One Year Follow up Study of Heroin Dependent Patients to Study Risk Factors Associated with Relapse.

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ABSTRACT

Background: Substance use disorders have acquired an epidemic proportion in the world. The aim of the follow up study was to find out the relapse rate in persons with opioid dependence after inpatient treatment and various risk factors associated with relapse. **Methods:** A semi structured proforma was used to collect socio demographic details of the patients. Patients were diagnosed with heroin dependence using ICD-10 criteria. A period of in-patient treatment was followed by the discharge of the patient on outpatient treatment in Outpatient Opioid Assisted Treatment (OOAT) clinic. The discharged patient was followed up at interval of 3 months, 6 months and 1 year using a semi-structured proforma for risk factor assessment. **Results:** Most of the patients (63.52%) in this sample were I/V drug users. At the end of the study period, 42.48% were abstinent, 38.2% were relapsed and 19.32% were drop out from the study. Indulgence in those peer groups who are heroin-dependent (2b) was the most common risk factor present in the relapsed sample (69.66%). An increase in the status of relapse was found with a decrease in the education level, duration of heroin dependence and an increase in the expenditure on heroin (p<0.05). **Conclusion:** Early identification of these risk factors in high risk patients will be more effective in delivering focused treatment and thus improving the outcome in these heroin dependent patients.

Keywords: Heroin dependence, Risk factors, OOAT, Relapse.

INTRODUCTION

South Asia is surrounded by the largest heroin and opium-producing regions of the world. On one side by the golden crescent (consisting of Afghanistan, Pakistan and Iran) and another side by the golden triangle (the triangular zone in Southeast Asia that overlaps Burma, Thailand and Laos). This results in high vulnerability to drug abuse.[1]

The essential features of substance use disorder are cluster of cognitive, behavioural and physiological symptoms indicating that individual continues using the substance despite significant substance-related problems.[2]

Opioid dependence is characterized by the presence of craving (urge to procure and use the opioid), tolerance (amount of the substance taken increases with time in order to achieve same effects or same dose is not able to achieve earlier effects) and when stopped abruptly leads to withdrawal syndrome.[3]

After a period of abstinence by a formerly dependent person, restart of drug use results in the occurrence of previous dependence symptoms. Some distinguish return to the drug between relapse and lapse. Lapse is a single occasion of drug use. Relapse is a very common phenomenon and number of drug user relapse several times before achieving long term abstinence.[4]

Punjab Opioid Dependence Survey (PODS) highlighted the opioid dependence scenario in the state of Punjab. It was carried out in 10 districts of Punjab. According to this survey, the most common opioid drug used was heroin (53%), followed by opium/doda/bhukki (33%) and pharmaceutical opioids (14%). About one third used intravenous route for taking opioids and almost 90% intravenous drug user injected heroin. Peer influence was reported by 75% as the most common reason for starting the opioid. About 80% reported that they had tried to quit drug use in the past but only 35% had received any kind of treatment. Total estimated number opioid-dependent were about 2.3 lakh and opioid users in Punjab could be approximately 8.6 lakh. The estimated annual expenditure on opioids by the dependent individual is about Rs. 7575 crores per year.[5]

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A follow-up study of 109 opiate-dependent patients was done to measure the outcome after 6 weeks of treatment program including inpatient treatment with methadone and benzodiazepine. Maudsley Addiction Profile was used during follow up. The socio-demographic profile revealed 67% men and the median age of the sample was 23 years. 7% were employed. 79% of patients admitted of using injection. The family history of substance abuse was present in 60% of patients. The mean duration to follow up was 29 months. During follow up, 50% of patients reported misuse of at least one opiate. The factors significantly associated with the abstinence were found to be completion of inpatient treatment, follow up treatment for at least 6 months, no history of injection use and absent family history of substance abuse.[6]

A prospective 2 year follow up study of 109 opiate-dependent individuals was carried out after 6 weeks of inpatient detoxification with methadone and lofexidine. Out of the total sample, 36% were females, 89% were unemployed, and the median age at the time of admission was 22 years. The most common opioid used was heroin in 88% of the patients. Follow up data reported that 94% of patients showed lapse while 94% relapsed out of which 80% reported relapse within one month of discharge. In approximately 74% of cases of lapse, relapse occurred within one week. Factors associated with relapse were: a history of injecting drug use, past detoxification treatment, history of imprisonment, failure to complete inpatient and follow up treatment.[7]

Aims and objective

1. To study the socio-demographic profile of heroin-dependent patients
2. To study treatment outcome.
3. To study risk factors associated with relapse.

