RESEARCH

Psychiatric comorbidity with substance abuse: a clinical study

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Abstract

Background: The coexistence of substance use with mental health problems irrespective of temporality and cause-effect relationship pose a great burden on health care services. In this clinical work an attempt has been made to understand the psychiatric comorbidity with substance abuse.

Material and methods: This study was conducted in the Gauhati Medical College Hospital which is situated in Guwahati, a premier city in the north-eastern part of India. Subjects were selected using serial sampling procedure. The M.I.N.I. Plus (MINI International Neuropsychiatric Interview) English Version 5.0.0 was applied to the patients.

Results: In our study total number of patients was 100 (male 96, female four). Total number of patients with psychiatric morbidity was 80. Total number of alcohol abuse and alcohol dependent was 73. Total number of drug abuse and dependent was 27. Total number of psychiatric morbidity in alcohol was 53 (66.25%). Total number of psychiatric morbidity in drugs was 27 (33.75%). Out of 73 alcohol abusers, schizophrenia (N=six) 6.22%, affective disorder (N=38) 52% and anxiety (N=nine) 12.3%. Out of 27 drug abusers, schizophrenia (N=6) 22.2%, affective disorder (N=16) 59.2%, conduct disorder (N=one) 3.7%, and antisocial personality disorder (N=four) 14.8%.

Conclusion: From this study we came to the conclusion that the co-occurrence presents challenges for diagnosis as well as for optimal patient management. Our findings have implications for treatment interventions. Further analyses are needed to ascertain the functional relationship among these comorbid patterns and the long-term course of comorbidity as a function of treating one or the other disorder.

Introduction

Substance abuse is a widely prevalent and growing problem of the present day. There is no standard for the definition of drug abuse, dependence or addiction, except for the criteria used in the Diagnostic and Statistical Manual of Mental Disorders (DSM), which fall under the heading of substance use disorder.

In the earliest manual of American Psychiatric Association, DSM, from 1952, drug abuse was classified as "sociopathic personality disturbances."[1] In the second edition (DSM-II) in 1968 abuse diagnosis became a separate category, still belonging to personality disorders. No change in this was noticed until 1980, when the third edition (DSM-III) was introduced. In this system the drug abuse diagnosis was excluded from the category of personality disorders. In everyday clinical practice patients are often named 'abusers' even if they at the moment do not fulfill any criteria on the dependence or abuse.

Psychiatric comorbidity is the co-occurrence of two or more psychiatric disorders in a single patient. The coexistence of substance use with mental health problems is a rule rather than an exception.[2]

The fourth edition (DSM-IV), the text revision (DSM-IV-TR) and the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) formulations for substance abuse and dependence closely follow the concepts and terminology developed in 1980 by an International Working Group sponsored by the World Health Organization (WHO) and the Alcohol, Drug abuse and Mental Health Administration (ADAMHA) of the United States.

DSM-IV-TR defines the substance abuse as a maladaptive pattern of substance use leading to clinically significant impairment or distress as manifested by one (or more) of the following, occurring within a 12-month period: Recurrent substance use resulting in an inability to fulfill major role obligations at work, school or home,

recurrent substance use in situations in which it is physically hazardous, recurrent substance related legal problems, continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the efforts of the substance. The symptoms above never met the criteria for substance dependence for this class of substance.[3]

Expert committees of the WHO have rejected the term abuse and the ICD-10 includes a category of harmful use, which substantially differs from the DSM-IV-TR concept of abuse. In harmful use the damage may be physical or mental.[4]

Substance dependence according to DSM-IV-TR diagnostic criteria is a maladaptive pattern of substance use, 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: Tolerance, withdrawal, the substance is often taken in larger amounts or over a longer period than was intended, there is a persistent desire or unsuccessful effort to cut down or control substance use, a great deal of time is spent in activities necessary to obtain the substance, use the substance or recover from its effects, important social, occupational or recreational activities are given up or reduced because of substance use. The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.[3]

A useful definition of comorbidity is the "joint occurrence of two or more mental disorders occurring with each other and/or with medical conditions."[5] Classical psychiatrists, such as Karl Jasper,[6] postulated that all signs of an illness should be submerged under a single diagnosis, which usually implies that this "main diagnosis" is meaningful in terms of prognosis and outcome. Nowadays in operational diagnostic systems, such as DSM-IV and ICD-10, comorbidity is the rule not the exception.[7] But nevertheless, "diagnosis and need for treatment are not the same."[8] The growing importance of spectra, of subthreshold, and of the subsyndromal disorders in psychiatry, as well as the suspension of exclusionary principles, has led to an increase in comorbidity.[9]

A basic problem here is the difference between cross-sectional and longitudinal observations.[9] Since the time of Kahlbaum[10] and Kraepelin,[11] there has been a consensus that in psychiatric research, longitudinal observations are superior to cross-sectional observations.[9] It is an overt weakness of present diagnostic systems, such as DSM-IV and ICD-10 that they pay little (or almost no) attention to such a long-term course.[9] At the same time, it becomes increasingly clear that complex interactions between long-term and

subsyndromal features of a disorder are important for its prognosis.[12]

Landry et al.,[13] Lehman et al.[14] and Meyer[15] reported that: Alcohol and other drug use can cause psychiatric symptoms and mimic psychiatric syndromes, its use can initiate or exacerbate a psychiatric disorder, its use can mask psychiatric symptoms and syndromes, its withdrawal can cause psychiatric symptoms and mimic psychiatric syndromes, psychiatric and alcohol and other drugs (AOD) use disorders can independently co-exist, psychiatric behaviours can mimic AOD use problems.

