

Sociodemographic and substance use correlates of repeated relapse among patients presenting for relapse treatment at an addiction treatment center in Kolkata, India

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Abstract

Background: In India, substance abuse has infiltrated all socio-cultural and economic strata causing loss of productivity. Prevention of relapse is crucial for its control.

Objectives: To find out the pattern of substance use, relapse rate, its association with various socio-demographic factors and treatment related issues.

Methods: An observational study with cross-sectional design during April 2009-March 2010 at a de addiction centre was conducted among consecutive 284 clients admitted with relapse. They were detoxified earlier in the same centre. Data were collected by interviewing clients with schedule and clinical examination.

Results: Brown sugar (an adulterated form of Heroin) was primary drug of abuse in urban area contrary to alcohol in rural area. Commonest age of initiation was between 15-20 years. Polydrug abusers (59.1%) were common. Only 31.3% of the relapse cases took regular follow up. Common psychiatric illnesses were anxiety (44.7%) and depression (30.6%). Peer pressure (77.8%) was commonest cause of relapse. Significantly higher relapse episodes were present with increasing age, Muslim religion, ever marriage, poor literacy, current unemployment, living in nuclear rather than joint family, early age of initiation, longer duration of abuse and no follow up.

Conclusion: Regular follow up with family, peer and social support are essential along with vocational rehabilitation to prevent relapse.

Key words: drug abuse, relapse, addiction severity index, withdrawal, alcohol, brown sugar.

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Introduction

Substance abuse causes acute and chronic physical, psychological and social effects in varying amounts along with serious social problems in the form of crime, unemployment, family dysfunction and disproportionate use of medical care. Science has not yet explained fully the physiological and psychological processes leading to drug abuse. Substance abuse affects above 50 million people worldwide. Abuse of legally prescribed drugs is also increasing alarmingly. The annual worldwide drug revenues are now next only to arms trade.¹

In India, the abuse of alcohol, cannabis and raw opium has been traditionally known. The abuse of synthetic narcotic drugs and psychotropic substances is comparatively new. Substance abuse has

infiltrated all socio-cultural and economic strata causing loss of productivity.² Family stress, lack of coping skills, peer pressure, personality disorder, comorbid psychiatric illnesses, social stress and market forces act as risk factors.³ Survey shows that around 20-30% of adult males and 5% of adult females use alcohol while 57% of the male and 10.8% of the female drug users consume opiates in some form or other.⁴ Rapid assessment survey on substance abuse shows that the primary abused drugs are heroin (36%), other opiates (29%) and cannabis (22%); 75% of addicts start drug abuse before 20 years of age; in urban areas heroin abuse is more while in other sites cannabis abuse is more.⁵

Addiction is to be viewed as a chronic disorder in which relapse is the natural part of recovery process.⁶ Relapse is considered when a person returns to even a single usage of a substance or process of which they had previously established abstinence. Prevention of relapse is crucial for control of substance abuse disorder. The goals of treatment are abstinence from/ reduction of use of substance, reduction of frequency and severity of relapses and

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improvement of psychological and social adaptive functioning.⁷

Information on substance abuse in India is mostly anecdotal with scarcity of data and reports available only from small-scale surveys. It is important in Indian scenario to explore the different factors related with drug abuse. Drug abuse is a chronic illness. Aim of holistic management of drug abuse is to make the clients in sustainable period of drug free state. It has been observed that repeated relapse is common among drug abusers. The present study is therefore an effort to find out the pattern of substance use, morbidity pattern, relapse rate with its association with various socio-demographic factors and treatment related issues.

Methods

We conducted an observational study with cross-sectional design during April 2009-March 2010 at a de addiction centre run by a non Government organization, pioneer in the field of treatment and rehabilitation of drug abusers funded by Ministry of Social Justice and Empowerment, Government of India. Out of the 4 Government sponsored de-addiction centers situated in Kolkata, one was selected by simple random sampling method. The selected centre is situated in Sonarpur of District South 24 Parganas, West Bengal. The centre had 30 inpatient beds and 24 hour helpline for abusers and follow up facilities. The clients come either directly or via referral from the districts of West Bengal and other states. Average admission rate was 450 per year. 60% of the total admissions were relapses. A total of consecutive 284 clients admitted with relapse were taken as sample population. Patients who had been detoxified previously at that center were taken as “relapsers” in the study. Patients stay on an average for 1 month for completion of detoxification course that includes withdrawal and co-morbidity management.

