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Original Research Article

A study of psychiatric co-morbidity among alcohol dependents

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ABSTRACT

Background: The alcohol use disorders are frequently associated with other co-morbid psychiatric disorders. The aim of this study was to describe the demographic variables, drinking history and psychiatric co-morbidity in alcohol dependent subjects.
Methods: In this study, 40 consecutive patients were enrolled. After a minimum 1 month of sobriety, patients who fulfilled ICD-10 criteria of alcohol dependence were interviewed for data collection using Alcohol Use Disorders Identification Test (AUDIT), MINI-International Neuropsychiatric Interview (MINI) (Version-6.0) and a specially designed sociodemographic and clinical interview proforma. Subjects with substance use except tobacco were excluded from study. Main group comparison used chi-square test for categorical variables and the t-test for continuous variables.
Results: Most of the patients studied were >40 years of age. Majority were employed (92%), lived in nuclear families (78%) and came from rural background (77.5%). Forty five percent of the patients initiated alcohol drinking between 16-25 years and reported peer pressure (50%) as most significant factor responsible for initiation of drinking alcohol. Mean age of developing alcohol dependence was 25.12 years (SD=4.28). Mean AUDIT score for subjects was 27.7 (SD=4.73). Lifetime psychiatric co-morbid disorders were detected in 45%. Psychiatric disorders most frequently associated with alcohol dependence were major depressive disorder (10%), bipolar affective disorder (7.5%), dysthymia (5%), anxiety disorders (7.5%) and antisocial personality disorder (5%).
Conclusion: The study indicates that psychiatric disorders are prevalent in alcohol dependents and mood disorders are the most prevalent ones. It was also observed that co-morbid psychiatric disorders are associated with more severe alcohol problems.

Keywords: Alcohol dependence, Co-morbidity, Dual diagnosis, Substance abusing mentally ill

INTRODUCTION

Alcohol in beverage form is among the most widely used psychoactive substance in the world. Although there have been efforts to control alcohol use, adverse effects are widespread.[1] It has been recognized that patients with substance use have another psychiatric disorder and those who have primarily substance use disorder latter may develop other psychiatric illness. It has been termed as co-morbidity where a patient with a particular index disease may have any additional co-existing ailment.[2] It has been found that coexistent psychiatric illness is associated with poorer treatment outcome in alcohol dependents.[3] Ries introduced terms like dual diagnosis, mentally ill substance abusers (MISA), chemical abuse and mentally ill (CAMI) and substance abusing mentally ill (SAMI). Some studies divided multiple diagnosis into a primary versus secondary approach where the first condition to develop is labeled as 'primary' a notation that depends upon chronology, not necessarily cause and effect.[5] The independent versus substance induced is an extension of the primary and secondary approach. Here if the

significant features of depression, anxiety and psychosis persist for prolonged time after abstinence from alcohol they are labeled as independent mental disorder otherwise they are treated as substance induced disorder.[6]

METHODS

One-year observational descriptive study was done in the tertiary level general hospital psychiatry unit from August 2012 to July 2013. The study group included 40 consecutive patients of alcohol dependence syndrome diagnosed as per ICD-10 criteria.[7]

Patients of age group 18-55 years were selected and assessment was done once patients were abstinent from alcohol for 1 month. Patients with substance use except tobacco were excluded from study.

Written informed consent was taken from all the patients who were interested in participating in the study. Patients were first assessed using specially designed sociodemographic and clinical interview proforma for detecting alcohol use disorders (AUD). The patients meeting ICD-10 diagnostic criteria for alcohol dependence were included in the study.[7] Evidence of other substance use except tobacco resulted in the exclusion from study. Alcohol Use Disorders Identification Test (AUDIT) was used to evaluate the intensity of alcohol use disorders.

AUDIT user's manual was first published in 1989 and since its publication AUDIT's reliability and validity has been established in research conducted in a variety of settings and in many different nations.[8] MINI-International Neuropsychiatric Interview (MINI) (Version-6.0) was used for assessment of psychiatric co-morbid disorders.

It is a short structured diagnostic interview, developed jointly by psychiatrists and clinicians in the United States and Europe, for DSM-IV and ICD-10 psychiatric disorders.[7,9] It has short administration time of approximately 15 minutes and was designed to meet the need for a short but accurate structured psychiatric interview for multicenter clinical trials and epidemiological studies.[10] Socioeconomic class was ascertained by using modified Kuppuswamy's socioeconomic scale.[11]

The study didn't entail any follow up assessment. The descriptive data was analyzed using percentage, mean and standard deviation. Main group comparison used chi-square test for categorical variables and the t-test for continuous variables.