The Epidemiological Catchment Area (ECA) Study (DSM-III criteria) was conducted in the early 1980 and the National Comorbidity Survey (NCS) (DSM-III-R criteria) studied between 1990 and 1992, was conducted in USA. In the NCS, 51% of those who met the criteria for a lifetime addictive disorder received at least one additional mental disorder diagnosis; in the earlier ECA Study the comparable figure was 38%. The findings from the NCS largely confirm the observations of the ECA Study that those with substance use disorders are substantially more likely to experience other mental disorders and that those with other mental disorders are far more likely to develop substance use disorders.

A comparable comorbidity study conducted in England and Wales in the 1990s found substance use was significantly associated with higher rates of psychological morbidity. Among those not dependent on any substance, 12% were assessed as having a psychiatric disorder. Among those dependent on nicotine, 22% were having another psychiatric disorder. The rates for psychiatric comorbidity were 30% and 45% for those dependent on alcohol and other drugs respectively. The database study from 1993-1998 in England and Wales in primary care showed 10% increase in comorbidity in each year.

Till date, there are no uniformly accepted, comprehensive and coherent guidelines for the care of patients with coexisting substance use and mental health problems.[2] Management is mostly opinion-led and this area of substance use disorders continues to remain a poor neglected step-child.[2]

Patients with comorbid disorders irrespective of temporality and cause-effect relationship pose a great burden on health care services.[2] However, the significance of this condition is almost always disregarded.[2] A dire consequence of this is that these patients and their families experience tremendous distress.[2] It is of significant mental health importance that this category of patients be identified and treated appropriately − in a manner dissimilar from the solitary diagnosis of a substance use disorder or a mental illness.[2]

It is also observed that drug abusers with mental illness comorbidity are more likely to engage in behaviours that increase risk for HIV/AIDS. Children with parental HIV/AIDS may show exacerbations of pre-existing psychiatric disorder or precipitations of new-onset disorder.[16] The prevalence of behaviour problems in children of alcohol dependents (COADs) was found to be higher whereas in non-alcohol dependents (COADs) it was much lesser.[17]

It is interesting to recognise that as we understand more about the biology of addiction, social and cultural influences also plays an important role.[18] In view of the prevalence and consequences of psychiatric comorbidity, it is important to promote its prevention and cure.[19] Indian studies are available only on psychiatric conditions comorbid with alcohol.[2] In this clinical work an attempt has been made to understand the psychiatric comorbidity with substance abuse.

Aims and objectives

The present work designs to study psychiatric comorbidity with substance abuse in terms of the following: To find a correlation of different psychiatric and substance abuse disorders with sociodemographic variables, prevalence and pattern of psychiatric disorder with patients of substance abuse disorder, to specify psychiatric morbidity with substance abuse.

Methods and materials

Geographical area: This study was conducted in the Gauhati Medical College Hospital (GMCH) which is situated in Guwahati, a premier city in the north-eastern part of India. The patients attending this hospital hail mainly from Assam and also from the neighbouring states like Nagaland, Arunachal Pradesh, Meghalaya, Mizoram, Manipur, etc. The average attendance at the outpatient department (OPD) of Psychiatry is about 20-40/day and the number crosses over 12000 in a year. The indoor facility at the Drug De-addiction Centre under Department of Psychiatry has eight male beds and four female beds.

Subject selection: The sample was drawn from patients with alcohol and drug problems attending psychiatry OPD as well as admitted patients in psychiatry ward who fulfilled the inclusion criteria. Informed consent was taken from the patients and the attendants.

Sampling procedure: Subjects were selected using serial sampling procedure i.e. all consecutive cases attending psychiatry department of GMCH.

Inclusion criteria: Age 11 to 60 years. Both male and female patients were included. Psychiatric disorder patients with both abuse and dependence of substance use disorder according to DSM-IV criteria.

Exclusion criteria: Withdrawal state, dementia, substance abuse with other medical diseases like hypertension, diabetes mellitus and thyroid dysfunction, substance induced psychiatric disorder.

Study period and sample size: Period was one year and sample was 100 patients.

Description of the tools: A proforma had been prepared to document the data. It contained personal information and sociodemographic data.

The M.I.N.I. Plus (MINI International Neuropsychiatric Interview) English Version 5.0.0[20] was applied to the patients. The M.I.N.I. Plus was designed as a brief structured interview for the major axis I psychiatric disorders and symptoms accounted for by an organic cause or by the use of alcohol or drugs in DSM-IV and ICD-10. Validation and reliability studies have been done comparing the M.I.N.I. to the Structured Clinical Interview, Patient Edition for DSM-III-R (SCID-P)[21] and the Composite International Diagnostic Interview (CIDI) (a structured interview developed by the WHO for interviewers for ICD-10).[22] The results of these studies show that the M.I.N.I. has acceptably high validation and reliability scores, and can be administered in a much shorter period of time (mean 18.7 ± 11.6 minutes, median 15 minutes) than the above referenced instruments.

