



ORIGINAL RESEARCH PAPER

Psychiatry

CLINICODEMOGRAPHIC AND PSYCHIATRIC MORBIDITY PROFILE OF MALE ALCOHOL/SUBSTANCE DEPENDENTS

KEY WORDS: Alcohol-dependence, Substance-dependence, Socio-demographic profile, Psychiatric comorbidity.

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| ABSTRACT | Objective: To assess the socio demographic profile of males with alcohol/ substance-dependence and to assess the burden of psychiatric comorbidities among them. |
| | Method: A total of 50 alcohol-dependent patients attending the de-addiction clinic were enrolled in the study. Their complete socio-demographic assessment was done and presence of psychiatric comorbidity was assessed through Structured Clinical Interview. Data was analyzed using SPSS 21 package. |
| | Results: Mean age of patients was 34.18±9.43 (Range 18-55) years. Majority (70%) were married, educated up to High school or above (56%), unemployed or laborers (66%), with monthly income <Rs 5000 (66%), Hindus (94%), living in a joint family (54%) in urban (60%) areas. Exactly half (50%) were alcohol-dependent only while remaining 50% were dependent on substance with/without alcohol. Cannabis and opioids were the most common substances used. Psychiatric comorbidity was seen in 38 (76%) patients. Psychosis (34%) and depression (28%) were the most common psychiatric comorbidities. Psychiatric co-morbidity was significantly associated with monthly income >Rs 5000/- and occupational complications. |
| | Conclusion: The present study showed a changing trend of alcohol-/substance-dependence among those with higher educational profile along with high prevalence of psychiatric co-morbidities. |

INTRODUCTION

Alcohol and substance abuse are one of the most important causes of healthcare burden. They account for a considerable amount of mortality too. Globally, alcohol alone is responsible for nearly 4% of deaths and 5% of global burden of disease. The problem of alcohol-use has affected almost all the age groups and different sections of society at different geographical locations with varying trends". In India, the pattern of alcohol use and substance dependence has showed a rapid transformation following economic reforms and globalization. In the changed scenario, exposure to different types of substances has increased tremendously while at the same time rapid increase in city bars and nightclubs throughout India has given a new shape to the problem. India acknowledged 115% increase in per capital alcohol consumption since 1980. With rapid changes in economy, the socio demographics of alcohol- and substance-users has also changed tremendously. Despite these changes, alcohol- and substance-users are primarily male. Studies have shown that the prevalence of alcohol use is more than six times higher in males as compared to that in females. Alcohol- and substance- dependence has shown a relationship with psychiatric morbidity both as a cause as well as an effect.

Incidentally, while alcohol- and substance-dependence is a huge problem yet only a handful of affected patients avail the healthcare facility to get rid of this problem which might affect both physical as well as mental health. There are a number of barriers restricting them from taking help of expert medical care. In view of the huge burden of the problem, it is envisaged that the problem be taken care at community level by identifying those socio-demographic groups who are at risk and to take initiatives specifically designed for the targeted population.

With this background, the present study was carried out to study the socio-demographic profile of alcohol- and substance-dependent male patients and to find out prevalence of psychiatric comorbidity among them.

MATERIAL AND METHOD

A total of 50 patients attending the de addiction clinic of Department of Psychiatry, Era's Lucknow Medical College, Lucknow were enrolled in the study after obtaining necessary

Institutional ethical clearance and after obtaining informed consent from the participants.

Alcohol/Substance-dependence was defined using DSM-4 criteria as a maladaptive pattern of drinking, leading to clinically significant impairment or distress, as manifested by three or more of the following occurring at any time in the same 12-month period:

- Need for markedly increased amounts of alcohol/substance to achieve intoxication or desired effect; or markedly diminished effect with continued use of the same amount of alcohol.
- The characteristic withdrawal syndrome for alcohol; or drinking (or using a closely related substance) to relieve or avoid withdrawal symptoms.
- Drinking in larger amounts or over a longer period than intended.
- Persistent desire or one or more unsuccessful efforts to cut down or control drinking.
- Important social, occupational, or recreational activities given up or reduced because of drinking.
- A great deal of time spent in activities necessary to obtain, to use, or to recover from the effects of drinking.
- Continued drinking despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to be caused or exacerbated by drinking.

