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Original Article

Pattern of Injectable Substance Abuse among Injecting Drug Users: An Observational Study at An Opioid Substitution Therapy Centre in Kolkata

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ABSTRACT

Introduction: Injecting Drug Users (IDUs) are one of the high risk groups for HIV/AIDS. Unsafe injection practices among the IDUs have contributed significantly to the spread and persistence of global HIV epidemic. Opioid substitution therapy (OST) is a medical intervention program for opioid dependent IDUs. The present study was conducted on the IDUs attending an OST centre in Kolkata to explore distinctive socio-demographic characteristics and pattern of injectable psychoactive substances used by the IDUs attending the centre. **Materials and Methods:** A clinic-based observational, cross-sectional study was conducted on 167 IDUs attending the OST centre of a State Medical College in Kolkata. SPSS version 16 was employed for analysis of data. **Results:** The study revealed that nearly 98% of IDUs were males. A large proportion had history suggestive of lack of social support (46.7%) and financial support (47.9%) as well. Regarding financing for addiction, 28.1% were dependent on immoral means of financing. Buprenorphine was the most common opioid consumed by the IDUs before attending the OST centres while heroine used to be drug of choice when they first started injecting drugs. Phenergan topped the list among the non-opioids (22.7%) followed by diazepam (19.2%). Nearly 30% of the IDUs were engaged in

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injecting practice at least once in the past one month while on OST. **Conclusion:** The study provided useful information about the socio demographic profile and pattern of injecting substance use of patients attending OST centre of a State Medical College in Kolkata. The findings of the study might be of much help in designing appropriate strategies for the control and prevention of HIV/AIDS among IDUs.

Key Words: Injecting Drug Users, Opioid Substitution Therapy, Injecting psychoactive Substances

INTRODUCTION

Injecting drug users (IDUs) have emerged as an important high-risk groups (HRGs) with the potential of contracting and transmitting HIV infection in the society.[1] While the scenario may vary from country-to-country, HIV infection rate as high as 70% has been reported among IDUs in Asian and European countries.[2] In India, the prevalence of HIV varies widely among HRGs including IDUs and ranges from 3% to 70% in different regions as found in one systematic review.[3] It has been estimated that there are 177,000 IDUs in India.[4,5] As per the latest HIV sentinel surveillance report, the prevalence of HIV infection in India among IDUs stands at 7.2%, the highest among all HRGs.[5]

Considerable variation exists among IDUs in their choice of drugs for injection or abuse.[6] Although technically IDUs may elect to inject any psychoactive substance, several studies have demonstrated that in India, the majority prefer opioids as their primary substance of choice.[5] The opioids may be taken in combination with other injectable agents such as benzodiazepines or antihistamines.[5, 6]

The lives of IDUs revolve in the orbit of illicit use of opioids while other domains of life take a back seat. According to Spire B *et al*., opioid substitution therapy (OST) stabilizes the social situation of opioid dependent individuals. Oral substitution treatment plays an essential role in HIV prevention.[7] The core interventions for IDUs include - needle syringe program, OST, and anti-retroviral treatment.[5]

OST is essentially a medical intervention program for opioid dependence in a clinic setting. A medically prescribed long acting oral opioid is administered daily which eliminates the distress of withdrawal and subsequent craving for the illicit injectable opioid. In India, buprenorphine is the agent used for substitution.

To expand the OST program, Government Hospitals have also been included since 2010 in addition to the already existing NGOs. OST centre of the State Medical College and Hospital in Kolkata, where the present study was conducted, started functioning on 2nd April 2015. OST has been studied extensively in developed countries. However, relatively few studies are available in developing or less resourced countries.[8] This prompted us to conduct a study on IDUs attending the OST centre of the State Medical College and Hospital with the following objectives:

(i) To describe distinctive socio-demographic characteristics of the IDUs attending the OST centre
(ii) To explore the pattern of injecting psychoactive substances consumed by the IDUs.

MATERIALS AND METHODS

Study design and study setting

A clinic-based, descriptive, cross-sectional study was conducted among IDUs attending OST centre of the Calcutta National Medical College and Hospital. The centre, which runs daily on outdoor basis, is accredited to State Aids Control Society, West Bengal as a targeted intervention centre for IDUs. As per available records 198 IDUs attend the facility daily, as OST involves directly observed therapy.

