ORIGINAL ARTICLE

Injectable Opioid use: An insight into the problem

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Abstract

Background: The present study characterizes the socio-demographic variables of injection drug users (IDUs) attending Oral substitution therapy (OST) center. **Aims & Objectives:** To provide a comprehensive knowledge and better insight regarding the socio-demographic profile and pattern IDUs. **Material & Methods**: A total of 158 IDUs aged 18 to 60 years who attended the OST centre during one-year period at a government medical college are included in the study. **Results:** All the IDUs are male with median age of 33.13 years. More than half of the participants are homeless and earn their livelihood by rag picking and rickshaw driving. 35.4% of participants are married. Their mean monthly income is Rs 2823.4 ± 1811.8 and they spend a major amount of it on drug use. **Conclusion:** All the participants are using Pharmaceutical Opioid injections (POI), mostly as cocktail with benzodiazepines and antihistamines. Sharing of needle and paraphernalia is present in most of the participants especially among the illiterate and low income group IDUs.

Keywords

Injection drug users; POIs; Oral substitution therapy; unsafe injection practices; high risk behavior.

Introduction

Injection drug use (IDU) is one of the major problems of modern society in both developed and developing countries. There are about 15.9 million (range 11.0-21.2 million) injection drug users (IDUs) across the world (1,2). In South, East & South-East Asia Region there are approximately 3.9 million (range 3.5–5.6 million) IDUs and HIV prevalence in them ranges from 10 to 43%414.0 million people between the ages of 15 and 64 are estimated to be injecting drugs, while 1.6 million people who inject drugs are living with HIV (3). In India there are around 177,000 IDUs with an estimated HIV prevalence of 7.1%. (5)

Despite of various other modes of drug intake, Injection of drugs is favored by some users because of greater availability of drug that can be injected, cheaper cost, more rapid action, no loss of the drug in smoke, production locations and trafficking routes, migrating drug users sharing knowledge and techniques (6) It bypasses first-pass metabolism in the liver, resulting in a higher bioavailability, and shorter, more intense high that can lead to a dependency developing more quickly than with other methods of taking drugs.

IDU adversely effects individual, family and community resulting in low self-esteem, social withdrawal and disharmony, economic setbacks, domestic abuse and crime (7). High risk behavior (unsafe injection practices, using and sharing dirty needles and paraphernalia, risky sexual behaviour for drug exchange) associated with IDU facilitates the transmission of infections particularly HIV and hepatitis (3) and considerably increases (13 - 38 times) the morbidity and mortality than general population (8,9). Only 5.6% of IDUs in India are receiving opioid substitution therapy with buprenorphine (10).

IDUs are at an increased risk of various medical and psychiatric disorders and have poor quality of life.

Aims & Objectives

To provide a comprehensive knowledge and better insight regarding the socio-demographic profile and pattern IDUs.

Material & Methods

This cross sectional was conducted among all the new IDUs of age > 18 years and <60yrs of age, of either sex attending the Opioid Substitution Therapy [O.S.T.] centre in Sarojini Naidu Medical College (SNMC), Agra for one-year period from April 2014 to March 2015, and have injected drugs at least once in past 3 months have been included in the study after taking written informed consent. Each IDU is interviewed in detail by separate questionnaires regarding socio-demographic parameters (Kuppuswami scale), pattern, type and frequency of drug used in injection.

Inclusion criteria: Age 18 to 60 yrs, those IDUs of one-year duration, current IDUs (who have injected drugs at least once in last 3 months), those giving consent to participate in study.

Exclusion criteria: age <18 and >60yrs, pregnant and lactating women.

Ethical Clearance: The study was approved by the ethical committee as post graduate thesis.

Results

A total of 158 IDUs are enrolled in the study and all of the participants are male as none of the female IDUs have attended the OST centre during the study period. As shown in (Table 1) most of the participants were less than 40 years of age, urban resident and 64.6% of them are unmarried, divorced or separated. Most of the IDUs are of lower educational status and educated up to primary or middle school. 63.3% of the participants are unskilled worker and 50% of the IDUs are homeless and live on the street. Most of the IDUs spent 51-75% of their income on drug use and 10.8% of the participants are unemployed are totally dependent on the family and friends for their financial expenses related to drug use and other chores (Table 2). As shown in (Table 3), 86.1% of IDUs are of upper-lower socio-economic status. 50% of the participants are using injection drug for last 4-6 years with mean duration of use of 4.9 ±2.9 years (Table 4). As shown in (Table 5) all the participants are using a combination of a pharmaceutical opioid injection (POI) mostly in combination with benzodiazepine or antihistamine and only 20.9% of IDUs are using POI alone. Sharing of needle and paraphernalia is present in 57% of the IDUs mostly 1-3 times in 10 injecting practices (Table 6). Sharing of needles and paraphernalia is more commonly seen in younger age groups (18-30 years) 65% which contributed to 50% of overall needle sharing, illiterate, low income group and unemployed participants (Table 7, Table 8 & Table 9).