Necessary ethical clearance along with permission from the Director of the Institute was taken and data collected by interviewing clients with predesigned and pretested schedule containing questions to explore information regarding socio-demographic and addiction related variables. Clinical examination (physical and psychiatric) was done by one researcher with desired training in this field. History sheets filled up during admission and previous health records were taken as secondary data. The completeness of the proforma was ensured by cross checking. The patients attending with minimum

one relapse with stable general conditions without signs and symptoms of withdrawals were included in the study. Some clients needed more than one sitting after giving informed consent. The patients were interviewed at the earliest possible time of their attending stable general condition (mean 13.4 days with SD 1.9 days from date of admission to time of interview).

The addiction severity ratings were done according to addiction severity index (ASI) scale 3rd edition validated and used by UNODC (United Nations Office of Drugs and Crime).⁸ The scales range from 0 – 9. Each rating was based upon the patient’s history of problem symptoms, present condition and subjective assessment of their treatment needs in a given area. The scoring was given in the areas of medical status, employment/support status, drug use, alcohol use, legal status, family relationship and psychiatric status. Total score was calculated and severity measured as per Likert’s scale. The scale was translated into local vernacular comprehensible to the patient with content validation by 5 subject experts.

Drug is defined as any substance that when taken into the living organism may modify one or more of its functions and abuse is a nonmedical, unsanctioned and maladaptive pattern of use of substances irrespective of its adverse physical psychological and social consequences. Withdrawal is a short lasting syndrome characterized by cluster of symptoms, often specific to the drug use, which develops from total or partial withdrawal of a drug usually after repeated and / or high dose. Detoxification is a process by which an individual is cleansed of the toxic effects of substances he/she was addicted to. After Care is the provision of services for a recovering addict after detoxification to ensure readjustment and normal functioning within the community.⁹

The data were tabulated in Microsoft Excel 2007 and analyzed by Epi info 3.5.1 and SPSS 16.0 software for proportions and chi-square tests as test of significance and binomial logistic regression analysis.

Results

A total of 284 persons were interviewed and examined during the study period which revealed that majority (88%) belonged to 20-49 year age group with mean age 31.2 years and Standard deviation 7.1 years. Majority were Hindus (64.8%) and males (96.8%). Most of the relapse cases were

employed (61.3%), currently married (45.8%) and illiterates (10.2%). 34.2% were below poverty line according to Modified Prasad socio-economic scale¹⁰ (based upon per capita monthly family income in Indian currency regularly updated as per consumer price index of India); 57.7% belonged to nuclear families and maximum proportion were urban residents (60.5%). (table 1)

Proportion of alcohol as primary drug abuse in urban and rural area were 73.4% and 26.6 % respectively where as brown sugar (an adulterated form of Heroin) abuse in urban area was 78.1%. In

80% of cases age of initiation of drug abuse was between 18-25 years. Most common drug on initiation was cannabis. It was observed that shifting of drug from initial to last detoxification was 42.9% to 1.4% for cannabis, 92% to 38% for alcohol and 6.3% to 51.4% for brown sugar. Injecting drug users were 7.8%. Forty nine percent clients had been taking drugs for 10-20 years. All of them used tobacco. Poly drug abusers were more common. Commonest route was inhalation followed by oral. (table 2)