RESULTS

The age of the patients in study group ranged from 24-55 years with mean age of 43.05 years (SD=8.57 years). Most patients in the present study were male (97%) matriculate (42.5%) of rural background (77.5%) and belonged to upper middle socioeconomic class (Table 1).

Table 1: Sociodemographic characteristics.

Variable		No. of patients	Percentage
Sex	Male	39	97.5
	Female	1	2.5
Age	<30	3	7.5
	31-40	13	32.5
	41-50	13	32.5
	>50	11	27.5
Locality	Rural	31	77.5
	Urban	9	22.5
Education	Illiterate	0	0
	Primary	5	12.5
	Under matric	3	7.5
	Matric	17	42.5
	Secondary	8	20
	Graduate	4	10
	Postgraduate/ Professional	3	7.5
Occupation	Farmer	3	7.5
	Self-employed/ businessman	15	37.5
	Government employee	19	47.5
	Unemployed	3	7.5
Socioeconomic class	Upper	0	0
	Upper middle	23	57.5
	Middle/lower middle	14	35
	Lower/upper lower	3	7.5
	Lower	0	0
Marital status	Married	37	92.5
	Unmarried	2	5
	Separated/ divorced	0	0
	Widow(er)	1	2.5
Type of family	Joint	9	22.5
	Nuclear	31	77.5
	Extended nuclear family	0	0

Mean age of initiating alcohol intake was 22.15 years (SD=5.48). Twenty patients (50%) reported peer pressure as the single most important reason due to which they started drinking alcohol. Mean age of developing alcohol dependence was 25.12 years (SD=4.28). Thirty-eight patients (95%) had high level of alcohol problems represented by AUDIT scores of 16 and above. Twenty-nine patients (72.5%) had history of making abstinence attempts.

Twenty-seven patients (67.5%) were also suffering from nicotine dependence (Table-2). Eighteen patients (45%) had co-morbid psychiatric illness.

Out of 18 patients, 12 had psychiatric co-morbid illness at the time of interview.

Table 2: Alcohol use variables.

Variable		No. of patients	Percentage
Age of alcohol initiation	<20 years	17	42.5
	20-30 years	20	50
	31-40 years	3	7.5
	>40 years		0
Duration of alcohol intake	<5 years	1	2.5
	5-9 years	5	12.5
	10-19 years	10	25
	20-29 years	16	40
	>29 years	8	20
Source of income for buying alcohol	Self	25	62.5
	Family	10	25
	Theft	3	7.5
	Employer	0	0
	Friends	2	5
AUDIT score	8-15	2	5
	>15	38	95
History of past abstinence attempts	Present	29	72.5
	Absent	11	27.5
Family history of AUD	Present	18	45
	Absent	22	55
Tobacco smoking	Present	27	67.5
	Absent	13	32.5

Table 3: Comparison of study variables among patients with and without psychiatric co-morbidity.

Variables	Psychiatric co-morbidity		*t* value	Df*	*P*
	Present (n=18) (Mean±SD)	Absent (n=22) (Mean±SD)			
Age (in years)	42.61±9.91	43.40±8.60	0.27	38	0.79
Age at alcohol dependence	25.05±6.82	25.18±3.81	0.076	38	0.94
Years of alcohol consumption	19.72±10.16	20.86±8.72	0.38	38	0.7
AUDIT score	30.10±5.90	25.28±3.90	3.10	38	0.003

Df*= Degree of freedom

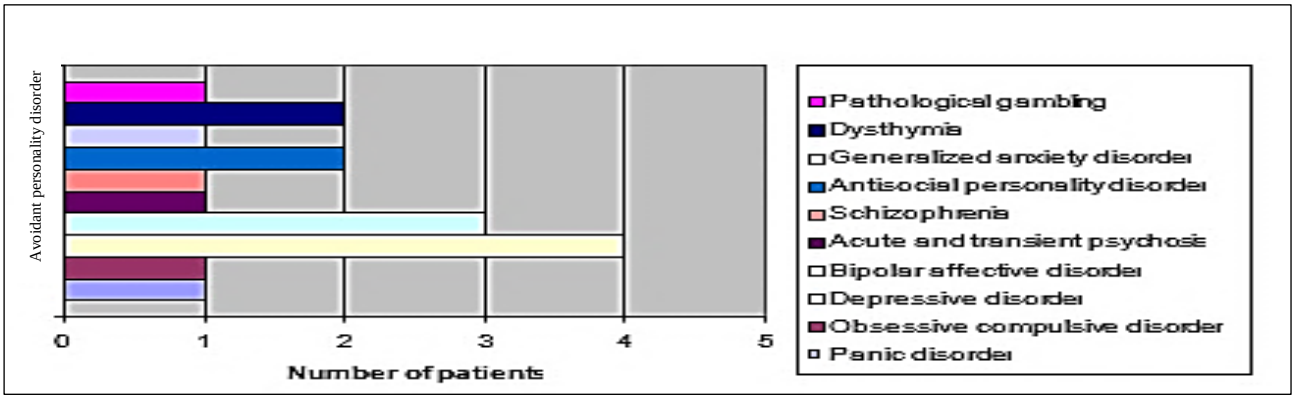

Figure 1: Co-morbid psychiatric disorders.