Interview procedure: All the 100 selected patients were interviewed in details using these tools.

Analysis of data: Data were tabulated showing the sociodemographic pattern of the cases. Statistical analysis was done using InStat software. The findings of the study discussed both in terms of relevance to the present finding and also in relation to previous studies.

Results and observations

In our study total number of patients was 100 (male 96, female four). Total number of patients with psychiatric morbidity was 80. Total number of alcohol abuse and alcohol dependent was 73. Total number of drug abuse and dependent was 27. Total number of psychiatric morbidity in alcohol was 53 (66.25%). Total number of psychiatric morbidity in drugs was 27 (33.75%). Out of 73 alcohol abusers, schizophrenia (N=six) 6.22%, affective disorder (N=38) 52% and anxiety (N=nine) 12.3%. Out of 27 drug abusers, schizophrenia (N=6) 22.2%, affective disorder (N=16) 59.2%, conduct disorder (N=one) 3.7%, and antisocial personality disorder (N=four) 14.8%.

The general sociodemographic characteristics of the sample

Hundred patients suffering from substance abuse disorder fulfilling DSM-IV criteria were studied. Out of 100 patients studied, 96 were males and four were females. The patients were selected from 11-60 years of

age. Table 1 shows age group and gender in sample population. Thirty eight per cent were single male patients. Out of 57% married patients, two were female. There were two per cent widow, one per cent separated male and two per cent male divorcee. Hindu constitutes 82%, among which three per cent were female; Muslim 13%, Sikh two per cent and Christian three per cent. Eighty five per cent of the patients were from higher educational group; with seven per cent illiterate, eight per cent primary standard, 28% high school level, 36% higher secondary and 21% with college and above. Out of 100 patients, 57% were from urban area and 43% from rural area. Among them, one female was from urban area and three females were from rural area. Seventy six per cent patients came from lower income group. The large group fell under low income with 56% of total, lower middle constituted 20%, middle with 19%, upper middle with four per cent and one per cent in high income group. All females fell under low income group. Thirty six per cent were in service, 13% skilled and 11% unskilled worker, 10% were shop owners and nine per cent farmer. Sixteen and five per cent were unemployed and students, respectively. There are 82% of the patients with nuclear family pattern. Among them, four per cent were female. Another 18% fell under joint family pattern.

Table 1. Age group and gender in sample population

Age group (in years)	Male	Female	Psychiatric morbidity (number of patients)
11-20	4	0	4
21-30	33	1	28
31-40	29	2	27
41-50	19	1	15
51-60	11	0	6

Types of substances used by the patients

The patients with alcohol intake constituted 70% of male and three per cent of female; cannabis with 11%, inhalant four per cent, opioid two per cent, sedative/hypnotic and anxiolytic with 10%. (Figure 1)

Prevalence of comorbid psychiatric disorders

In this study total number of schizophrenic patients was 12%, among them six per cent with current and another six per cent with life time prevalence, major depressive disorder 18% (13% current and five per cent past), bipolar-I 20% (12% current, eight per cent past), bipolar-II 10% (six per cent current, four per cent past), dysthymia six per cent (five per cent current, one per cent past), generalized anxiety disorder six per cent (current),

social phobia two per cent (current), obsessive-compulsive disorder (OCD) one per cent (current), conduct disorder one per cent (current), antisocial personality disorder four per cent (current). (Table 2)

Table 2. Psychiatric comorbidity

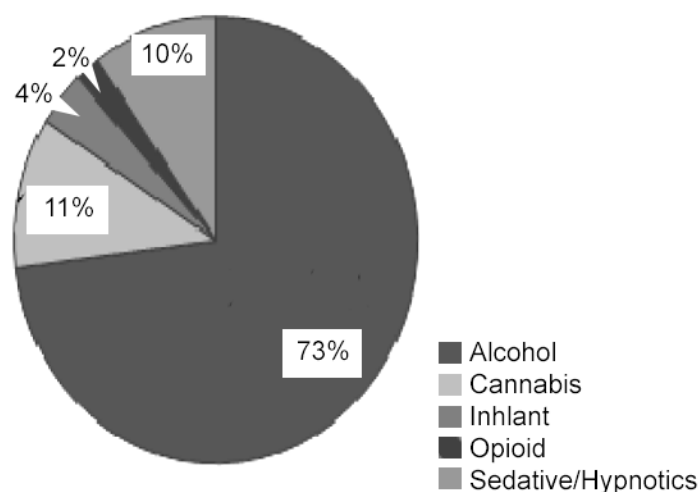| Psychiatric comorbidity	Current (N)	Past (N)	Total (N)
Schizophrenia	6	6	12
Major depressive disorder	13	5	18
Bipolar-I	12	8	20
Bipolar-II	6	4	10
Dysthymia	5	1	6
Generalized anxiety disorder	6	0	6
Social phobia	2	0	2
Obsessive-compulsive disorder	1	0	1
Conduct disorder	1	0	1
Antisocial personality disorder	4	0	4