Table 1 : distribution of study sample according to socio-demographic factors

Attributes		Frequency (n=284)	Percentage
Age (in completed years)	10-19	26	9.2
	20-49	251	88.4
	50 & above	7	2.4
Sex	Male	275	96.8
	Female	9	3.2
Religion	Hindu	184	64.8
	Muslim	48	16.9
	Others	52	18.3
Marital status	Currently married	130	45.8
	Unmarried	116	40.8
	Ever married	38	13.4
Literacy status	Illiterate	29	10.2
	Up to primary	74	26.0
	Secondary	130	45.8
Present occupation	Higher secondary and above	51	18.0
	Employed	174	61.3
	Never employed	79	27.8
Social class (modified Prasad scale)	Currently unemployed	31	10.9
	VI (Below poverty line)	97	34.2
	V(poor)	109	38.4
	IV(lower middle)	27	9.5
	III (upper middle)	21	7.4
Type of family	II(upper)	12	4.2
	I(upper high)	18	6.3
	Nuclear	164	57.7
Place of residence	Joint	120	42.3
	Urban	172	60.5
	Rural	112	39.5

Table 2: distribution of study sample according to pattern of drug abuse (n=284)

Pattern of drug abuse		Frequency	Percentage
Type of current drug abused	Brown sugar	146	51.4
	Alcohol	109	38.3
	Morphine	22	7.8
	Cannabis	4	1.4
	Sedative	3	1.1
Age of initiation (in yrs)	<18	17	6
	18-25	227	80
	>25	40	14
Duration of drug abuse (in yrs)	<10	110	38.7
	10-20	139	49.0
	>20	35	12.3
Pattern of initial drug abused	Cannabis	122	43.0
	Alcohol	102	35.9
	Sedatives	32	11.3
	Brown Sugar	18	6.3
	Morphine	10	3.5
Number of drug abused	Multiple	168	59.1
	Single	116	40.9
Tobacco use pattern	Combination	157	55.3
	Smokeless tobacco	65	22.9
	Smoking	62	21.8
Route of drug abuse*(multiple choice)	Inhalation	152	53.5
	Oral	150	52.8
	IV/IM	22	7.8
Drug abuse in social situation	In groups	188	66.2
	Alone	96	33.8

Commonest combination with relapses was alcohol with cannabis (20.1%). Most of the relapse cases were put on conventional treatment that included withdrawal of relapsed drug, management of withdrawal symptoms and co-morbidities with rehabilitation. Substitution therapy is a form of non-conventional treatment. Only 31.3% of the clients with relapse were on regular follow up. Relapses within first year of follow up were more common. 75.4% had a single episode of relapse last year. Mean number of relapse episodes were 1.4 (SD 0.8) for the patients. Moderately severe addiction calculated by ASI scoring was more common among alcohol addicts (table 3).

Co morbid psychiatric illness was present in 260 clients. The common illnesses were anxiety (44.7%), depression (30.6%) and paranoid delusion (9.8%). Suicidal ideas were present among 1.4% of the clients with 0.7% cases reporting attempted suicide. 23.9% of the relapse cases reported some stressful events before current episode of relapse.

Common physical illnesses were anemia (64.1%), respiratory illness (42.6%), glossitis (27.8%), hypertension (5.6%), diabetes (2.1%), tuberculosis (1.4%) and sexually transmitted diseases (1.4%).

Most of the relapse cases (71.1%) knew that addiction is not curable, drug abuse is injurious to health (96.8%) and all of them knew that treatment is given by NGO run hospital while 7.8% opined that government hospitals also provide detoxification treatment. Peer pressure (77.8%) was the commonest cause of relapse cited followed by acting out (62.7%), family pressure (20.1%) and unemployment (27.5%). The clients wanted to quit drug(s) to come to the mainstream of life (58.1%), to support family (53.2%) and to get relief from pain (48%). Irregular work-attendance (47.6%) was less common among service holders (salaried employee in government or private sector) compared to self employed abusers (53.8%).

Table 3: distribution of study sample according to relapse and its management (n=284)

Relapse and its management		Frequency (n=284)	Percentage
Severity of addiction	Not severe	2	0.7
	Slightly severe	88	31.0
	Moderately severe	105	37.0
	Considerably severe	73	25.7
	Extremely severe	16	5.6
Severity of withdrawal	Mild	72	25.4
	Moderate	177	62.3
	Severe	35	12.3
Stressful event before last relapse	Present	68	23.9
	Absent	216	76.1
Relapse episodes	Once in last year	214	75.4
	> 1 in last year	70	24.6
Type of treatment	Conventional	272	95.7
	Non conventional	12	4.3
Pattern of follow up	Irregular	107	37.7
	Regular	89	31.3
	No follow up	88	31.0