MATERIALS AND METHODS

The present study was conducted at Swami Vivekananda Drug De-addiction and Treatment Centre and Government Rehabilitation Centre Amritsar under the Department of Psychiatry, Government Medical College, Amritsar. Permission of the institutional ethical committee was taken. All consecutive patients during a period of 1 year in year 2018 to 2019 were selected and studied prospectively. A total of 233 patients were taken for the study. Precise aim of the interview, nature of the study was explained to the patients and informed consent was taken. Patients were interviewed using a questionnaire that will include questions about demographic, personal and environmental characteristics of the patients diagnosed with heroin dependence using ICD-10 criteria. The diagnosis was confirmed by a senior consultant. A period of in-patient treatment depending upon the willingness

and the convenience of the patient was followed by the discharge of the patient on outpatient treatment in Outpatient Opioid Assisted Treatment (OOAT) clinic where buprenorphine is given to the patients daily. The discharged patient was followed up at interval of 3 months, 6 months and 1 year. The follow-up visits included a visit to the centre by the patients or by the interviewer to the patient's house. During each visit relapsed patients were interviewed using a semi-structured proforma for risk factor assessment. Such relapsed patients were not followed ahead.

Inclusion criteria:

1. Opioid addicts exclusively males.
2. Those patients who were admitted in Swami Vivekananda Drug De-Addiction and Treatment Centre and Government Rehabilitation Centre Amritsar.
3. Those patients who were willing to give consent for follow-up at 3 months, 6 months and 1-year interval.

Exclusion criteria:

1. Patients who were not willing to give consent/inability to give consent.
2. Mentally retarded patients.
3. Major cognitive dysfunction.
4. Existing medical condition that would interfere with the treatment.

Statistical analysis:

Data was expressed as mean, standard deviation, number and percentages. Further chi-square was applied to compare the various factors with the status of relapse.

RESULTS

The majority of patients belonged to the age group of 14-29 years (60.52%) followed by 33.04% patients in the age group of 30-45 years. The mean age of patients at presentation was 29.75±8.1 years. Only males (100%) were taken for the study. Most of the patients (46.35%) were educated up to higher secondary, 15.88% were middle pass, 13.73% were educated up to primary level. Most of the patients (35.62%) were farmers, 18.88% were unemployed, 17.95% were skilled workers. Most of the patients (66%) were married and 33% were unmarried. More than half of the patients (57.93%) belonged to a joint family, 41.2% of patients were from nuclear family while 0.85% were living alone. The most of the patients (46.35%) were from an urban area, 38.2% were from a rural area and 15.45% belonged to semi-urban area. Most of the patients (63.52%) in this sample were I/V drug users while 36.48% were non I/V users.

The majority (71.2%) of patients revealed peer pressure as the main reason for the initiation of heroin use, 14.16% of patients had initiated heroin

use due to curiosity, 7.72% due to work pressure while, 6.87% had initiated heroin use to increase their sexual performance [Figure 1.1].

Table 1: Distribution of sample on socio- demographic variables.

Category	Variables	Frequency	Percentage
Gender	Male	233	100
	Female	0	0
	Total	233	100
Age in years	14-29	141	60.52
	30-45	77	33.04
	46-65	15	6.44
Educational status	Illiterate	22	9.45
	Can read and write	16	6.87
	Primary	32	13.73
	Middle	37	15.88
	Higher sec	108	46.35
	Graduate	14	6
	Post Graduate	4	1.72
Background	Urban	108	46.35
	Semi urban	36	15.45
	Rural	89	38.2
Family Type	Nuclear	96	41.20
	Joint	135	57.94
	Living alone	2	0.86
Marital Status	Married	154	66.10
	Unmarried	77	33.04
	Widower	1	0.43
	Divorced	1	0.43
Occupation Status	Professional	9	3.86
	Semi professional	6	2.57
	Skilled	41	17.6
	Unskilled	26	11.16
	Farmers	83	35.62
	Students	24	10.3
	Unemployed	44	18.89
Intravenous Status	I/V User	148	63.52
	Non I/V User	85	36.48

At the end of the study period, 42.48% were abstinent, 38.2% were relapsed and 19.32% were drop out from the study.

Most of the patients (68.54%) relapsed during the first follow up period, 13.48% relapsed during the second follow up period and 17.98% relapsed during the third follow up [Figure 1.2].

Indulgence in those peer groups who are heroin-dependent (2b) was the most common risk factor present in the relapsed sample (69.66%) followed by patients with a monthly income of Rs. 5000-15000 per month (1b) in 60.67% of relapsed patients. Liking for risk-taking behaviour (3a) risk factor was present in 43.82%, married and conflicted relation risk factor (6b) in 42.69%, any craving for drug intake when alone (risk factor 3b) in 40.45%, anger outburst episodes (4b) in 40.45% of relapsed patients. Indulgence in drug selling activities (2c) was present in 35.95% and any stressful episode (4a) in 32.58% of the relapsed sample. Risk factors of monthly income above Rs. 20,000 (1c) was present in 16.85%, primary pass (5b2) in 8.98%, middle pass (5b3) in 7.86%, any pending charges/ any land-related disputes (8a) was present in 7.86% and divorced (6c) in 5.61% of relapsed sample.

