International Journal of Basic and Applied Medical Sciences ISSN: 2277-2103 (Online)
An Open Access, Online International Journal Available at http://www.cibtech.org/jms.htm
2015 Vol. 5 (1) January-April, pp. 257-263/Rajender et al.
Research Article

STUDY OF COMORBIDITY IN SUBSTANCE ABUSE

***Akash Rajender[1], Apoorva Saraswat[2], Gaurav R[3], Krishna Kanwal[4], RS Chaudhri[5], Deepa Chaudhary[6], Mona Narain[7] and Sandeep Dudi[4]**
[1]Department of General Medicine, MGMCH, Jaipur
[2]Department of Pathology, MGMCH, Jaipur
[3]Department of Psychiatry, SMS Medical College, Jaipur
[4]Department of Psychiatry, MGMCH, Jaipur
[5]Department of Anaesthesia, SMS Medical College, Jaipur
[6]Departmentof Obs & Gynae, JLN Medical College, Ajmer
[7]Department of Community Medicine, MGMCH, Jaipur
**Author for Correspondence*

ABSTRACT
A prospective study in hundred consecutive subjects admitted at tertiary care centre was conducted. Information was collected regarding sociodemographic data, family history of substance abuse. Psychiatric and Physical co-morbidity and duration of stay in the ward. Study sample of 60 subjects comprised of 55 (55%) alcohol user. 32 (32%) opium user, 3 (3%) cannabis users and 10 (10%) were multiple drugs users. All the subjects were in their active stage of dependence. Positive family history was found in 63 (63%) of the subjects. 72 (72%) had psychiatric, 68 (68%) had physical, while 45 (45%) had psychiatric as well as physical co-morbidity. Among psychiatric co-morbidity depression, personality disorders and sexual dysfunctions were more common disorders while alcohol related liver disease came out to be the most common physical illness. Analysis of duration of stay revealed that opium users stayed for shorter duration than alcohol users.

Keywords: *Comorbidity, Substance Abuse*

INTRODUCTION
The twentieth century was the century of communicable diseases and many of them were dealt effectively and others like polio, guinea worm are in the phase of eradication. In 21st century the scenario will be dominated with communicable diseases particularly AIDS related complexes and non communicable diseases like cardiovascular and psychiatric diseases. Problem of drug abuse is related to both of them. Drug using behavior is a result of complex interaction of various factors. Some of the major factors are sociocultural, family history and individual's personality. Presence of co-morbidity adds another dimension to this enigma. The famous Epidemiologic Catchment Area (ECA) study by Reiger *et al.,* was first to describe that alcoholics are three fold more likely to have a psychiatric disorder than non-alcoholics. ECA data indicated that most commonly associated disorder with alcoholism were Anti social personality disorder (ASPD), dependence on other drugs, mania and schizophrenia. The depressive disorders and anxiety disorders had a modest association. Co-morbid disorders were more common in women (65%) than men (44%). Perk *et al.,* concluded that increased quantity of alcohol consumed per drinking occasion is associated with increased depressive symptoms. Kessler *et al.,* in National co-morbid Disorder survey (NCS) showed that most common co-morbid condition associated with alcoholism were dependence on other drugs and ASPD. This association was stronger with alcohol dependence than abuse. Reiger *et al.,* demonstrated that 50-75% of general psychiatric patient had co-morbid substance abuse disorder. Sociocultural influences and role of family in relation to drug abuse have been noted by Khan (1978), and Khan and Krishna (1981). Role of various other sociocultural factors like industrialization, immigration, poverty, illiteracy and cultural taboos have been seen in many studies (Krupinski *et al.,* 1973; Smart *et al.,* 1983; Westermayer, 1982).
Rounsaavillae *et al.,* demonstrated that presence of additional psycho-pathology results in poorer outcome. It has been proven that management is more effective when co-morbidity is taken into account, treating only one condition at a time leads to more frequent relapses.

Research Article

Aim and Objectives

1. To study the socio-demographic profile of drug users.
2. TO study the correlation between type of family and family history.
3. TO study the prevalence of psychiatric and physical co-morbidity in patients of alcohol and substance abuse.
4. To study duration of stay in the ward and find if it has got any relation with the type of substance abuse and type of co-morbidity.