Table 4: association of relapse rate with socio-demography, abuse and follow up pattern (n=284)

Variables	Relapse rate		Test of significance
	One in last year(n=214)	>One in Last year(n=70)	
Age (yrs)	10-19	20	p=0.0145
	20-49	192	
	>50	2	
Sex	Male	206	p=0.338 OR=0.37 (0.02-3.02)
	Female	8	
Religion	Hindu	165	p=0.0001
	Muslim	18	
	Others	31	
Marital status	Currently married	114	p=0.0001
	Unmarried	90	
	Ever married	10	
Literacy status	Illiterate	7	p=0.0001
	Up to primary	56	
	Secondary	108	
	HS and above	43	
Occupation	Currently Employed	147	p=0.0001
	Never employed	57	
	Currently unemployed	10	
Social class	Upper	20	p=0.418
	Middle	35	
	Lower	159	
Type of family	Nuclear	116	p=0.0346 OR=0.54 (0.29-1.00)
	Joint	98	
Place of residence	Urban	129	p=0.8645 OR=0.95 (0.53-1.72)
	Rural	85	

Continuation of table 4

Variables	Relapse rate		Test of significance
	One in last year(n=214)	>One in Last year(n=70)	
Age of initiation (Years)	<18	5	p=0.0001
	18-25	177	
	>25	32	
Duration of use (Years)	<10	99	p=0.0001
	10-20	107	
	>20	8	
Pattern of follow up	Regular	87	p=0.0001
	Irregular	85	
	Nil	42	

Table 4 depicts association of relapse episodes with socio-demographic factors, abuse pattern and follow up to treatment pattern. Statistically significantly higher relapse rate was present with increasing age, Muslim religion, ever married population, poor literacy level, current unemployment, living in nuclear family rather than joint family, early age of initiation, longer duration of abuse and no follow up ($p < 0.05$).

Significantly related attributes were tested in table 5 by binomial logistic regression analysis to determine main confounding effects and share of factors in table 4 by estimation of Cox and Snell pseudo R square and regression equation. Age (10-19 years), Hindu religion, currently married status, being employed at present and being on follow up treatment were significant protective factors from increased rate of relapse ($p < 0.05$).

The reference categories were: age 20 years or more, religion Muslims and others, unmarried or ever married, literacy (literate up to any standard combined), currently unemployed or never employed, joint family, age of initiation 18 years and

above, duration of drug use 10 years and above and no follow up at all. Cox and Snell pseudo R square 0.47. -2 log likelihood ratio 138.58.

Discussion

A descriptive cross-sectional study was conducted among the relapse cases admitted in a de-addiction centre in Kolkata. The study population were mostly males and between 20-29 years of age (37%). In a study⁵ by Ministry of Social Justice and Empowerment in 33 cities in India revealed that commonly affected age group was 16-35 years whereas studies conducted in Bangladesh^{11,12}, USA¹³, Vietnam¹⁴ found that mean ages of drug abusers were 25-35, 20-25, 25-35 and 27 years respectively. Nessa et al reported that 91% of drug addicts were young and adolescents¹⁵. Present study revealed that majority were Hindus (64.8%) whereas national survey found no significant difference in religion⁵.

National survey found that 29% of the drug abusers were illiterates and significant number of them came from lower strata. Marital Status did not contribute to drug abuse.⁵ We found that 10.2% were

Table 5: Parameter Estimates in binomial logistic regression analysis for predicting relapse (more than once/year)