Study participants and sampling Design

One of the investigators visited the OST centre on two prefixed days of the week. Based on inclusion and exclusion criteria, as stated below, 2 to 3 IDUs attending the centre were interviewed each day which typically lasted for 50 minutes to 1 hour for each IDU. Inclusion Criteria: 1) Clear mental state at the time of the interview, 2) Agreed to give informed written consent, 3) Aged more than 18 years.
Exclusion criteria: 1) IDUs in the induction phase of OST, 2) IDUs with severe cognitive deficit. A total of 167 IDUs were interviewed during the data collection period of one year.

Study period

The study was conducted from April 2016 to September 2017 of which data collection period was full one year (May 2016 to April 2017).

Study Procedure

The purpose of the study was explained to the study participants and informed consent was obtained. Face-to-face interviews were conducted by the investigator at the OST centre ensuring confidentiality. Predesigned and pretested structured schedule included information on socio-demographic characteristics and psychoactive substances used for injection.

Data Analysis

Statistical package for social sciences (SPSS) version 16 was employed for analysis of data.

Descriptive statistics were used to summarize the data.

Ethical Approval

Permission was obtained from the Ethics Committees of Calcutta National Medical College and Hospital and All India Institute of Hygiene & Public Health.

RESULTS

A total of 167 IDUs who fulfilled the inclusion criteria were approached. A large proportion of IDUs belong to the age category 30-39 years. As shown in Table 1, almost 98% of study

participants were males. Nearly 67% of the participants had low educational level, either illiterate or below middle level. Only 40% of the study participants were currently married.

Table 1: Distribution of study subjects according to their socio-demographic characteristics (N=167)

Characteristics	Categories	Number (%)
Age (in years)	19-29	41(24.6%)
	30-39	62 (37.1)
	40-49	48 (28.7%)
	50 and above	16 (9.6%)
Gender	Male	164 (98.2%)
	Female	3 (1.8)
Education	Illiterate	30 (17.9%)
	Below primary (Less than 4th Standard)	43 (25.7%)
	Primary	39 (23.4%)
	Middle and above	55 (33%)
Marital status	Unmarried	45(26.9%)
	Currently married	67 (40.1%)
	Separated/Divorced	46 (27.6%)
	Widower/ Widow	9 (5.4%)
Living arrangement	Home	97 (58.1%)
	Unstable housing*	70 (41.9%)
Social support**	Present	89(53.3%)
	Absent	78 (46.7%)
Financial support#	Present	87 (52.1%)
	Absent	80 (47.9%)
Finance for addiction	Own legal earning/ other noncriminal sources	120 (71.9%)
	Illegal/Immoral means	47(28.1%)
Main source of income	Regular Job	108 (64.7%)

during the previous 6 months	Temporary Work or other sources	59 (35.3%)

** Unstable Housing (i.e., living in a workplace, car or other vehicle, abandoned building,*
shelter or welfare residence, jail, medical care organization, or on the street).
** Social support: One question asked-*"When you need advice on personal matters, is there anyone who will listen to you?"*
#Financial support: One question asked-*"When you want to borrow 1000 INR or something valuable, is there anyone who will lend or give it to you?"*

Out of 167 study participants, 78 (46.7%) gave history suggestive of lack of social support while 47.9% of them had no financial support. As far as financing for addiction was concerned, 47(28.1%) out of 167 were dependent on immoral means of financing. Fifty nine (35.3%) out of 167 study participants had no regular job but were engaged in temporary work or other sources when their main source of income during the previous 6 months was considered.

Table 2: Distribution of study subjects according to the injectable substances used by them in preceding one year before attending the OST centre (N=167)

	Substances used*	Number (%)
Opioids*	Impure Heroin (Smack)	2 (1.2%)
	Pure Heroine	26 (15.6%)
	Buprenorphine (Lupigesic)	149 (89.2%)
	Dextropropoxyphene	3 (1.8%)
	Fortwin (Pentazocine)	5 (3%)
Non-opioids*		
Antihistaminics	Phenergan (Promethazine)	38 (22.7%)
	Avil (Chlorpheniramine)	8 (4.8%)
Benzodiazepines	Diazepam	32 (19.2%)
	Midazolam	1 (0.6%)

**Multiple responses*

Psychoactive substances used by the IDUs through injecting route, varied considerably from person to person (Table - 2). Most of them had the habit of taking multiple drugs. The study revealed that buprenorphine was the most commonly used substance (89.2%) of all the injectable substances in the preceding one year before attending the OST centre. Next opioid of choice was pure heroin, as nearly 15.6% of the study subject consumed it. Among the non-opioids, phenergan (22.7%) topped the list followed by diazepam (19.2%).