Details regarding age, marital status, education, occupation, monthly income, religion, family type and location of residence were noted.

Nature and type of alcohol/substance-dependence was explored and categorized primarily into alcohol-dependence (Only alcohol dependence) and Other substance with/without alcohol-dependence.

All the patients underwent a psychiatric assessment by applying Structured Clinical Interview for DSM-IV-TR I & II (SCID I & II). Presence of psychiatric morbidity other than alcohol-/substance-dependence was classified using DSM-IV criteria.

Details regarding nicotine use (smoking/tobacco use) and history of any physical illness were obtained. Patients were

enquired regarding nature and type of complications owing to alcohol-/substance-dependence. History regarding previous attempts for abstinence along with duration of abstinence were also noted. They were also enquired regarding use of medical help/treatment during previous attempts for abstinence and reasons for relapse. Family history of alcohol/substance use was also enquired. Duration of alcohol/substance use was also noted.

Data so obtained was analyzed using Statistical Package for Social Sciences, version 21.0. Independent samples 't'-test and chi-square test was used to establish associations. A 'p' value less than 0.05 was considered to be significant.

RESULTS

Age of patients ranged from 18 to 55 years. Mean age of patients was 34.18±9.43 years. Majority (70%) were married. However, there were 14 (28%) single. Only 1 (2%) was divorced. Only 6 (12%) were illiterate, however, majority (n=28; 56%) were educated upto High school or above. Clerk/Paramedics/Shopkeepers and unskilled labourers/agriculturists comprised the most common occupational groups (n=13; 26%) each. There were 12 (24%) unemployed and 8 (16%) were skilled labourers. A total of 2 (4%) patients each were students and teacher/officer respectively. A total of 17 (34%) patients each had monthly income <Rs 2000/- and >Rs 5000/- respectively while 16 (32%) had monthly income in Rs 2000-5000/- range. Most of the patients (94%) were Hindus and majority (54%) lived in a joint family. Urban patients (60%) outnumbered the rural patients (40%) (Table 1).

Exactly half (n=25; 50%) were only alcohol-dependent. Among substance users, cannabis only (n=6; 12%) was most common followed by opioids (n=4; 8%). Alcohol with substance use was reported by 11 (22%) respondents – among these 5 (10%) used opioids with alcohol, 3 (6%) used alcohol with cannabis, 2 (4%) used alcohol with opioids and cannabis and 1 (2%) used alcohol with opioids and benzodiazepine. A total of 3 (6%) used opioids with cannabis (Table 2).

Other psychiatric comorbidities were seen in 36 (72%) patients. Among different psychiatric comorbidities, psychosis (n=17; 34%) was most common followed by depression (n=14; 28%). There was 1 (2%) patient each with anxiety, BPAD, dissociative trance and possession, MDE and insomnia respectively (Table 3).

Nicotine use was reported by 43 (86%) patients. Coexisting physical illness was reported by 26 (52%). Majority of respondents reported familial (92%) and occupational (82%) complications. There were 7 (14%) patients who reported legal complications too. Previous attempts for abstinence were reported by 37 (74%) patients. A total of 29 (58%) had made multiple attempts for abstinence. Among those reporting previous attempts of abstinence, majority (n=19/37; 51.4%) reported abstinence longer than 6 months. As many as 7 (18.9%) abstained for a duration ranging from 1 to 2 years. Family pressure (3.2%), self (27%) and medical complications (27%) were among the common reasons. Lack of money and accident were reported to be the reasons for previous attempts of abstinence by 7 (18.9%) and 3 (8.1%) of patients. However, only 16 (43.2%) reported taking treatment during abstinence. Most common reasons for relapse were reported to be craving (86.5%) and peer pressure (45.9%). Family history of substance use was reported by 25 (50%) patients. Majority of patients enrolled in the study (76%) were using alcohol/substance for more than 5 years (Table 4).

On evaluating the association between presence of other psychiatric morbidity with different demographic and clinical factors, monthly income and occupational complications were found to be significant (Tables 5 & 6).

None of the other demographic and clinical factors showed a significant association with presence of other psychiatric morbidity among alcohol/substance-dependent male patients.