MATERIALS AND METHODS

Hundred consecutive cases admitted in the deaddiction ward at tertiary care centre were examined, information was collected from one or more reliable informant and patient themselves.

Information was recorded on a proforma which included: socio-demographic data, longitudinal history of substance abuse, time of onset, precipitating factor, presence or absence of withdrawal symptoms, history of previous admissions and presence/ absence of physical complaints were recorded, information was also collected regarding pre-morbid personality (PMP) of patients, behaviour of patient when sober, family history regarding substance abuse and presence of history of psychiatric as well as physical illness.

After thorough general physical evaluation of patients, they were subjected to relevant routine tests like haemogram, x-ray chest, liver function test, ultra sonography for liver and other required investigations decided according to the physical condition of patients.

Diagnosis of psychiatric illness and sub-stance abuse were made according to ICD-10. For diagnosing physical illness patients were seen by a physician independently and final diagnosis was made correlating general physical examination and laboratory investigations.

RESULTS AND DISCUSSION

Results

Tables 1 to 5 show the results of the study

Discussion

Analysis of sociodemographic data (Table 1) showed average age in our study population was 35.2 $\pm$ 9.1. Maximum number of subjects 45(45%) belonged to 21-30 year age group. No significant difference was found when analyzed using chi-square test for type of family and family history of substance abuse (x^2=1.09, df=1, p > 0.05).

Table 2,3 and 4 shows that psychiatric morbidity was found in overall 72% of total patients 76.78% of alcoholics, 70.96% of opium users and 100% of multiple drug user were found to be suffering from one or the other co-morbid psychiatric disorders. These findings were quite comparable with outcome of study done by Kishore *et al.,* (1994) in which they found psychiatric morbidity in 70% of the sample and among 65% of alcoholics and 56.6% of opoid users. On reviewing community studies these finding were not found to be replicable as reported by Reiger *et al.,* (1990). Reiger *et al.,* found that-life time prevalence of psychiatric co-morbidity was 32.7%. Dube and Handa (1971) found it to be 6.8%. This could be due to more treatment seeking tendency of patients with co-morbid disorders - Berksonion bias (Berkson, 1946). Depression (51%), Antisocial personality disorders (ASPD) (36%) and sexual dysfunctions (24%) turned out to be the most common psychiatric co-morbid disorders (Table 4). Substance induced psychosis was seen in 8% and other (panic disorders) were seen in 5.35% of patients. 11% of patients were suffering from more than one co-morbid psychiatric disorders. They were included in their respective category while analyzing the results. Similar kind of results were seen by Ross et al, who found that most common disorders were ASPD, phobia, psychosexual dysfunction, major depression and dysthymia. Prevalence of affective disorder was found to be 27.3% and psychosexual dysfunction 6.4% and ASPD 36.5%. Kishore *et al.,* also found that mood disorders, other substance abuse disorders, sexual dysfunction and anxiety disorder were among common diagnosis on axis 1. In our study psychotic disorders did not figure so high which could be because patients with comorbid psychotic illness were admitted at psychiatric wards rather than deaddiction ward.

Looking at the relationship between psychiatric morbidity and type of abuse, we found that 76.78% of alcoholics were having psychiatric co-morbidity (Table 4). Diagnostic breakup of these 56 alcoholics were as follows – depression(33.9%), ASPD (16.07%), sexual dysfunction (5.35%) substance induced psychosis (5.35%) and panic disorder (5.35%). Applying chi-square test for psychiatric morbidity, alcohol abusers versus others, it was found that association with depression was statistically significant association with alcoholism ($x2 = 5.49$ $df = 1$ $p < 0.05$).