Table 3: Distribution of study subjects according to injectable opioids used in their lifetime (N=167)

Injectable Opioids	Opioids used during initiation of injecting habit	Opioids used before attending OST centre

Impure Heroin(Smack)	31(18.6%)	1(0.6%)
Pure Heroine	79(47.3%)	17(10.2%)
Buprenorphine	45(26.9%)	145 (86.8%)
Dextropropoxyphene	8 (4.8%)	2 (1.2%)
Fortwin	4 (2.4%)	2 (1.2%)
Total	167 (100%)	167 (100%)

Table 3 shows that seventy nine (79) out of 167 IDUs were addicted to injectable pure heroin when they became an IDU. Buprenorphine was the second choice as initial injectable opioid and 26.9% of IDUs had consumed them. While injectable buprenorphine was used by 145 IDUs when they entered the OST programme, pure heroin was used by 17 out of 167 IDUs.

Table 4:
Distribution of study subjects according to injection-related risky behaviour (N= 167)

Injection-related risky behaviour*	In the preceding one year before attending OST centre	Ever (At least once in their lifetime)
Sharing Needle-Syringe#	32 (19.2%)	63 (37.7%)
Sharing paraphernalia (Cookers, cotton or water)	40 (23.9%)	83 (49.7%)

*Multiple responses
Sharing means receptive sharing

Table - 4 shows the number of persons who were engaged in injection related risky behaviour that are likely to increase their risk for HIV infection.

Table 5: Distribution of study subjects according to their injecting behaviour while on OST in preceding one month (N=167)

Frequency of injection	Number (%)	Sharing injecting equipments
Never	116 (69.5%)	Never
Once	25 (14.9%)	Never
More than once	22 (13.2%)	Never
Once in every week or more	4 (2.4)	Never

Table - 5 shows that nearly seventy percent of the study participants never injected while on OST in the past one month, nearly 30% IDU were engaged in injecting practice at least once in past one month. None of the IDUs had shared injecting equipments while taking psychoactive substances.

DISCUSSION

In our study, nearly 98% of the study participants were males. Nearly, 67% of the participants had low educational level, either illiterate or below middle level. Only 40% of the study participants were currently married. Out of 167 study participants 78 (46.7%) gave history suggestive of lack of social support while 47.9% of them had no financial support. As far as financing for addiction was concerned, 47(28.1%) were dependent on immoral means of financing.

The study showed buprenorphine was the most commonly used substance of all the injectable substances. Nearly, 89.2% of IDUs had used buprenorphine. Next opioid of choice was pure heroin, as nearly 15.6% of the study participant consumed it.

It was obvious that many were in the habit of taking multiple drugs. Among the non-opioids, phenergan (22.7%) topped the list followed by diazepam (19.2%).

In our study, the male IDUs (98%) clearly outnumbered the females. A study conducted on IDUs in Bangladesh by Shariful Islam *et al*. showed that 9.2% of them were females.[9] A longitudinal study conducted in Chennai, India by Solomon *et al*. revealed that only 3 out of 1158 IDUs were females.[10] All the studies including our own distinctly points to the fact that females were much less encountered in the OST centre.

In the current study, 26.9% were unmarried and 27.6% were separated or divorced. Study conducted by Armstrong *et al.* revealed that 47.3% and 44.8% were single among the IDUs in Manipur and Nagaland respectively.[11] In this study separated or divorced IDUs were found to be 3.6% and 3.2% respectively.[11]

In our study, 17.9% percent IDUs were illiterate whereas only 33% of the study participants studied up to middle level and above. Razzaghi *et al.* in his study in Tehran showed that out of the 154 IDUs who had participated in the study 18.7% were either illiterate or were barely able to read and write while only 10.7% had graduated from high school or had higher education.[12]

Regarding financing for addiction, 47(28.1%) out of 167 were dependent on immoral means while rest were dependent on their own legal earning or other noncriminal sources of finance for addiction. Immoral means included theft, pick-pocketing, drug peddling, stealing and so on and so forth. As many as 59 (35.3%) of the study participants had no regular job but were engaged in temporary work or other sources when their main source of income during the previous 6 months was considered.