Figure 1. Distribution of substance abuse (number of patientts)

Distribution of sociodemographic variables in relation to psychiatric morbidity with substance abuse

Distribution of age in relation to psychiatric morbidity with substance abuse: In 11-20 years age group four patients, 21-30 years 28 patients, 31-40 years 27 patients, 41-50 years age group 15 patients and 51-60 years six patients had psychiatric morbidity. The highest rate seen

Table 3. Distribution of diagnoses across substance abuse groups

Substance	Diagnoses (%)									
	Schiz.	MDD	BPAD	Dysth.	GAD	Soc.	OCD	Cond.	APD	Total
Alcohol (N=73)	8.21	19.17	27.4	5	8	2.7	1.3	0	0	73
Cannabis (N=11)	45	0	45	0	0	0	0	9	0	11
Inhalant (N=4)	0	50	0	25	0	0	0	0	25	4
Opioid (N=2)	0	100	0	0	0	0	0	0	0	2
Sedative/ hypnotic (N=10)	10	0	50	10	0	0	0	0	0	10

Schiz = schizophrenia, MDD=major depressive disorder, BPAD=bipolar disorder, Dysth.=dysthymia, GAD=generalized anxiety disorder, Soc.=social phobia, OCD=obsessive-compulsive disorder, Cond.=conduct disorder, APD=antisocial personality disorder

in 21-40 years group was total of 55%. Among them affective disorder with 36%, schizophrenia nine per cent, anxiety disorder six per cent and antisocial personality disorder with four per cent. (Table 1)

Marital status in relation to psychiatric morbidity with substance abuse: The total number of single patients who had psychiatric morbidity was 30, married 42 male and three female, separated one, divorcee two and widow two. Affective disorders predominated in both married and single group with 30% and 21% respectively, followed by schizophrenia with six per cent in married group and four per cent in single group. In case of anxiety disorder it was six per cent for married and two per cent for single and equal distribution of antisocial personality disorder with two per cent each.

Religion in relation to psychiatric morbidity with substance abuse: Majority of patients were Hindu with 59 male and three female, Muslim with 13 patients, Sikh two patients and Christian two patients (male one, female one). Among the Hindus, there were 44% with affective disorder, eight per cent with schizophrenia, five per cent with anxiety disorder, three per cent with antisocial personality disorder and one per cent each of conduct and OCD. In other groups also affective disorders predominated.

Place of residence in relation to psychiatric morbidity with substance abuse: There were 46 (male 45, female one) urban patients and 34 rural patients affected with psychiatric morbidity.

Income in relation to psychiatric morbidity and substance abuse: There were 39 patients in the low income group, 19 patients in the lower middle group, 17 patients in the middle group, four patients in the upper middle group and one patient in the high income group affected by psychiatric morbidity.

Occupational status in relation to psychiatric morbidity with substance abuse: Twenty seven patients who were in service, 11 patients who were skilled workers, 12 patients who were unskilled workers, eight patients who were shop owners, five patients who were farmers, 13 patients who were unemployed and five patients who were students affected by psychiatric morbidity.

Family pattern in relation to psychiatric morbidity with substance abuse: The family pattern showed 62 patients belonging to nuclear family pattern and 18 patients belonging to joint family pattern affected by psychiatric morbidity.

Distribution of psychiatric comorbidity with substance abuse

Out of 73 alcohol abuse/dependent patients it was found that schizophrenia 8.21%, major depressive disorder 19.17%, bipolar disorder 27.4%, dysthymia five per cent, generalized anxiety disorder eight per cent, social phobia 2.7% and OCD 1.3%. Out of 11 cannabis dependents, schizophrenia 45%, bipolar disorder 45% and conduct disorder nine per cent. Among four inhalant dependents, major depressive disorder 50%, dysthymia 25% and antisocial personality disorder 25%. Among two opioid dependents, major depressive disorder was 100%. Out of ten sedative/hypnotic/anxiolytic dependents, schizophrenia 10%, bipolar disorder 50%, dysthymia 10% and antisocial personality disorder 30%. (Table 3)

In this study it was evident that opioid user had got highest psychiatric comorbidity with major depressive disorder 100% with 50% each of both male and female patients. The lowest comorbidity seen with alcohol dependent was OCD 1.3%. Again alcohol users had highest comorbidity with bipolar disorder 27.4%.
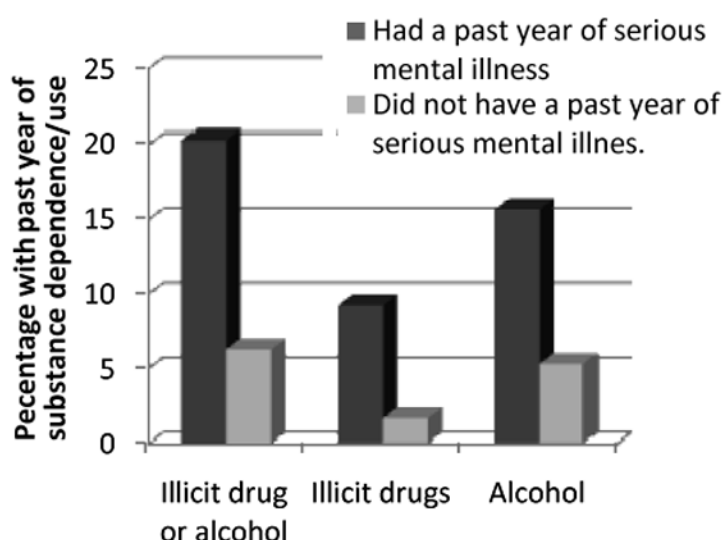
additional mental disorder diagnosis.