DISCUSSION

The socio demographic profile of alcohol/substance dependents might help in understanding the genesis and progression of problem and thus in adopting appropriate strategies to minimize the physical and psychological impact of these disorders. The present study was conducted in an exclusive male population. As such prevalence of alcohol/substance use is less common among women throughout the world as well as in India. Most of the studies in India have exclusively been conducted among males⁶ or have reported the proportion of females to be negligible. In fact, in present study, no gender-specific assessment was targeted, but in fact owing to absence of any female-patient, the assessment has become an exclusive male assessment. In present study, the mean age of patients was 34.18±9.43 years. Majority of patients were in age range 21-40 years (74%). Similar to findings of present study, Reddy *et al.*⁶ also reported the mean age of their patients as 37.2 years while Ranjan *et al.* reported the mean age of alcohol and substance users in their study as 32.8 years. Sarkar *et al.*¹¹ in their study found 85% of patients in 20-49 years age range. The findings of present study and all these studies reflect that the problem of substance/alcohol-dependence and subsequent need for medical assistance is generally most expressed young adults in most productive span of their life, i.e. between 30 and 40 years of age.

In present study majority of patients were married (70%), were educated upto High school or above (56%), were unemployed or labourers (66%), had monthly income <Rs 5000/- (66%), Hindus (94%), living in joint family (54%) and urbanites (60%). Compared to present study, Reddy *et al.*⁶ in their study reported majority of patients as married (62%), from rural areas (77.5%), nuclear families (90%), educated below High school (80.0%) and unemployed/labourers (85.0%). In another study, Vignesh *et al.* reported the mean age of patients as 43 years, with majority belonging to a nuclear family (90%), rural areas (68%), married (90%), educated upto primary school (51%) and labourers (99%). Sarkar *et al.*¹¹ in their study reported majority of their patients as males (98.93%), in age range 20-40 years (62.03%), married (82.35%), illiterate or educated upto primary level (64.71%) and labourers (63.64%). Ranjan *et al.*¹² on the other hand in their study reported the mean age of patients as 32.8 years, majority being Muslims (61.6%), educated upto middle (72.2%) and unemployed/labourers (80.3%). The findings in general indicate an agreement over male dominance, age of patients, their marital status and occupational profile. As far as education is concerned, the present study found majority of patients to be educated upto high school or above which is in contrast with the findings of other studies^{6,11,12,13}. One of the reasons for this could be the dominance of urban patients. Similar to findings of present study, Khanna *et al.* who conducted their study among urban patients in Rohtak city, also found dominance of those educated upto matriculation and above (54.4%). The relationship between alcohol use and education is not well-defined, however, the odds of alcohol consumption have been reported to be higher in illiterates as compared to post-graduates (OR=2.26) among Indian males as per an epidemiological study. However, the findings of present study suggested that the role of education might vary depending upon the environment. As far as dominance of Hindus in present study is concerned, it might be primarily be owing to proportional representation of population, secondly, the lesser representations of Muslims might be attributable to the religious strictures regarding alcohol use. In another study from Ahmedabad, only 6% of the alcohol-dependents were reported to be Muslims. Except for the study of Ranjan *et al.*¹² that was conducted among urban slums in Mumbai, no other

study has reported a Muslim dominance, thus as far as Indian studies are concerned, alcohol-dependence among Muslims is only exceptional and the present study also endorsed the same viewpoint.

In present study, half the study population was alcohol-dependent only while remaining 50% were dependent on substance with/without alcohol. Cannabis and opioids were the most common substances used. Similar to findings of present study, Ranjan *et al.*¹² also observed that apart from alcohol cannabis and opioids were the most common substances being used. Unlike western populations, where processed substances like cocaine, amphetamine, inhalants and sedatives are more frequently used, in India, use of crude forms such as cannabis and opioids is more common owing to their easy availability.