Discussion

A total of 158 IDUs who have attended the OST centre in SN Medical College, Agra are included in the study. As shown in Table 1, most of the IDUs (~82) belong to 18-40 years of age with mean age of 33.13 ± 9.19 years, and only 12.6 of them were aged 45 years or older. In a study conducted by Armstrong *et al* (11) in 2013 among 420 male IDUs at Delhi found that mean age of participants was 36.7 years and one quarter (26) aged 45 or older. Medhi *et al* (12) described that the typical IDUs in India are male; aged between 15 and 35 & only. Mean age of first illicit drug injection in our participants is 28.2 ± 8.8 years (13,14). So the most productive years of life of an IDU are wasted due to drug abuse. After 40 years of age tendency to dependent on opioids remit spontaneously and has been called “maturing out” (15).

35.4% of our participants are married, rest are unmarried, divorced or separated. In a study by Sarin (16) and colleagues on 449 IDUs in New Delhi shows that 35% of the participants were married, but only 26% lived with their spouses and rest were separated. In another study by Kermode *et al* (13) on IDUs in Nagaland shows that 66% were single and 34% were married. It might be because IDUs spent most of their time and money in drug use and are unable to fulfill their social responsibilities.

Most of the participants in our study are either illiterate or of lower educational status and only 10.7% of the participants have passed high school as is shown in previous studies Kermode *et al* (13), Ambekar *et al* (17). 63.3% of the IDUs are unskilled worker and earn their livelihood mainly by rag picking and rickshaw driving. Sarin *et al* (16), Solomon *et al* (18) and Ambekar *et al* (19) shows that rag picking is the main occupation of IDUs in India and only few have respectable jobs or business. Mean monthly income of IDUs in the present study was Rs 2823.4 ± 1811.8, as is the income of IDUs of New Delhi (23) (less than Rs 100 a day) and of Manipur and Nagaland 13 (mean=Rs 3662/month, median= Rs 3000/ month, SD=31.3). Most of the participants spent substantial amount of their income on injection and paraphernalia (mean =Rs 2153.2 ± 818.8 per month) and it shows positive correlation with their monthly income. 52.5% of our participants are currently (in last 3 months) homeless and live on the street. These are mostly rag pickers and rickshaw drivers. Sarin *et al* (21), Ambekar *et al* (19), Armstrong *et al* (22), have also shown that 60-70% of the IDUs in India are homeless and others mostly have poor living arrangement.

In India here is geographical variation in type of Opioids used for injection (23,24). Although heroin injecting is reported from the northeastern states as well as the metropolitan cities, Pharmaceutical Opioid Injecting (POI) has been reported from other states of India. All of our participants were using POI. 87.3% (N=138) were using injection buprenorphine and rest 12.7% (N=20) were using injection pentazocine. 79% of the IDUs combine POI with injection diazepam and/or pheniramine in various fractions and combinations (the so called "South Asian Cocktail") (25), and only 21% were using it alone. They get these drugs from certain specific drug stores and chemist shops. 56.3% of our participants were injecting daily and 29.8% three to four days per week. Similar pattern of drug use was reported by Sarin *et al* (16), Ojha *et al* (25), Armstrong *et al* (22) and Ambekar *et al* (17). POIs are the predominant type of Opioids injected in India. Almost every state, with the exception of Manipur, reported injecting one or the other POI. This might be because POIs are cheaper than heroin in India (26). Most of these POIs are procured from neighborhood pharmacy shops without medical prescription due to lax mechanisms regulating pharmaceutical sales (27) and is safer than obtaining heroin from a drug dealer, which can be associated with dangers, including getting arrested or landing into other legal problems.

Sharing of needle and paraphernalia is seen in 57% of our participants. Most of the participants share 1-3 times in 10 injecting practices in last 3 months and many of them share used, re-used and even discarded needles & syringes. Most of them shared only with close friends and regular injecting partners. Sharing is more among the low income group IDUs and illiterate participants. Most of the IDUs procure needles and syringes from friends and chemist shops. They must be properly informed about the needle syringe exchange program (NSEP) and educated about needle sharing, needle hygiene and safe acquisition and disposal

Conclusion

Thus all the participants in our study were males, with a mean age of 33.13 ± 9.19 years. Most of them were of lower educational & socio-economic status; their main occupation was rag picking & rickshaw driving and majority of them were homeless. All of them were using POI (buprenorphine or pentazocine), mostly along with diazepam and / or pheniramine making a cocktail. Sharing of injection and paraphernalia was present in 57 of the participants, mostly among young, illiterate and low income group participants and proper education and information to the target population might help to reduce the harm caused by illicit drug injection

Recommendation

1. Opening of more oral substitution therapy (OST) centers at the district level and at high risk sites, maintaining the anonymity of subjects and free distribution of syringes and needles will help to tackle the problem of IDUs.
2. Psychological evaluation of these patients for behavioural therapy can be done at OST centres.