Sociodemographic characteristics

Sex distribution: General popul-ation pattern in our country shows male predominance. In the NCS (DSM-III-R) the total number of men with alcohol abuse was 482 and women 299 (12.5% and 6.4% respectively) and total number of men with alcohol dependence was 838 (20.1%) and women 374 (8.2%). So men are significantly more likely than women to be classified as having both disorders. In a pilot study done by Kofoed et al.,[23] out of 32 patients 31 were male. Nace et al.[24] demonstrated 57% out of 100 substance abusers had personality problems (SCID-II). Author found no gender difference. Among juvenile youth detainees with major mental disorders more than half of females and nearly three quarters of males had any substance use disorder.[25] Difference between females and males is not statistically significant.

The gender differences in which and how psychiatric symptoms are associated with so suggest that causative and/or vulnerability factors for the comorbidities may be different for boys and girls. For example substance using girls have more comorbidity and more family dysfunction than boys, suggesting that they have more severe psychological disturbance.[26] Havassy et al.[27] found

Figure 2. Substance dependence or abuse among adults by serious mental illness, 2001 (from National Household Survey of Drug Abuse; 2001).

Discussion

The sociodemographic data were recorded in detail to assess any correlation of the psychiatric comorbidity with substance abuse, especially in the areas of sex, education, occupation, age, marital status, residence, family pattern etc. During the course of our study we tried to investigate psychiatric comorbidity with substance abuse by using M.I.N.I. Plus English version 5.0.0.

Drug abuse and mental disorders comorbidity is reality. The epidemiological studies by National Institute of Drug Abuse, USA have shown that between 30% and 60% of drug abusers have concurrent mental health diagnoses. A comparable comorbidity study conducted in England and Wales in 1990 found that rates for psychiatric comorbidity were 30% and 45% for those dependent on alcohol and other drugs respectively. The ECA Study showed 38% and the NCS showed 51% of lifetime addictive disorders received at least one

Table 4. Substance abusers with comorbid psychiatric disorder

Disorders	Men % (N=50)	Women % (N=50)
Any affective or anxiety disorder	48	70
Major depressive disorder	36	40
Bipolar disorder (severe mood swing)	6	4
Panic disorder	10	18
Social phobia	14	10
Posttraumatic stress disorder	24	46

Table 5. Psychiatric disorder with increased risk of substance abuse

Psychiatric disorder	Increased risk for substance abuse (%)
Antisocial personality disorder	15.5
Manic episode	14.5
Schizophrenia	10.1
Panic disorder	4.3
Major depressive episode	4.1
Obsessive-compulsive disorder	3.4
Phobias	2.4

no differences between gender, age or years of education in comparisons of patients with comorbid psychiatric and substance use disorders. Epidemiological surveys in the general population indicate that anxiety and affective disorders are more common in women whereas antisocial personality disorder is more common in men.[28] The gender differences of substance users with these disorders are, in large part, the same as the gender differences for these psychiatric disorders found in the general population.

Age distribution: Of the 100 cases studied 85% cases were from the age group of 20-50 years. The highest percentage was found in the 21-30 years age group and the percentage was declining at later ages. This corroborates the NCS and results of epidemiological surveys.[29,30] The 12-month disorders are consistently most prevalent in the youngest co-host (age range, 15 to 24 years) and generally declined monotonically with age (mean ± SD = 31 ± 10 years) than the group without personality disorders (38 ± 13 years). Majid and Margoob[31] found maximum number of psychiatric morbidity belonged to 19-26 years age group followed by 27-34 years of age. Caton et al.[32] found median age 25 years compared to 29 years for substance included psychiatric disorder.

Bhagabati et al.[33] studied a sample consisting of 680 participants from six randomly selected schools in an urban set-up. One hundred and fifty one (22.2%) subjects out of total 680 have ever had alcoholic beverages like beer, wine or liquor. Majority of the participants were in the age group of 16-18 years (48.35% of alcohol users and 50.85% of alcohol nonusers) followed by 14-16 years age group (29.80% of alcohol users and 31.84% of alcohol nonusers). Among alcohol users, 70.2% were boys. The percentage of boys and girls in alcohol nonusers was almost same (50.66% and 49.34%, respectively). Duration of living in the city had shown an inverse relation with alcohol use, i.e. alcohol users had a shorter stay (p = 0.042).