Six patients had past history of psychiatric illness and didn't had any diagnosable psychiatric illness at the time of interview. Mood disorders were most common psychiatric co-morbid disorders and 9 patients (22.5%) had past or current episode of major depressive disorder (10%), bipolar affective disorder (7.5%) and dysthymia (5%) (Figure 1). Mean age of the patients who had co-morbid psychiatric disorder was lower than those who didn't had co-morbid psychiatric disorder. Also, both the groups were comparable on the age of developing alcohol dependence and duration of alcohol consumption score. However, none of the above findings were statistically significant. The mean AUDIT score was higher in patients with psychiatric co-morbidity in comparison to the other group (t=3.10 P=0.0036) (Table 3) and (Table 4).

Table 4: Comparison of study variables among patients with and without psychiatric co-morbidity.

Variables		Psychiatric co-morbidity		X^2	Df*	P
		Present (n=18)	Absent (n=22)			
Background	Rural	14	17	0.001	38	0.48
	Urban	4	5			
Type of family	Nuclear	13	18	0.52	38	0.23
	Joint	5	4			
Past abstinence attempts	Present	15	14	1.92	38	0.08
	Absent	3	8			
Family history of AUD	Present	6	12	1.8	38	0.09
	Absent	12	10			
Tobacco use	Present	12	15	0.01	38	0.46
	Absent	6	7			
Co-morbid medical disorder	Present	6	7	0.01	38	0.46
	Absent	12	15			

Df*= Degree of freedom

DISCUSSION

Mean age of patients in the present study was 43.05 years (SD = 8.57). In other studies, mean age of patients ranged from 34.7 to 47.1 years.[12-14] In the present study only one patient was female. This probably reflects that female drinking is less prevalent in this region and is still culturally unacceptable. This is also possible that less number of females utilize de-addiction services due to socio-cultural issues of a society in which female drinking is still a taboo. In other investigations from the Indian subcontinent like Khalid et al and Sarkar et al more than 90% of the sample population comprised of males only.[15,16]

A meta-analysis by Reddy and Chandershekhar has also revealed a 10-fold difference in the rates of AUDs between men and women in India (men 11.9/1000 population and women 1.7/1000 population).[17] In present study, only 17.5% of patients had studied more than 12th standard. In the studies by Khalid et al and Singh et al 26.47% and 29% had an educational level of graduation and above respectively.[15,18]

Although some previous studies have reported alcohol dependence to be more prevalent in unemployed, 92% of our patients were employed.[12,15]

Most of patients in the present study (77.5%) belonged to rural background. In the study by Vohra et al 57% belonged to rural background.[19] A meta-analysis by Reddy and Chandershekhar revealed substance use prevalence rates of 5.8/1000 for urban and 6.9/1000 for rural population in India.[17] Higher representation of rural population in this study may be due to the fact that substantial number of the subjects were indoor patients of deaddiction ward who had been referred from peripheral health institutions located in the rural areas of the state of Himachal Pradesh.

In the present study, family history of alcohol use disorder was found in 45% patients. Family history was evaluated in parents and grandparents only. In a study by Sarkar et al 73.26% had family history of AUD which may be due to inclusion of siblings and second-degree relatives in their study.[16]

In the present study, mean age of initiation of alcohol intake was 22.15 years (SD=5.48). The age of initiation was assessed using the definition described by Grand et al which defines the age of initiation as the "age at which they first started drinking, not counting small tastes or sips of alcohol."[20] Mean age of developing alcohol dependence was 25.12 years (SD=4.28). Mean interval of alcohol initiation to dependence in the present study was 2.97 years. It reveals that most patients who started consuming alcohol at an early age, developed dependence after a few years of alcohol intake while young. In the present study, 50% patients reported peer pressure as a major reason for initiating alcohol intake. Pandey et al, and Gupta et al have cited peer pressure as most important reason for starting

substances including alcohol in their patients.[14,21] Thus, peer pressure which can have a positive influence and help challenge and motivate people to do their best, it can also result in adolescents and young adults getting into alcohol use.