Limitation of the study

1. It's a hospital based study and only those IDUs could be accessed who themselves attended the OST centre
2. Effect of drug could not be assessed as it was an observational study

Relevance of the study

Studying socio-demographic variables of IDUs will lead to better understanding of the who's and why's of the Injectable drug use in India and will be helpful in planning useful studies on the subject

Authors Contribution

All the authors had made substantial contributions to conception, design, data collection, analysis and interpretation of data; drafting the article, revising it critically for important intellectual content; and final approval of the version to be published.

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Tables

TABLE 1 DISTRIBUTION OF STUDY PARTICIPANTS AND SOCIO DEMOGRAPHIC VARIABLES

AGE GROUP	Frequency (n) (N=158)	Percentage (%)
18-30yrs	71	44.9
31-40yrs	59	37.3
41-50yrs	18	11.4
51-60yrs	10	6.3
RELIGION		
HINDU	137	86.7
MUSLIM	21	13.3
LOCATION		
URBAN	123	77.8
RURAL	35	22.2
MARITAL STATUS		
Married	56	35.4
Unmarried	76	48.1
Divorced or Separated	26	16.5
EDUCATION		
Illiterate	59	37.3
Primary school	56	35.4
Middle school	26	16.5
High school	9	5.7
Intermediate	6	3.8
Graduate or post graduate	2	1.3
Professional	0	0
OCCUPATION		
Unemployed	17	10.8
Unskilled worker	100	63.3
Semi skilled worker	31	19.6
Skilled worker	5	3.2
Clerical, shop owner, farmer	4	2.5
Semi professional	1	0.6
Professional	0	0
LIVING ARRANGEMENT		
JOINT FAMILY	24	15.2
NUCLEAR FAMILY	32	20.3
ALONE AT HOME	10	6.3
AT WORK PLACE	9	5.7
HOMELESS	83	52.5

TABLE 2 PORTION OF INCOME SPENT ON INJECTABLE DRUGS AND SYRINGES

Percentage of income spent on IDU	Frequency	Percentage	
≤25%	8	5.1	5.1%
26-50%	30	19	
51-75%	46	29.1	
76-100%	35	22.2	
101-150%	14	8.9	
151-200%	4	2.5	
>200%	4	2.5	
Borrowers *	17	10.8	
** who did not earn on their own and borrowed money from friends or family members*			

TABLE 3 SOCIO-ECONOMIC STATUS OF INJECTION DRUG USERS

SES	Frequency	Percent
Lower	13	8.2
Upper-lower	136	86.1
Lower-middle	8	5.1
Upper-middle	1	0.6

TABLE 4 DURATION OF INJECTION DRUG USE

DURATION (years of use)	FREQUENCY	PERCENTAGE
1-3 YEARS	49	31.01
4-6 YEARS	79	50
7-9 YEARS	20	12.6
10-12 YEARS	7	4.4
>12 YEARS	3	1.9
TOTAL	158	100

TABLE 5 PATTERN OF DRUG USED BY INJECTION DRUG USERS

DRUG USED	FREQUENCY	PERCENTAGE
BUPRENORPHINE+ DIAZEPAM+PHENIRAMINE	77	48.7
BUPRENORPHINE+ DIAZEPAM	18	11.4
BUPRENORPHINE+ PHENIRAMINE	30	19.0
BUPRENORPHINE	13	8.2
PENTAZOCINE	20	12.7
TOTAL	158	100

TABLE 6 FREQUENCY OF NEEDLE & PARAPHERNALIA SHARING (NUMBER OF TIMES IN 10 INJECTING EPISODES)

NUMBER OF TIMES IN 10 INJECTING EPISODES	FREQUENCY (n)	PERCENTAGE (%)
1	19	12
2	31	19.6
3	23	14.6
4	9	5.7
5	8	5.1
Not sharing	68	43
TOTAL	158	100

TABLE 7 RELATION OF AGE WITH SHARING OF NEEDLES, SYRINGES OR OTHER EQUIPMENTS

Age group (years)	Sharing of needle and paraphernalias*		Chi-square
	No	Yes	3.454
18-30	25	46	
31-40	30	29	df=3
41-50	8	10	p=0.327
51-60	5	5	

**equipment's sharing*

TABLE 8 SHARING OF NEEDLE WITH EDUCATION

		Education		Chi square	df	Asymptomatic significance
		Illiterate	Literate			
Sharing of needle and syringe	No	16	52	9.734	1	0.02*
	Yes	43	47			

**Significant at 0.05 level **Significant at 0.01 level*

TABLE 9 FREQUENCY OF SHARING NEEDLE WITH INCOME OF THE STUDY PARTICIPANTS

	Frequency of sharing in 10 injecting practices						Chi-square	df	Asymptomatic significance
Income	zero	one	two	three	four	five			
No income	6	0	4	4	3	0			
Upto 2000	11	6	11	11	5	5			
>2000-4000	31	8	14	8	1	3	38.46	15	0.001***
>4000	20	5	2	0	0	0			

**Significant at 0.05 level **Significant at 0.01 level ***Significant at 0.001 level*