be addicted and likely to be amenable to preventive measures and give up early with intervention whereas chronic users will need more intense counselling/ de-addiction measures.

We found that (13%) adults consumes alcohol occasionally and (45%) consume sometimes (2-4 times a month), whereas only (13%) consumes regularly/almost daily/more than 4 times in a week. Ramanan et al from their study stated that (28%) consumed alcohol monthly, whereas over (32%) alcohol consumers from western India drank on at least 6 day per week as reported by Prakash et al. A very high proportion (82.9%) of regular users were consuming almost daily in rural areas of Punjab. 4.7

While Ramanan et al study showed that (91%) adults consumed 3-4 pegs in a single sitting. Girish et al study detected overall 17% heavy users, in our study we found that over 50% were heavy drinkers (24% consume 5-6 pegs and 27% consume 7+ pegs at a time) as compared to 10% regular and excessive (6-8 pegs) reported by Chavan et al. Moderate drinkers (33%) consume 3-4 pegs whenever drinking and only 16% are low risk drinkers who restrict it to only1-2 pegs alcohol at a time. Al.15

Majority of the alcohol consumers i.e. (49%) were induced to consume alcohol by their friends; (24%) of Adults had started drink seeing alcohol abuse by their father/parents; (27%) of Adults were indulged of their own or by other factors like society/media/ads/movies etc. (32.1%) alcohol consumers were influenced by friends in Ramanan et al study. In the study of Meena et al at Rohtak, (23.16%) cases who had family history of alcohol users father was abusing alcohol and (26.61%) cited societal reason for drinking.

Stress relief is the most common reason cited by (68.8%) for taking alcohol as compared to (51.1%) in Ramanan et al study for getting relief from pain/strain/ tiredness which is less than that of our study. A good (20%) acknowledged being taking drinks for enjoyment, and only a small (2%) took it for making impression on others. Habituation and peer pressure were found to be key reasons for alcohol use by Girish. ¹⁴

Awareness on alcohol associated diseases/ harmful effects do not have significant effect on the consumption of alcohol by adults. Majority (60%) were not aware about ill effects of Alcohol however a good proportion (40%) study population were aware about the harmful effects of alcohol consumption yet half of them consume liquor. Sachdeva in a study at rural areas of Haryana also reported a large number (43.5%) subjects to be having knowledge regarding adverse effects of alcohol consumption which is almost similar to findings in our study. ¹⁶

Harm caused by alcohol is varied and may range from strained relationship with family and friends, neglecting family and work (Meena et al), to Alcohol dependence problems with about one-fifth had chronic health problems like diabetes mellitus and hypertension (Ramanan et al), to injuries/disability or death. In our study (27%) had injuries associated with alcohol consumption during past one year and another (17%) had alcohol associated injuries earlier.

The present study showed that the level of extent to which adult study population were aware about the adverse effects of excessive alcohol consumption on human health. Findings shows that male and female adults were significantly differ in their awareness of the adverse effects of heavy alcohol drinking on human health: Excessive drinking can increase the risk of various forms of cancers; Woman's menstrual cycle and fertility get adverse effects by heavy alcohol intake. Table 3 shows that the level of extent to which adult study population was aware about the adverse effects of excessive alcohol consumption on human health. Findings shows that male and female adults were significantly differ in their awareness of the adverse effects of heavy alcohol drinking on human health: Excessive drinking can increase the risk of various forms of cancers (t=11.92, p<0.05); Woman's menstrual cycle and fertility get adverse effects by heavy alcohol intake (t=23.89, p<0.05); Alcohol abuse can suffer from malnutrition (t=4.56, p<0.05).

However, findings shows that no significance difference were found for male and female adults having similar awareness about the effects of heavy alcohol drinking on human health: liver diseases can be caused by alcohol (t=1.35, p>0.05); heavy alcohol use causes alcoholic hepatitis (p>0.05); heart problems can be caused by heavy alcohol drinking (t=0.00, p>0.05); depression, sleep disturbances, gum diseases and tooth decay are the most common side effects of excessive alcohol drinking (t=0.84, p>0.05); Alcohol abuse can suffer from malnutrition (t=4.56, p<0.05). However, findings shows that no significance difference were found for male and female adults having similar awareness about the effects of heavy alcohol drinking on human health: Liver diseases can be caused by alcohol (t=1.35, p>0.05); Heavy alcohol use causes alcoholic hepatitis (p>0.05); heart problems can be caused by heavy alcohol drinking (t=.00, p>0.05); depression, sleep disturbances, gum diseases and tooth decay are the most common side effects of excessive alcohol drinking (t=0.84, p>0.05). These outcomes supports the study by Eze et al, which shows that excessive alcohol increases high risk of various diseases. ¹⁷⁻¹⁹

According to WHO, world 3rd largest risk factor for disability and diseases is now become alcohol consumption, with 4% of all global deaths attributed to alcohol.²⁰

CONCLUSION

The present study was conducted out in Udaipur with the aim to find out prevalence of alcohol consumption among adults and to analyse the knowledge of drinkers regarding harmful effects of alcohol consumption on human health. In study population (47.25%) of adults consume alcohol. Majority of alcohol drinkers were in younger age groups of 20-29 and 30-39. In present study, Friends were found to be the main inducing factor for indulgence into alcoholic beverages (mainly country liquor called as Desi Daru). Main reason for taking up alcohol consumption was to relieve stress apart from social customs and for enjoyment purposes. Although only (13%) consume alcohol regularly/almost daily however over (50%) are heavy drinkers (more than 5-6 pegs at a time which may be quite harmful. Awareness on harmful effects of alcohol is low at (42.25%) and worst part is that those who despite being aware of harmful effects and even involved in accident/injury directly attributable to alcohol almost (47%) chose to continue drinking.

There is a need to enhance awareness on adverse effects of alcohol and at least bring down consumption level among heavy drinkers through peer group/family/community involvement. Last but not the least good recreation avenues to divert/discourage youngsters from alcoholism.

Limitations

The study was conducted during the academic time period thus having short time for survey and data collection, we have taken sample of 400 rural adult populations for our study research.

Recommendations

The key argument for restricting the consumption of alcohol, and even prohibiting it, is the harm it can cause for health. As alcohol consumption causes many health problems and have higher mortality and morbidity, those who are dependent on alcohol may experience more stress and psychological distress. It also increases the risk for all type of affective and anxiety disorders which leads to violence and other economic problems. Therefore it is recommended that awareness among the people of rural area should be enhanced through small group discussions

like secondary school students, formal and non-formal leaders/ elders so that alcohol menace can be minimised. In conclusion, it may be appropriate to stat that total abstinence or prohibition to the extent which is achievable yet message should be there for each and every one consume with caution and responsibly and be aware of adverse impact on self/ family.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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