Table 1: Sociodemographic Profile Vs Family History of Substance Abuse

S.No.	Sociodemographic Variables	Positive Family History (N = 63) (63.%)	Negative Family History (N = 37) (37%)	Total (N = 100)
1.	**Age (in years)**			
	21-30	27	18	45 (45%)
	31-40	27	8	35 (35%)
	41-50	6	9	15 (15%)
	> 50	2	3	5 (5%)
2.	**Religion**			
	Hindu	56	19	75 (75%)
	Muslim	8	12	20 (20%)
	Sikh	3	3	5 (5%)
3.	**Marital Status**			
	Married	50	30	80 (80%)
	Unmarried	7	8	15 (15%)
	Divorced/Widower	2	3	5 (5%)
4.	**Type of family**			
	Joint	42	27	69 (69%)
	Nuclear	18	13	31 (31%)
5.	**Socio-economic Status (SES)**			
	Very High	2	1	3 (3%)
	Upper Middle	30	12	42 (42%)
	Lower Middle	27	21	48 (48%)
	Very Low	4	3	7 (7%)

- *All patients were male.*
- *No significant correlation was found between type of family and F/H of substance abuse.*
- *None of the patient was reported from very high socioeconomic status that could be because of these people preferred to go to private hospitals to avoid social stigma.*
- *SES was calculated using SES scale devised by Gupta and Sethi (1981), IJP: 23(1): 371-379.*

Prevalence of depression in alcoholism in our study was similar to other studies, like Kishore *et al.*, (sample size 20, Mood disorders 46.2%. sexual dysfunction 30.8% and axis II disorders 30.8%, ASPD 7.7%) and Helen *et al.*, (sample size 279 depression 22.6%, sexual dysfunction 30.3% and ASPD 41.9%) and Hasselbrock *et al.*, (sample size 231, ASPD 49% and major depression 32%). The variation in affective disorder and psychosexual dysfunction could be due to variation of cultural and genetic factors, and small sample size of our study.

Table 2: Distribution According to Type of Substance Abuse (N = 60)

S.No.	Type of Substance	Number (%)
1.	Alcohol	56(56%)
2.	Opoids	31(31%)
3.	Cannabis	3(3%)
4.	Multiple	10 (10%)

- *Nicotine users were not included in the study.*

Table 3: Distribution of Co-morbidity (N = 60)

S.No.	Type of Co-morbidity	Number (%)
1.	Pure Psychiatric Co-morbidity	27 (27%)
2.	Pure Physical Co-morbidity	23 (23%)
3.	Both Psychiatric and Physical Co-morbidity	44 (44%)
4.	Nil	6 (6%)

- *95% of the patients had one or the other kind of co-morbidity.*

Table 4: Psychiatric Morbidity and Type of Substance Abuse

S.No.	Psychiatric Co-Morbidity	Type of Substance Abuse Alcohol (N = 56)	Opoids (N = 31)	Multiple (N = 10)	Cannabis (N = 3)
1.	Depressive disorder	19 (33.9%)	5 (16.1%)	-	-
2.	Antisocial personality disorder	9 (16.07%)	7 (22.5%)	6 (60%)	-
3.	Sexual dysfunction	3 (5.35%)	7 (22.5%)	-	-
4.	Substance induced psychoses	3 (5.35%)	-	2 (20%)	3 (100%)
5.	> 1 Psychiatric disorder	6* (10.71%)	3** (9.67%)	2* (20%)	-
6.	Others	3# (5.35%)	-	-	-
7.	Total	43 (76.78%)	22 (70.96%)	10 (100%)	3 (100%)

***** *Depression with sexual dysfunction.*
****** *Personality disorder with sexual dysfunction.*
*Panic disorder*

Among the opoid user 70.96% have not psychiatric disorders (Table 4) including sexual dysfunction 22.5%, ASPD (22.5%) and depression (16.1%). Using chi-square test for psychiatric morbidity, opoid users versus others. Sexual dysfunctions were found to be significantly correlated with opium abuse (x^2 = 4.59 df = 1 $p < 0.05$). Results were similar when compared for depression but differed on sexual dysfunction and ASPD with Kishore *et al.*, (Mood disorder 23.1%, Sexual dysfunction 15.4% and ASPD 23.9%). Brooner *et al.*, (1997) also found that 48% had co-morbidity. Major depression and ASPD were found to be the more common diagnosis. Edward and Catherene (1985) conducted that 77% patient had one or more diagnosis on axis 1 and 65% had personality disorders on axis 2. Depression and personality disorders were the most common diagnosis.