A facility based study was conducted in Netherlands by Havinga P *et al* among 202 problematic hard-drug users. Participants were categorized into NIDU (Never Injected Drugs), FIDU (Former Drug Users- had injected but not in past 6 months) and IDU (current injecter-injected in past 6 months). The study revealed that homelessness or unstable housing was related to injecting drug use (FIDU), whereas stable housing was related to never using drug use (NIDU). The study also showed that IDUs were more likely to generate income from illegal activities such as drug dealing, crime against property or begging. These findings were consistent with those of our study.[13]

Solomon SS *et al* in a longitudinal study among 1158 IDUs (predominantly males) in Chennai studied their living arrangements. According to their study almost all IDUs (99%)

reported spending at least one night sleeping at home in the preceding 6 months. They also found that 35% had spent at least one night sleeping on the street and 13% spent at least one night in jail/prison in the last 6 months.[10]

In our study, buprenorphine was the most commonly used substance of all the injectable substances. Nearly 89.2% of IDUs had used buprenorphine. Next opioid of choice was pure heroin, as nearly 15.5% of the study subject consumed it. It was obvious that many were in the habit of taking multiple drugs. Among the non-opioids, phenergan topped the list followed by diazepam. A study conducted by Armstrong *et al*. showed that most IDUs in Manipur reported using heroin (90.7%) whilst in Nagaland approximately equal proportion reported using heroin and spasmoproxyvon (63.1% and 68.3%, respectively).[11] In states such as Karnataka, Andhra Pradesh and Chhattisgarh pentazocine was the commonly injected opioid.[5] Therefore it is obvious that primary opioid which the IDUs elect to inject vary from place to place.

Solomon SS *et al* found that heroin was the commonest injectable substance among IDUs. However, the study also revealed that buprenorphine injection was more common among the recent IDUs which is consistent with previous data suggesting that buprenorphine was introduced in India later than heroin (Kumar, 2000). These findings were in line with those of our study.[10]

In mid 2006 a cross-sectional survey among 200 injecting drug users (IDUs) was undertaken by Kermode M *et al* in Imphal, Manipur and Dimapur, Nagaland. The drugs most commonly injected were Spasmo-proxyvon (65.5%) and heroin (30.5%).[14]

Out of 167 IDUs, 32 (19.2%) shared needle and syringe at least once in past 1 year (Table 4) while 40 (23.9%) IDUs shared paraphernalia. Out of 167 IDUs 63 (37.7%) had history suggestive of receptive sharing at least once in their life time whereas 49.7% shared paraphernalia.

While nearly seventy percent of the study participants never injected when on OST in the past one month, nearly 30% IDU were engaged in injecting practice at least once in past one month. Twenty five (25) IDUs out of 167 had injected once in the past 1 month when on OST while four (4) IDUs had taken once in every week or more. None of the IDUs had shared injecting equipments while taking psychoactive substances which might be considered as an achievement.

Yan Yao ***et al*** in their study among male IDUs in Yunnan, China found that 37% reported multiple sexual partners. History of needle sharing was reported in 62.1% of IDUs with only one partner and 83.5% (96/115) of IDUs with multiple partners.[15]

A cross sectional study conducted by Shariful Islam SM *et al* among IDUs in Dhaka, Bangladesh revealed that 73.3% of participants shared needles sometimes and 57.5% were willing to use the needle exchange programs.[9]

LIMITATION AND STRENGTHS OF THE STUDY

Limitations of the study

Socio-economic and employment factors found in IDUs of this study make it difficult to generalize the findings to the IDU population of the country at large. Information relied largely on the participants' self-reporting who might underreport about their injecting habits of illicit opioids while on OST program and over-report about the socio-occupational improvements. Because of social desirability, some answers might have been biased and not accurate particularly on the sensitive questions like injecting behaviour. Another limitation was small sample size. Therefore it may be said that the study may have suffered from social desirability bias, recall bias and lack of generalizability in addition to small sample size.

Strengths

To the best of our knowledge, this is the first study to report on the IDUs attending the OST Centre of a State Medical College of Kolkata. It has brought out the salient socio-demographic characteristics and pattern of substance abuse in a marginalized population.

CONCLUSION

The study provided insights into OST patients' socio demographic profile as well as the pattern of injecting substance use. The findings of the study may be utilized in designing appropriate strategies for the control and prevention of HIV/AIDS among IDUs.

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