In present study, majority of patients (n=36; 72%) had other psychiatric morbidities. Among different psychiatric comorbidities, psychosis (n=17; 34%) was most common followed by depression (n=14; 28%). There was 1 (2%) patient each with anxiety, BPAD, dissociative trance and possession, MDE and insomnia respectively. Psychiatric co-morbidities are prevalent quite frequently among patients with alcohol-dependence. In a previous study, Vohra *et al.* reported presence of axis-I and axis-II comorbid conditions in 76% and 40% of alcohol-dependent patients. In their study too, depressive disorder was the most common comorbid condition. Kumar *et al.* in a previous study from our city also reported high prevalence of psychiatric comorbidities (64.8%) in alcohol-dependents, however, they reported mood disorder (50%), anxiety disorder (45.8%) and psychotic disorder (25%) to be the most common psychiatric comorbidities among alcohol users. However, Arya *et al.* in a recent study from Haryana reported psychiatric comorbidity in only 32% of their study sample and found anxiety and depression disorder to be most common. In yet another study, Chaudhury *et al.* found that 46.59% of alcohol-dependents showed personality disorders. The prevalence as well as pattern of psychiatric comorbidity among different studies shows a variability. The present study differs from the other studies with respect to inclusion of both alcohol- as well as substance-dependent patients.

On evaluating the association between presence of other psychiatric morbidity with different demographic and clinical factors in present study, monthly income and occupational complications were found to be significant. It was found that proportion of those with monthly income >Rs 5,000 was significantly higher among those with psychiatric comorbidity (41.7%) as compared to those not having psychiatric comorbidity (14.3%). Moreover, among those with psychiatric comorbidity, proportion of those reporting occupational complications was significantly higher (91.7%) as compared to those not having psychiatric comorbidity (57.1%). The findings in turn indicated an economic/financial conflict as the probable reason for development of psychiatric comorbidity in our study population. The present study did not find association of age, marital status, religion, occupation and place of residence with presence of psychiatric comorbidity which is in agreement with the observations of Kumar *et al.*¹³ who also made similar observations. In another study, Arya *et al.*²⁰ indicated an association between quality of life and presence of psychiatric comorbidity among alcohol-dependent patients. Although present study did not include assessment of quality of life, however, an association of economic/financial factors with presence of psychiatric co-morbidity did indicate the possible impact of psychiatric co-morbidity on financial quality of life of patients.

The findings of present study, thus not only showed a changing trend of alcohol-/substance-dependence among those with higher educational profile but also showed a high

prevalence of psychiatric co-morbidities. These two findings in conjugation reflect the increasing level of stress among the educated class which not only is instrumental in bringing about alcohol/ substance dependence but also in creating psychiatric co-morbidity burden. Keeping in view these findings, it is recommended that young educated individuals should be counseled regarding the implications of alcohol dependence. Moreover, more employment opportunities should be created and relaxation strategies should be promoted in order to reduce the stress burden of youths in order to avoid them from becoming alcohol/substance-dependent.

Table 1: Demographic Profile of Substance dependent males

| SN | Variable | Statistic |
|----|--------------------------------|--------------------|
| 1. | Age | |
| | 18-20 Years | 3 (6%) |
| | 21-30 Years | 19 (38%) |
| | 31-40 Years | 18 (36%) |
| | 41-50 Years | 6 (12%) |
| | 51-60 Years | 4 (8%) |
| | Mean Age+SD (Range) in years | 34.18+9.43 (18-55) |
| 2. | Marital Status | |
| | Married | 35 (70%) |
| | Single | 14 (28%) |
| | Divorced | 1 (2%) |
| 3. | Education | |
| | Illiterate | 6 (12%) |
| | Primary | 3 (6%) |
| | Middle | 13 (26%) |
| | High school | 16 (32%) |
| | Secondary school | 3 (6%) |
| | Graduate | 9 (18%) |
| 4. | Occupation | |
| | Unemployed | 12 (24%) |
| | Unskilled labourer/agriculture | 13 (26%) |
| | Skilled labourer | 8 (16%) |
| | Clerk/Paramedics/Shopkeeper | 13 (26%) |
| | Teacher/Officer | 2 (4%) |
| | Student | 2 (4%) |
| 5. | Monthly Income (Rs) | |
| | <2000 | 17 (34%) |
| | 2000-5000 | 16 (32%) |
| | >5000 | 17 (34%) |
| 6. | Religion | |
| | Hindu | 47 (94%) |
| | Muslim | 3 (6%) |
| 7. | Family type | |
| | Nuclear | 23 (46%) |
| | Joint | 27 (54%) |
| 8. | Locality | |
| | Rural | 20 (40%) |
| | Urban | 30 (60%) |