Distribution of marital status: The predominant figure found in married population group with total of 57%, which is followed by single group with 38%. Kofoed et al.[23] found that out of 32 patients eight (25%) were married, seven (22%) had never married and the remainder were divorced. Nace et al.[24] demonstrated that personality disorder group was less likely to be married than the group without personality disorder. Majid and Margoob[31] in posttraumatic stress disorder (PTSD) patients with substance use disorder described most of the cases were unmarried (49.39%) followed by married (39.75%) and 10.83% were divorcees or widowers. Caton et al.[32] demonstrated seven per cent married compared to 15.6% with substance induced psychotic disorder. We speculate, being married could also add to the complications of adjustment for a substance abuser within the families with his or her spouse and children and thus may further potentate the habit of taking substances to escape from his or her problems, conflicts with others etc.

Distribution of religion: Eight two per cent of the cases were Hindu, followed by Muslims with 13%, Sikh two per cent and Christians three per cent. We suggest that as the sample was drawn from a Hindu majority community therefore the majority in our sample belong to the Hindu community. So this is not a significant finding.

Distribution of education: Eighty five per cent of the cases were from higher educational group followed by primary (eight per cent) and illiterate (seven per cent). It corroborates the ECA and the NCS studies where rates of all disorders decline with education. One noteworthy exception is that lifetime substance use disorder is significantly higher in the middle education subsamples than among those with either the lowest or highest education. Nace et al.[24] defined significantly less education in subjects with personality disorder. In the dually diagnosed substance use disorder and PTSD patients, Majid and Margoob[31] found that graduates and postgraduates constituted 48.84% followed by matriculate with 39.25% and illiterates only 10.84%. Caton et al.[32] found no difference of primary disorder group from substance induced psychotic disorder group.

Distribution of residence: Out of 100 patients, 57% were from urban area and 43% were from rural area. In the NCS, comorbidity is low in rural America than in major metropolitan countries. This is true despite the fact that rural Americans are exposed to much greater financial adversity than their urban counterparts.[34] Some as yet unknown resources protect rural people and blacks (with decrease income and education with decrease comorbidity) from the adverse psychiatric effects that we would otherwise expect to be associated with their stressful lives.

Distribution of income: Of 100 cases, 76% cases were from lower income group followed by middle (23%) and higher (one per cent) income group. It is in contrast to the ECA and the NCS studies. These studies are consistent with previous research that rates of almost all disorders decline monotonically with income. The coefficients comparing the middle vs. highest income groups are significant in predicting anxiety disorders, antisocial personality disorder and comorbidity.[29]

There is a consistent tendency for socioeconomic status to be more powerfully related to anxiety disorders than to affective disorders, suggesting indirectly that the resources associated with socioeconomic status are more protective against the onset and/or exacerbation of worries and fears than of sadness. In our study only one per cent was from higher income group, which shows that people

with high income used to visit private clinics instead of public hospitals.

Distribution of occupation: The service holder group constituted 36% followed by the unemployed group with 16%. The student group constituted the lowest with five per cent. In the study by Kofoed et al.,[23] out of total 32 patients four were employed (13%) and 12 (38%) were legally disabled by psychiatric illness. Majid and Margoob[31] described in PTSD with substance use disorder, 50.60% were government employees followed by 39.75% labourers/unemployed and 9.63% were students. Brady et al.[35] reported that men were more likely to have a higher household income and to be alcohol dependent.

Distribution of family pattern: There are 82% of the patients with nuclear family pattern and 18% fall in the joint family pattern. This may be explained by the fact that the traditional way of joint family system is gradually going down in our society from what it was twenty years before.

Distribution of types of substances used by the cases: In our study 73% of patients consumed alcohol, 11% cannabis, four per cent inhalants, two per cent opioid, 10% sedative/hypnotics/anxiolytics.

Distribution of psychiatric morbidity with substance abuse: In our study we found majority of the cases with dependence so we collapsed both abuse and dependence. Only few studies of co-occurring psychopathology and substance abuse have been made among the general population. These are, in the US the National Institute of Mental Health's (NIMH) ECA study, mainly reported by Regier et al.,[36] but also by Tien and Anthony[37] and Kofoed[38] in a survey. In the NCS, 51% of those who met the criteria for a lifetime addictive disorder received at least one additional mental disorder diagnosis; in the earlier ECA study, the comparable figure was 38%. The risk was more than four times greater compared with those without any history of drug abuse. They also stated that the risk of having a mental disorder was double the one for drug abusers than for alcohol abusers. It is contrary to our study. Anxiety syndromes, the most common, were found for 28%, affective disorder for 26%, antisocial personality disorder for 18% and schizophrenia for seven per cent. Our study is not consistent with the ECA study. The reason for these findings is possibly because of the preponderance of cases of alcohol dependence and small number of other substance dependence. The NCS reported by Kessler et al.[39] showed that all the mental disorders were consistently more strongly related to dependence than to abuse. Our study was similar to the NCS.

In our study we found 80% of substance abusers had psychiatric morbidity. Among them 12% with schizophrenia, 54% with affective disorder, nine per cent

with anxiety disorder, four per cent with antisocial personality disorder and one per cent with conduct disorder. In the NCS, of the axis I disorders, Bipolar I disorder is more strongly related to dependence on alcohol or drugs than any other mood or anxiety disorder. In general approximately 24.5% of those with a 12-month addictive disorder had a mood disorder as well, and 35.6% had an anxiety disorder. Overall, 42.7% of those with a 12-month addictive disorder had at least one 12-month axis-I mental disorder. In terms of lifetime disorders, 41.0% to 65.5% of those with a lifetime addictive disorder have a lifetime history of at least one axis I mental disorder, whereas 51% of those with one or more lifetime mental disorders have a history of one or more addictive disorder. For lifetime conduct disorder or adult antisocial behaviour, the rates of lifetime substance use disorder increases to 82%. Our study is not consistent with this. The reason may be due to diagnostic procedure used, where it is DSM-III-R and in our setup it is DSM-IV.