No significant association was found between age of presentation, marital status, occupational status, locality of patients, type of family, reason for initiation of heroin use and status of relapse ($p > 0.05$).

An increase in the status of relapse was found with a decrease in the education level, duration of heroin dependence and an increase in the expenditure on heroin ($p < 0.05$). Increased monthly expenditure on the drugs means more amount of heroin used and hence it was associated with increased relapse rate.

A statistically high significant association was found between intravenous drug use, number of previous detoxifications with the status of relapse ($p < 0.01$).
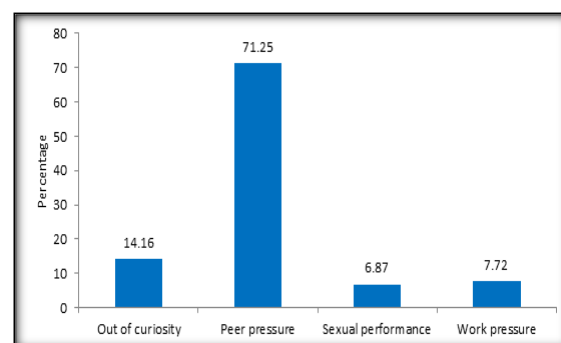

Figure 1.1: Reason for Initiation

Table 2: Distribution of Total Sample According To Status of Relapse (n=233)

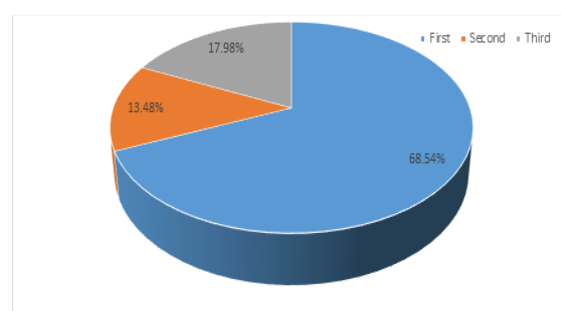| Status of relapse	No. Of patients	Percentage (%)
Relapsed	89	38.20
Non relapsed	99	42.48
Drop out	45	19.32
Total	233	100

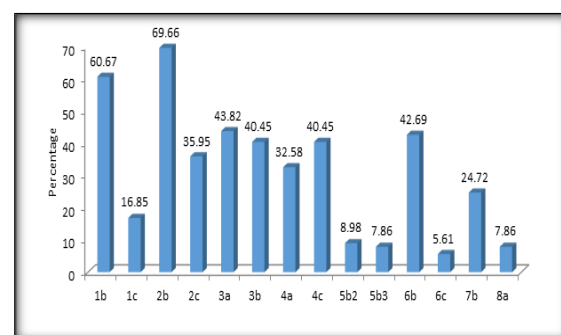**Figure 1.2: Distribution of relapsed sample according to visit of relapse**

Percentage of different risk factors in relapsed sample   **(n=89)**

Table 3: Association of various factors with status of relapse

Factors	Variables	Relapsed (89)	Non Relapsed (99)	No. of Patients (n=188)	p value
Age of Presentation (in years)	14-29	53	58	111	0.990
	30-45	30	34	64	
	46-65	6	7	13	
Marital Status	Married	58	69	127	0.485
	Unmarried	29	30	59	
	Divorced	1	0	1	
	Widower	1	0	1	
Status of I/V use	I/V user	68	56	124	0.004
	Non I/V user	21	43	64	
No. of Previous Detoxifications	0	24	53	77	0.0005
	1	32	28	60	
	2 or more	33	18	51	
Education Status	Illiterate	11	6	17	0.010
	Can read and write	7	6	13	
	Primary	22	7	29	
	Middle	10	19	29	
	High secondary	33	51	84	
	Graduate	5	7	12	
	Post Graduate	1	3	4	
Occupation Status	Professional	3	5	8	0.179
	Semi professional	2	4	6	
	Skilled	23	13	36	
	Unskilled	9	13	22	
	Farmers	31	34	65	
	Students	9	6	15	
	Unemployed	12	24	36	
Locality	Urban	44	46	90	0.753
	Semi urban	11	16	27	
	Rural	34	37	71	
Family type	Nuclear	33	46	79	0.193
	Joint	56	53	109	
Reason for initiation	Curiosity	14	15	29	0.645
	Peer pressure	60	73	133	
	Sexual performance	7	4	11	
	Work pressure	8	7	15	
Duration of Heroin Dependence (in years)	1-5	33	51	84	0.041
	6-10	47	45	92	
	>10	9	3	12	
Monthly expenses (Rs.)	<15000	10	28	38	0.013
	15000-45000	55	52	107	
	>45000	24	19	43	