Table 2: Types of substance abuse

| SN | Variable | No. | % |
|----|------------------------------------|-----|------|
| 1. | Alcohol only | 25 | 50.0 |
| 2. | Alcohol + Cannabis | 3 | 6.0 |
| 3. | Alcohol + Opioids | 5 | 10.0 |
| 4. | Alcohol + Opioids + Benzodiazepine | 1 | 2.0 |
| 5. | Alcohol + Opioids + Cannabis | 2 | 4.0 |
| 6. | Alcohol + Opioid + Lomotil | 1 | 2.0 |
| 7. | Cannabis | 6 | 12.0 |
| 8. | Opioids | 4 | 8.0 |
| 9. | Opioids + Cannabis | 3 | 6.0 |

Table 3: Other Psychiatric comorbidities

| SN | Variable | No. | % |
|----|-----------|-----|------|
| 1. | No | 14 | 28.0 |
| 2. | Yes | 36 | 72.0 |
| | Psychosis | 17 | 34.0 |

| | | |
|------------------------------------|----|------|
| Depression* | 14 | 28.0 |
| Anxiety | 1 | 2.0 |
| BPAD | 1 | 2.0 |
| Dissociative Trance and Possession | 1 | 2.0 |
| MDE | 1 | 2.0 |
| Insomnia | 1 | 2.0 |

*There was 1 patient each having depression with Dhat syndrome, depression with Suicidal intent and severe depression with psychosis symptoms respectively

Table 4: Other Clinicodemographic Factors

| SN | Variable | No. | % |
|----|--|-----|------|
| 1. | Nicotine use | 43 | 86.0 |
| 2. | Coexisting physical illness (hypertension, diabetes, liver disease, respiratory illness, trauma) | 26 | 52.0 |
| 3. | Complications | | |
| | Occupational | 41 | 82.0 |
| | Familial | 46 | 92.0 |
| | Legal | 7 | 14.0 |
| 3. | Previous attempts for abstinence | 37 | 74.0 |
| | Only one attempt | 8 | 16.0 |
| | Multiple attempts | 29 | 58.0 |
| 4. | Duration of abstinence (n=37) (Maximum duration in case of multiple attempts) | | |
| | <15 days | 6 | 16.2 |
| | 16-30 days | 12 | 32.4 |
| | 1-6 months | 9 | 24.3 |
| | 6 months-1 year | 3 | 8.1 |
| | 1 to 2 years | 7 | 18.9 |
| 5. | Reason for abstinence* (n=37) | | |
| | Self | 10 | 27.0 |
| | Family pressure | 16 | 43.2 |
| | Medical Complications | 10 | 27.0 |
| | Accident | 3 | 8.1 |
| | Lack of money | 7 | 18.9 |
| 6. | Treatment taken during abstinence (n=37) | 16 | 43.2 |
| 7. | Reasons for relapse (n=37)* | | |
| | Craving | 32 | 86.5 |
| | Peer pressure | 17 | 45.9 |
| | Altercation | 2 | 5.4 |
| | Family problem | 3 | 8.1 |
| 8. | Family history of substance use | 25 | 50.0 |
| 9. | Duration of substance abuse | | |
| | <1 Year | 2 | 4.0 |
| | 1-5 Years | 10 | 20.0 |
| | >5 Years | 38 | 76.0 |

*Multiple options allowed

Table 5: Association of different demographic factors with presence of other psychiatric morbidity among substance users

| SN | Variable | Psychiatric co-morbidity (n=36) | No other psychiatric morbidity (n=14) | Statistical significance |
|----|---------------------|---------------------------------|---------------------------------------|--------------------------|
| 1. | Mean age±SD (Years) | 32.61±8.60 | 38.21±10.57 | t=1.939; p=0.058 |
| 2. | Marital Status | | | |
| | Married | 23 (63.9%) | 12 (85.7%) | $\chi^2=6.276$; p=0.043 |
| | Single | 13 (36.1%) | 1 (7.1%) | |
| | Divorced | 0 | 1 (7.1%) | |
| 3. | Education | | | |
| | Illiterate | 3 (8.3%) | 3 (21.4%) | $\chi^2=7.933$; p=0.160 |
| | Primary | 3 (8.3%) | 0 (0%) | |
| | Middle | 7 (19.4%) | 6 (42.9%) | |
| | High school | 14 (38.9%) | 2 (14.3%) | |
| | Secondary school | 3 (8.3%) | 0 (0%) | |
| | Graduate | 6 (16.7%) | 3 (21.4%) | |