A comparative study conducted in England and Wales in the 1990s found that rates for psychiatric comorbidity were 30% and 45% for those dependent on alcohol and other drugs respectively. The newest version of National Household Survey of Drug Abuse (NHSDA) now provide some data on comorbidity and confirm the findings of the NCS that serious mental illness is strongly correlated with illegal drug use and cigarette use. Individuals with a serious mental illness are more than twice as likely to have used an illegal drug and to have been cigarette smokers. Serious mental illness is even more strongly correlated with the presence of drug abuse or dependence.[40] The present study also showed findings in similar lines, although individual percentage of occurrence of these vary somewhat.

The correlation between serious mental illness in presence of drug abuse or dependence is shown in figure 2.

In 2001 it was estimated that three million adults had both a serious mental illness and substance dependence or abuse in the past year.

In general, the probability of comorbidity is higher for those with a lifetime diagnosis of an opioid or cocaine disorder than for those with cannabis abuse diagnosis.[40] In our study also it was evident that opioid users have got the highest psychiatric comorbidity with major depressive disorder (100%). About 90% with opioid dependence have additional psychiatric illness: major depressive disorder, alcohol use disorders, antisocial personality disorder, anxiety disorders, about 15 percent attempt to commit suicide at least once.[41]

Swan[42] found that any affective or anxiety disorder predominates in women with 70% compared to men with 48% and PTSD 46% for women with 24 % for men. But bipolar disorder and social phobia predominates in men.

The following table shows percentage of hundred cocaine and alcohol abusers who were ever diagnosed with comorbid psychiatric disorder.

Table 4 shows percentage of hundred cocaine and alcohol abusers who were ever diagnosed with comorbid psychiatric disorder.

Results are not comparable with our study as the number of females in our sample is very low. In our study we have found more number of cases of bipolar mood disorder and major depressive disorder as compared to the National Institute of Drug Abuse (NIDA) study, while other disorders are more or less comparable. This difference could be because of differences in the sample population.

Table 5 based on a NIMH study, lists seven major psychiatric disorders and shows how much each one increases an individual's risk for substance abuse.

Grilo et al.[43] reported that conduct disorder was diagnosed more frequently and oppositional defiant disorder was diagnosed less frequently in the substance use disorder patients than in the non-substance use disorder patients. Anxiety disorders were diagnosed less frequently in the substance use disorder group. Cluster B personality disorders and borderline personality disorders were diagnosed more frequently in the substance use disorder group. This study is not consistent with our findings. The probable reason may be that the study of Grilo and colleagues was done on adolescent population only.

Brady et al.[35] reported that men were significantly more likely to have a higher household income and to be alcohol dependent. Women were significantly more likely to have another axis I disorder in addition to substance use disorder, particularly anxiety disorder, but these gender differences were not substantially different from the gender prevalence of these disorders in the general population. Men had more affective disorder relative to women than would be expected from the general population data. Female alcoholics had substantially more psychopathology than male alcoholics. There were no gender differences in axis II diagnosis. The findings are consistent with our study.

Hovens et al.[44] demonstrated excluding conduct and oppositional defiant disorders, 85% of the substance abusers versus 65% of the non-substance abusers had psychiatric comorbidity. Substance abusers had a higher incidence of dysthymia, major depression and social phobia. Overanxious disorder was predominant among female and conduct disorder among male substance abusers. In our study only one patient had conduct disorder who was a male patient. This study is consistent

with our study as major affective disorder predominates over others.

Kandel et al.[45] reported that the rates of mood and disruptive behaviour disorders are much higher among adolescents with current substance use disorder than among adolescents without substance use disorder. In our study also all adolescent substance users had psychiatric morbidity.

Rohde et al.[46] found increased alcohol dependence was associated with the increased lifetime occurrence of depressive disorders and disruptive behaviour disorder. There was a trend for increased alcohol use in girls to be associated with anxiety disorders. More than 80% of adolescents with alcohol abuse or dependence had some other form of psychopathology. The findings are consistent with our study. In our study drug abusers had more problems and adolescent population was too small for any useful analysis.

Kumar et al.[47] reported that out of 40 alcohol dependent patients 12.5% qualified for current psychiatric diagnosis on DSM-III-R, which were paranoid schizophrenia (three), manic-depressive psychosis, currently manic (one) and generalized anxiety disorder (one). Eleven patients reported sadness of mood and depressive symptoms of mild severity not amounting to a syndromal diagnosis of depressive disorder. Two patients (five per cent) had schizoid traits and eight patients (20%) had chronic feelings of emptiness and boredom. However, a conclusive diagnosis of personality disorder was not made. In our study we found more clear cut cases and no sub-syndromal cases. Besides percentage of schizophrenia and affective disorder were significantly more.