Greater severity has shown to predict poorer treatment outcome.[1] As mean AUDIT score for patients was 27.7 (SD=4.73), it can be inferred that patients had high level of alcohol drinking problem. Even though the mean AUDIT score of patients with positive family history of AUDs was higher (28.39±5.90) in comparison to those with negative family history (27.14±3.86), the difference was not statistically significant (t=0.81 P=0.42). In a study by Johnson et al, there was significant difference of six points between two categories with higher score for patients with positive family history.[22]

The number of abstinence attempts a patient makes have been positively associated with severity of withdrawal during subsequent relapses.[1] In the present study, sizeable number of patients (72.5%) had made abstinence attempts in past and most patients (58.6%) didn't seek de-addiction services during the periods of abstinence. Forty five percent patients reported craving as a single most important reason for their relapse of alcohol drinking behavior after a period of abstinence.

Tobacco use appeared a common comorbid substance use disorder associated with alcohol dependence with 67.5% of the patients being tobacco users in the present study. In the studies by Pandey et al and Enoch et al, tobacco use has been reported in 64% and 70% of the alcohol dependent subjects.[14,23] In the study by Strat et al alcohol-dependent subjects suffering from tobacco dependence had a higher prevalence of nearly all psychiatric and addictive disorders of public health concern.[24] However in the present study, no significant difference was found to suggest that tobacco use in alcohol dependents is associated with higher prevalence of psychiatric comorbid disorders (X^2=0.01; P=0.46).

In the present study 32.5% had co-morbid medical disorders, where as Chandini and Mathai found medical co-morbid conditions in 65% of alcohol dependent inpatients.[25] The diabetes mellitus, hypertension, alcoholic liver diseases and obesity were the co-morbid medical disorders detected.

Lifetime psychiatric co-morbidity was detected in 45% of patients which is slightly higher than 37% which was found in Epidemiological Catchment Area (ECA) study (United States 1980-1984) by Regier et al, but lower than other studies (60%-92%).[12,18,26-30] Majority of earlier studies assessed patients on superannuated diagnostic classifications and used different structured interview schedules which may have produced discrepancy in results obtained. Most common psychiatric co-morbid disorders were mood disorders which were present in 22.5% of the patients in comparison to ECA study by Regier et al which reported mood disorders in 13.4% of subjects.[26] Other studies have reported higher prevalence (33-50%) of co-morbid mood disorder.[12,27,28,31] Major depressive disorder, bipolar affective disorder and dysthymia was found in 10%, 7.5% and 5% subjects respectively. It is worthwhile to speculate reasons for relatively low rate of mood disorders in present study.

Some of the explanation may rest with the fact that diagnostic criteria for mood disorder were rather restrictive; the diagnosis was not based on the occurrence of sadness alone (almost a universal experience among alcoholics), didn't reflect even intense sadness for less than two weeks at a time, and did not relate to bona fide mood disorder episodes if they occurred in the midst of alcoholism (i.e. secondary mood disorder). Also, past episodes of mood disorders were considered in this study only when they occurred during abstinence from alcohol for more than 4 weeks and had significant duration and severity to meet the diagnostic criteria for major mood disorder. In the present study, 7.5% of the patients had anxiety disorders which included obsessive compulsive disorder (2.5%), panic disorder (2.5%) and generalized anxiety disorder (2.5%).

The previous studies have reported 3.5-58% prevalence of anxiety disorders.[18,26-29,32] Most patients reported symptoms of nervousness or anxiety, including panic attacks and obsessions, during their heavy drinking or withdrawal. These symptoms cleared over a few days of abstinence and most patients had no diagnosable anxiety disorder at four weeks of abstinence. Therefore, it appears that independent anxiety disorders are relatively less prevalent than secondary or alcohol induced anxiety disorders and the higher rates observed in most of the previous studies may be due to inclusion of alcohol induced anxiety disorder in those studies. Antisocial personality disorder (ASPD) was identified in 5% of patients. Previous studies have recorded 14.3-42% prevalence of ASPD.[12,18,26,29] The relatively low prevalence of ASPD in the present study may be because of other addictions not accepted (except tobacco use) in the present study and ASPD has been found to be occurring more commonly in poly substance use disorder than AUD. Second reason may be that there is substantial overlap in diagnostic criteria of ASPD and AUD.

CONCLUSION

Even though the sample size was small, we can conclude that most patients start drinking alcohol in adolescence or early adulthood. Alcohol dependence develops within few years of initiating alcohol and patients make multiple abstinence attempts throughout their life. Furthermore, it can be concluded that psychiatric co-morbid disorders are more prevalent in the patients with alcohol dependence. Major depression, dysthymia and bipolar affective disorder are the most prevalent psychiatric co-morbid disorders associated with alcohol dependence. Antisocial personality disorder appears to be most prevalent

personality disorder in alcohol dependents. It was also observed that co-morbid psychiatric disorders are associated with more severe alcohol problems.

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