Predictors	B	S.E.	Wald	df	Sig.	Exp(B)
Age (10-19 years)	-3.245	1.473	4.851	1	.028	.039
Religion (Hindu)	-5.147	1.039	24.545	1	.000	.006
Marital status (currently married)	-2.517	.681	13.659	1	.000	.081
Literacy status (Illiterate)	1.270	1.426	.793	1	.373	3.561
Occupation (Currently employed)	-1.518	.588	6.672	1	.010	.219
Family type (Nuclear)	2.943	.977	9.069	1	.003	18.973
Age of initiation (<18 years)	.451	1.511	.089	1	.765	1.570
Duration of use (<10 years)	-.116	.954	.015	1	.903	.891
Pattern of follow up (Yes)	-2.403	.549	19.184	1	.000	.090
Constant	2.941	.770	14.589	1	.000	18.926

illiterates; 40.8% were unmarried; 10.9% were unemployed; 34.15% cases had per capita income (PCI) of family per month < Rs 1000. Study at Tihar jail in India (2001)¹⁶ among 6800 male drug abusers found that commonest age group was 21-25 years; 50% were illiterates; 44% were unmarried; 8% were unemployed.

Present study revealed that brown sugar (adulterated form of Heroin) and alcohol were the most commonly abused drugs in urban and rural areas respectively. Heroin was the most common abused drug in studies conducted in Bangladesh¹⁵, Tihar jail¹⁶ (82%), in Delhi by Raj et al¹⁷ (58%), Vietnam¹⁴, Pakistan national survey (2000) (46%)¹⁸ and Arunachal Pradesh¹⁹.

In present study, most of the abusers initiated drug use between 18-25 years of age and most common initial drug of abuse was cannabis similar to the findings of Household Survey (1996)²⁰ in USA. Mean age of initiation of tobacco and alcohol intake were 20.1 and 21.6 years respectively in a study conducted by Hazarika et al in border area of Assam and Arunachal Pradesh (2000)²¹.

It was also observed that shifting of choice of chemicals were more in cannabis than to brown sugar and less with alcohol. Commonest route of addiction was inhalation followed closely by oral. Similar findings were noted in the study conducted in Pakistan¹⁸.

We found that anemia, respiratory illness and glossitis were most common physical illnesses while anxiety was most common psychiatric illness followed by depression. Similar physical and mental dysfunctions were reported in Tihar jail study¹⁶ among 65% of the drug abusers while Regier et al (1990)²² found anxiety, mood and personality disorder the most common. The abusers mostly used polysubstances and usage began at early age²². Present study found that maximum persons were taking poly drugs also similar to the findings of Chaturvedi et al²³. Insomnia, irritability and body ache were common morbidities as reported by Divya Agarwal et al²⁴ while Montoya et al (1995)²⁵ reported that among treatment seekers for drug abuse 64% had psychiatric illnesses on presentation.

Maximum proportion (49%) of clients with relapse were taking drugs for 10-20 yrs. Anthony and Helzer reported average duration of addiction to be 6.1 years²⁶.

In the present study 71.1% of the clients told that drug abuse was not curable. Most common cause of relapse was peer pressure (77.8 %) followed by

curiosity. Several other studies identified risk factors for substance abuse and relapse like mental illness, lack of protective housing, social and neighborhoods problems, inter personal pressure, isolation, no recreation, lack of trust and social security²⁷⁻³⁰. We found that 58.1% relapse cases wanted to quit drugs to return to normal life while 53.2% said that they wanted to support their family. Heymen et al³¹ (1996) discussed problems regarding quitting drug abuse. 79.9% blamed peers for their relapse while 24.7% blamed friends and 9.9% put the onus on neighbors and relatives.

As the present study is an institution based descriptive study, there may be recall bias, misclassification bias and conscious falsification which could not be totally excluded. We have only included patients with relapse. Estimation of relative risk was not done. Long duration of abuse pattern in addicts with non adherence to treatment regime leads to different physical and psychological morbidities along with moderately severe withdrawal symptoms. Peer pressure was commonest cause of relapse cited and opting for mainstream of life was the major stimulant to quit.

Conclusion

Psychiatric illnesses are frequent among relapse cases, so family members have got a definite role in providing support and care to the relapse cases. In our study the findings of lower relapse cases among members of joint families and married persons rather than nuclear families and divorced or separated persons give support to this view. Financial security in the form of employment is critical for recovery and social rehabilitation of relapse cases. It is observed that regular follow up care of patients is needed, as with regular follow up patients with lesser relapse find confidence and allows better commitment to therapy. Larger cohort studies with standard psychiatric assessment tools could enrich our knowledge.

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