Baethge et al.[48] demonstrated anxiety disorders were more frequent in the patients with than without substance use disorder (30% and 13% respectively). Though not the comparison study, the prevalence rate is not consistent with our study.

Lima et al.[49] studied association between psychiatric symptoms and severity of alcohol dependence in a sample of Brazilian men using M.I.N.I. Plus and found that the mean age of the sample was 46 years and 63.9% fulfilled criteria for severe alcohol dependence. OCD, depression and paranoid symptoms were the most common clinical findings in the sample. Patients with severe dependence showed higher scores of psychiatric symptoms compared with patients with mild or moderate dependence. This study is not comparable with our study as the parameters of severity vs. psychopathology were not attempted in our study.

Grant et al.[50] in a prevalence study of 12-month DSM-IV independent mood and anxiety disorders in the US population found 9.21% and 11.08% respectively. The

rate of substance use disorders was 9.35%. The findings of anxiety were consistent with our study but the percentage of mood varies with our study.

Grella *et al*.[51] in a drug treatment outcomes for adolescents with comorbid mental and substance use disorders found that 64% of the sample had at least one comorbid mental disorder, most often conduct disorder. Comorbid youth were more likely to be drug or alcohol dependent. These findings are more or less similar with our study findings barring conduct disorder. This is likely to be due to very small sample size of adolescent cases.

Rounsaville *et al*.[52] reported 57% of substance use disorder (DSM-III-R) patients met criteria for at least one comorbid axis II disorder, with cluster B (45.7%) being particularly prominent, especially antisocial personality disorder 27% and borderline personality disorder 18.4%. In our study we have included only antisocial personality disorder. This may have resulted in the variation with our study.

Brooner *et al*.[53] documented 47% of the sample (47% women and 48% men) with psychiatric comorbidity. Antisocial personality disorder (25.1%) and major depression (15.8%) were the most common diagnosis.

The cross-national investigation results of Merikangas *et al*.[7] showed strong association between mood and anxiety disorder as well as conduct and antisocial personality disorder with substance use disorder. The results also suggest that there is continuum in the magnitude of comorbidity as a function of the spectrum of substance use category (use, problems, dependence) as well as a direct relationship between the number of comorbid disorder and increasing levels of severity of substance use disorder (which was particularly pronounced for drugs). This study showed similar findings with our study.

Limitations

M.I.N.I. Plus has limited repertoire of psychopathology. It does not cover all possible disorders. Sample was drawn from single site i.e. psychiatry department of GMCH which is a public hospital. The sample is not representative of all mentally ill patients. It was based on retrospective recall. Although this approach can be a source of considerable recall bias in recording lifetime disorders, recall bias is less probable for the current disorders dealt with in this study. We also had to rely upon self-reports of substance use; informants and urine test/blood test results were not used to validate these reports. Lack of control group limits from making comment.

Summary and conclusion

Hundred substance abuse patients fulfilling the DSM-IV criteria were the subjects of this study. The principal objective was to study psychiatric comorbidity with substance abuse. Besides the sociodemographic data the M.I.N.I. Plus was applied, which was translated to Assamese.

In the sociodemographic data male outnumbered the female, though statistically not significant. Subjects were mostly in the age group of 21-40 years; maximum patients hailed from urban background and were predominantly from lower income group. Ninety four per cent of the subjects were educated from primary level to college and above. But six per cent were illiterate. More than half of the patients were married followed by single patients, coming mostly from nuclear families. There were maximum number of service holder patients, which was followed by unemployed, skilled worker, unskilled worker, shop owner, farmer and student in the occupational group. Statistical significance was observed in relation to the marital status. The substances used by the patients in our study were alcohol, cannabis, opioid, inhalant, sedative/hypnotic and anxiolytic and almost all were dependent except a few with abuse. The comorbid psychiatric conditions found were schizophrenia, affective disorders (major depressive disorder, bipolar I, bipolar II, dysthymia), anxiety disorders (generalized anxiety disorder, social phobia and OCD), conduct disorder and antisocial personality disorder. The percentage distributions of disorders are: Affective disorder (54%), schizophrenia (12%), anxiety disorder (nine per cent), antisocial personality disorder (four per cent) and conduct disorder (one per cent). In this study opioid dependent had got highest comorbidity with major depressive disorder (100% i.e. 50% each of both male and female patients). Among alcohol abusers bipolar disorder scored the highest rate with 27.3% and OCD with lowest rate of 1.3%.

From this study we came to the conclusion that the co-occurrence presents challenges for diagnosis as well as for optimal patient management. Our findings have implications for treatment interventions. Indeed psychiatric and substance use disorder comorbidities are not trivial. Further analyses are needed to ascertain the functional relationship among these comorbid patterns and the long-term course of comorbidity as a function of treating one or the other disorder. It was a cross-sectional study that relied entirely on retrospective reports to assess the prevalence of lifetime disorders. Long-term longitudinal data collection is needed to evaluate the magnitude of recall failure and to adjust for its effects on prevalence estimates. No information from informants was obtained and institutional records were not checked. The fact that these things were not done means that the prevalence reported here should be interpreted as estimates rather than as definite diagnosis.

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