| | | | | |
|----|------------------------|------------|-----------|--------------------------|
| 4. | Occupation | | | $\chi^2=8.489$; p=0.111 |
| | Unemployed | 11 (30.6%) | 1 (7.1%) | |
| | Unskilled | 10 (27.8%) | 3 (21.4%) | |
| | labourer/agriculture | 3 (8.3%) | 5 (35.7%) | |
| | Skilled labourer | 9 (25.0%) | 4 (28.6%) | |
| | Clerk/Nurse/Shopkeeper | 1 (2.8%) | 1 (7.1%) | |
| | Teacher/Officer | | | |
| | Student | 2 (5.6%) | 0 | |
| 5. | Monthly Income (Rs) | | | $\chi^2=6.232$; p=0.044 |
| | <2000 | 13 (36.1%) | 4 (28.6%) | |
| | 2000-5000 | 8 (22.2%) | 8 (57.1%) | |
| | >5000 | 15 (41.7%) | 2 (14.3%) | |
| 6. | Religion | | | $\chi^2=1.241$; p=0.265 |
| | Hindu | 33 (91.7%) | 14 (100%) | |
| | Muslim | 3 (8.3%) | 0 | |
| 7. | Family type | | | $\chi^2=0.828$; p=0.363 |
| | Nuclear | 18 (50.0%) | 5 (35.7%) | |
| | Joint | 18 (50.0%) | 9 (64.3%) | |
| 8. | Locality | | | $\chi^2=0.066$; p=0.797 |
| | Rural | 14 (38.9%) | 6 (42.9%) | |
| | Urban | 22 (61.1%) | 8 (57.1%) | |

Table 6: Association of Other Clinicodemographic Factors with psychiatric comorbidities among substance users

| SN | Variable | Psychiatric co-morbidity (n=36) | No other psychiatric morbidity (n=14) | Statistical significance |
|----|-----------------------------------|---------------------------------|---------------------------------------|--------------------------|
| 1. | Type of substance use | | | $\chi^2=0$; p=1 |
| | Alcohol only | 18 (50.0%) | 7 (50.0%) | |
| | Others with/without alcohol | 18 (50.0%) | 7 (50.0%) | |
| 2. | Nicotine use | 29 (80.6%) | 14 (100%) | $\chi^2=3.17$; p=0.075 |
| 3. | Coexisting physical illness | 18 (50%) | 8 (57.1%) | $\chi^2=0.206$; p=0.650 |
| 4. | Complications | | | |
| | Occupational | 33 (91.7%) | 8 (57.1%) | $\chi^2=8.14$; p=0.004 |
| | Familial | 33 (91.7%) | 13 (92.9%) | |
| | Legal | 5 (13.3%) | 2 (14.3%) | |
| | | | | $\chi^2=0.019$; p=0.889 |
| | | | | $\chi^2=0.013$; p=0.971 |
| 5. | Previous attempts for abstinence | 25 (69.4%) | 12 (85.7%) | $\chi^2=1.39$; p=0.239 |
| 6. | Treatment taken during abstinence | 11 (30.6%) | 5 (35.7%) | $\chi^2=0.123$; p=0.726 |
| 7. | Family history of substance use | 20 (55.6%) | 5 (35.7%) | $\chi^2=1.59$; p=0.208 |
| 8. | Duration of substance abuse | | | $\chi^2=3.11$; p=0.211 |
| | <1 Year | 2 (5.6%) | 0 | |
| | 1-5 Years | 9 (25.9%) | 1 (7.1%) | |
| | >5 Years | 25 (69.4%) | 13 (92.9%) | |