Table 5: Psychiatric Morbidity Vs Duration of Stay

S.No.	Substance Abuse & Psychiatric Morbidity	Duration of Stay (Days) 0 - 5	6 - 10	11 - 15	> 15
A.	**Alcohol abusers (N = 56)**	**17 (30.3%)**	**20 (35.7%)**	**15 (26.8%)**	**4 (7.14%)**
1.	Depressive Disorder	9	8	1	-
2.	Dissocial Personality Disorder	3	4	1	-
3.	Sexual Dysfunction	-	-	1	-
4.	Substance Induced Psychoses	2	-	-	-
5.	> 1 Co-morbid Disorder	-	-	2*	-
6.	Others	3#	-	-	-
7.	Nil	-	8	4	2
B.	**Opoid Abusers (N = 31)**	**11 (35.48%)**	**5 (16.12%)**	**15 (48.38%)**	**-**
1.	Depressive Disorder	-	2	3	-
2.	Dissocial Personality Disorder	4	2	-	-
3.	Sexual Dysfunction	-	1	5	-
4.	> 1 Co-morbid Disorder	2* *	-	2* *	-
5.	Nil	5	-	5	-
C.	**Multiple drugs Abusers (N = 6)**	**4 (40%)**	**3 (30%)**	**3 (30%)**	**-**
1.	Dissocial Personality Disorder	4	3	-	-
2.	Substance Induced Psychoses	-	-	2	-
3.	> 1 Co-morbid Disorder	-	-	1	-
D.	**Cannabis Abusers**	**-**	**3 (100%)**	**-**	**-**
1.	Substance Induced Psychoses	-	3	-	-

***** *Depression with sexual dysfunction.*
****** *Personality disorder with sexual dysfunction.*
*Panic disorder*

Table 6: Physical co=morbidity Vs Type of Substance Abuse

S.No.	Physical Co-Morbidity	Type of Substance Abuse Alcohol (N = 56)	Opoids (N = 31)	Multiple (N = 10)	Cannabis (N = 3)
1.	Liver disorders	34 (60.71%)	-	5 (50%)	-
2.	Respiratory disease	4 (7.14%)	13 (23.2%)	2 (20%)	-
3.	Hypertension	4 (7.14%)	-	-	-
4.	Fracture	2 (3.57%)	-	-	-
5.	Diabetes	4 (7.14%)	-	-	-
6.	> 1 Physical disease	6 (10.71%)	-	3 (30%)	-
7.	Total	54 (96.42%)	13 (23.2%)	10 (100%)	-

All of the multiple drug users were having psychiatric co-morbidity. Out of these (Table 4) 60% were having ASPD, 20% were having substance induced psychosis, none sexual dysfunction and none with depression disorders and two patients were having more than one co-morbid diagnosis. ASPD were found to be significantly correlated with multiple drug use when analyzed using x^2 test. (x^2 6.39, df = 1 $p < 0.05$). Similar kind of results were reported by Helen *et al.,* (1988). Table 5 shows that duration of stay of the subjects on two dimention according to type of drug used and type of disorders. Average duration of stay was quite close among the three major groups of different drug users. Duration of stay of alcohol abusers 8.90 ± 4.23, opium abusers 7.89 ± 4.68 and multiple drug users was 7.66 $\pm$ 4.88. But when grouped according to the type of disorder obvious differences were observed in duration of stay of subjects with sexual dysfunction (12.28 ± 4.15) and with personality disorder (3.48 $\pm$ 5.5). Depression ranked somewhat in between (9.27 ± 4.04). In relation to physical co-morbidity 77 (77%) of the subjects were suffering from co-morbid physical disorders (Table 2 & 6). Multiple drug abuser with 10 (100%) physical co-morbidity were on the top of the list followed closely by alcoholics (90.42%) opoid abusers (23.12%) and no physical abnormality was seen in cannabis user. Most common illness was found to be alcohol related liver disorders in 60.71% followed by respiratory diseases (19%) hypertension (7.14%), diabetes mellitus (7.14%), fracture femur (3.57%), and 10.71% person had more than one physical diagnosis 60.71% of alcoholics and 50% of multiple drug abuser had liver disorders. 23.12% of opoid user, 7.14% of alcoholics and 20% of multiple drug users had respiratory disorders. Increased prevalence of liver diseases, cardiovascular and pulmonary diseases in alcoholics and other drug abuses was found in our study, studies also indicate increased mortality from alcohol related accidents (Lieber *et al.,* 1995).