DISCUSSION

In our study, the majority of patients belonged to the age group of 14-29 years (60.52%) and 33.04% of patients were in the age group of 30-45 years. The mean age of patients at presentation was 29.75±8.1 years. Our findings were supported by Nigam et al (1993), in their study mean age of substance abuse was 28.7±7.2 years.[8]

In our study, exclusively male heroin-dependent patients were taken. In a study done by Lal and Singh (1978) only one female opioid user was found.9 Mohan, Dhar and Lal conducted a study in which the whole study sample (n=180) comprised of males.[10] Regarding the education status, most patients (46.35%) were educated up to higher secondary in our study sample. Mattoo et al conducted a study in which 55% of patients were educated above high school level.[11] Singh also reported 40% of his study sample educated up to higher secondary.[12]

In our study, the majority of patients (35.62%) were farmers and 18.88% were unemployed. The majority of patients in our study sample belonged to joint families (57.93%) and 41.2% patients belonged to nuclear families. Our findings were supported by studies done by Singh and Kalra et al in which 32% and 42.5% of patients were farmers and 51.5% and 80% of patients belong to joint families respectively.[12,13]

In our study, most patients belonged to the rural and semi-urban area (53.65%) and 46.35% were from the urban area. Our findings were supported by the study of Kalra et al in which the majority of patients belonged to the rural population (85.5%).[13]

Regarding the marital status, most of the patients (66%) in our study were married. Our study findings were supported by studies of Chavan et al and Malik

et al who reported 73.80% and 95% of their study sample were married respectively.[14,15]

In our study of 233 patients, 99 patients were abstinent (42.48%), 89 (38.2%) were relapsed and 45 (19.32%) were dropped out. Maximum no. of patients (61) relapsed during the first visit followed by 12 patients in second visit and 16 patients in third follow up visit. The no. of lapsed patients kept on decreasing with sequential follow-ups. On the other hand, the frequency of abstinent patients kept on increasing with sequential follow up. Our findings were supported by a study of Chalana et al who conducted one year follow up study on opioid-dependent patients in which relapse rate was found to be 31.54%.[16] Smyth et al reported in their study 46% abstinent rate at 12 months in heroin-dependent patients.[17] Basu et al conducted a study in which they concluded that initial drop-out rate was higher (61.4%).[18]

In our study, no significant association was found between age of presentation, marital status, occupational status, locality of patients, type of family, the reason of initiation of heroin use and status of relapse (p>0.05). Our study findings were supported by the study of Chalana et al in which they found no significant association between above socio-demographic factors and relapse status.[16]

In our study, high significant association was found between intravenous drug use and status of relapse. In addition to this factor, poor educational level, number of previous detoxifications, duration of heroin dependence was also significantly associated with increased relapse rate (p<0.05). Our findings were supported by a study of Smyth et al and Chalana et al in which significant association was found between these factors and status of relapse.[7,16]

In our study, indulgence in those peer groups who are heroin-dependent was the most common risk factor present in the relapsed sample (69.66%) followed by patients with a monthly income of Rs. 5000-15000 per month in 60.67% of relapsed patients. Liking for risk-taking behaviour as a risk factor was present in 43.82%, married and conflicted relation risk factor in 42.69%, any craving for drug intake when alone in 40.45%, anger outburst episodes in 40.45% of relapsed patients. Most of the relapsed sample in our study showed the presence of multiple risk factors associated with relapse. These findings were supported by different studies like Sau et al in which peer pressure was the cause of relapse in 77.8% of cases followed by acting out, family pressure and unemployment and poor educational level.[19] Unithan et al in their study highlighted the importance of interpersonal factors like regularly meeting other drug users, being offered drugs and persistent negative mood states associated with relapse.[20] Afkar et al also highlight individual factors like having addicted friend, availability of substance, rejection by friends as the most important factors in relapse.[21] Mohammadpoorasl et al in their study concluded that those patients who remain connected with drug user friends after the abstinent show a high rate of relapse.[22] Chalana et al also supported our findings of risk factors like presence of craving for drugs at discharge from hospital, presence of various legal complications and the presence of physical and verbal abuse.[16] Mufti et al also found several factors associated with relapse consistent with our study findings like family conflicts, social problems, occupational stress etc.[23]

CONCLUSION

In our study, majority of relapsed patients showed the presence of multiple risk factors. Most frequent risk factors were indulgence in heroin dependent peer groups, monthly income of Rs. 5000- 15000 per month, liking for risk taking behaviour and married but conflicted relation. Early identification of these risk factors in high risk patients will be more effective in delivering focused treatment and thus improving the outcome in these heroin dependent patients.

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