REFERENCES

1. Beaglehole R, Bonita R. Alcohol: A global health priority. *Lancet* 2009;373:2173-4.
2. Raju M, Chaudhury S, Sudarsanan S, Saluja SK, Srivastava K. Trends and Issues in Relation to Alcohol Dependence in the Armed Forces. *Med J Armed Forces India*. 2011;58(2):143-8.
3. Osaki Y, Kinjo A, Higuchi S, Matsumoto H, Yuzuriha T, Horie Y, et al. Prevalence and Trends in Alcohol Dependence and Alcohol Use Disorders in Japanese Adults; Results from Periodical Nationwide Surveys. *Alcohol and Alcoholism* 2016;51(4):465-473.
4. Han BH, Moore AA, Sherman S, Keyes KM, Palamar JJ. Demographic trends of binge alcohol use and alcohol use disorders among older adults in the United States, 2005-2014. *Drug Alcohol Depend*. 2016;170:198-207.
5. Moure-Rodriguez L, Carbia C, Lopez-Caneda E, Varela MC, Cadaveira F, Caamano-Isoma F. Caamano-Isoma F. Trends in alcohol use among young people according to the pattern of consumption on starting university: A 9-year follow-up study. *PLoS ONE* 13(4):e0193741.
6. Reddy MP, Babu RS, Pathak SM, Venkateshwarlu S. The clinical and demographic profile of male patients with alcohol dependence syndrome. *Indian J Psychol Med*. 2014;36(4):418-21.
7. Moineddin A, Goel A, Saini S, Bajpai A, Misra R. Alcohol Consumption and Gender: A Critical Review. *J Psychol Psychother* 6:267.
8. Benegal V, Nayak M, Murthy P, Chandra P, Gururaj G. Women and alcohol use

in India. In I. S. Obot & R. Room (Eds.), Alcohol, gender and drinking problems: Perspectives from low and middle income countries. Geneva: World Health Organization. 2005;89-123.

9. Nagendrappa AKB, Mailanna S, G Raj S. Alcohol, Gender, and Psychiatric Comorbidity: A Study from India, Iran J Psychiatry Behav Sci. 2018; 12(1):e9180.
10. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV). American Psychiatric Association, Washington D.C., 1994.
11. Sarkar AP, Sen S, Mondal S, Singh OP, Chakraborty A, Swaika B. A study on socio-demographic characteristics of alcoholics attending the de-addiction center at Burdwan medical college and hospital in West Bengal. Indian J Public Health 2013;57:33-5
12. Ranjan DP, Namita, Chaturvedi RM. A study of socio-demographic factors contributing to the habit of drug abuse in the urban slum community of Mumbai. Biomedical Res 2010;21(3):277-284.
13. Vignesh BT, Singh AK, Mohan SK, Murthy S, Joshi A. Association between Socio-Demographics and Alcohol Dependence among Individuals Living in an Indian Setting. Global Journal of Health Science 2014;6(3):16-26.
14. Meena, Khanna P, Vohra AK, Rajput R. Prevalence and pattern of alcohol and substance use in urban areas of Rohtak City. Indian Journal of Psychiatry 2002; 44(4):348-352.
15. Subramanian SV, Nandy S, Irving M, Gordon D, Smith GD. Role of socioeconomic markers and state prohibition policy in predicting alcohol consumption among men and women in India: a multilevel statistical analysis. Bull.WHO 2005;83:801-880.
16. Patel PR, Makadia KD. A Study of Socio Demographic Profile of Alcohol Dependents Attending De-Addiction Centre in Ahmedabad. Nat. J. Comm. Med. 2018;9(9):714-718.
17. Taylor M, Collin SM, Munafò MR, MacLeod J, Hickman M, Heron J. Patterns of cannabis use during adolescence and their association with harmful substance use behaviour: findings from a UK birth cohort. J Epidemiol Community Health. 2017;71(8):764-770.
18. Vohra AK, Yadav BS, Khurana H. A study of psychiatric comorbidity in alcohol dependence. Indian J Psychiatry. 2003;45(4):247-50.
19. Kumar V, Dalal PK, Trivedi JK, Kumar P. A Study of Psychiatric Comorbidity in Alcohol Dependence. Delhi Psychiatry J. 2010; 13(2):291-293.
20. Arya S, Singh P, Gupta R. Psychiatric comorbidity and quality of life in patients with alcohol dependence syndrome. Indian J Soc Psychiatry 2017;33:336-41
21. Chaudhury S, Saldanha D, Saini R, Diwan C, Pratap Singh V, et al. Comorbid Psychiatric Disorders in Alcohol Dependence: A Control Study. J Psychiatry 2018;21:442.