Conclusion

Drug abuse and related disorders are one of the worst and upcoming problem to be faced by any country in the world during 21 st century, we are still in a state of dilemma that drug dependence is basically a medical, social or psychological problem but one thing is very sure that there is high prevalence of both psychological and physical co-morbid disorders.

Identification of primary as well as co-morbid disorders and treating both simultaneously,an integrated approach is definitely more effective approach.

Limitations

1. Small sample size.
2. Study setting was tertiary care centre,hence results cannot be generalised.
3. Chronology of the principal and co-morbid disorder was not determined.

REFERENCES

Berkson J (1946). Limitation of the application of fourfold tables to hospital data. *Bio-metric Bulletin* **2** 47-53.

Brooner RK, King VL, Kidorf M, Schmidt CW Jr and Bigelow GE (1997). Psychiatric and substance use comorbidity among treatment, seeking opoid abusers. *Archives of General Psychiatry* **54** 71-80.

Edward JK and Catherine T (1985). DSM-m Psy-chiatric diagnosis of narcotic addicts : Recent findings. *Archives of General Psychiatry* **42** 1067-1071.

Gupta SC and Sethi BB (1981). Assesment of the socioeconomic status. *Indian Journal of Psychiatry* **23**(1) 371-379.

Helen E ROSS, Frederick B Glaser and Teresa Germanson (1988). The prevalence of psychiatric disorders in patients with alcohol and other drug problems. *Archives of General Psychiatry* **45** 1023-1031.

Hesselbrock MN, Roger E, Meyer Janet and Keener J (1985). Psychopathology in Hospitalized alcoholics. *Archives of General Psychiatry* **42** 1050-1055.

Kessler RC, Crum RM, Warner LA, Nelson CB, Schulenberg J and Anthony JC (1997). Life time co-occurrence of DSM III-R alcohol abuse and dependence with other psychiatric disorder in National co-morbidity survey. *Archives of General Psychiatry* **54** 313-321.

Khan MZ (1978). Social correlates of drug use amongst college students in Jabalpur town. Mimeographs sager: Department of criminology and Forensic Sciences, university of Sager.

Khan MZ and Krishna MP (1981). Research on drug dependence in India: working paper III, serminar on social defence research in India August 1-3, Varanasi.
Krupinski J, Stoller A and Wallace L (1973). Psychiatric disorder in Eastern European refugees now in Australia. *Social Science Medicine* **7** 31-45.
Lieber CS (1995). Medical disorders of alcoholism. *New England Journal of Medicine* **333** 1058-1065.
Pankaj Kishore N, Lal Trivedi JK, Dalai PK and Aga VM (1994). A study of comorbidity in psychoactive substance dependence patients. *Indian Journal of Psychiatry* **36**(3) 133-137.
Parker DA, Parker ES, Harford TC and Farmer CC (1987). Alcohol use and depression symptoms among employed men and women. *American Journal of Public Health* **77** 704-707.
Reiger DA, Farmer ME, Rae DS, Locke BZ, Keith SJ, Judd LL and Goodwin FK (1990). Comorbidity of mental disorders with alcohol and other drug abuse-results from Epidemiologic Catchment Area (ECA) study. *Journal of American Medical Association* **264** 2511-2518.
Rounsavillae BJ, Dolinsky ZS, Babor TF and Mayer RE (1987). Psychopathology as a predictor of treatment outcome. *Archives of General Psychiatry* **44** 505-513.
Smart RC and Murray GF (1983). Drug abuse and affluence in five countries: A study of economics and health conditions 1960-1975. *Drug Alcohol Dependence* **11** 297-307.
Westermayer J (1982). *Poppies, Pipes and People: Opium and Its Use in Laos*, Berkeley (C.A. University California Press).