E-ISSN 2250-0944
ISSN 2250-1150
doi: 10.48047/ijprt/15.02.53

IRREGULAR & LOSS OF FOLLOWUP AMONG IDU'S ATTENDING AT OST CENTER KOTA, RAJASTHAN: A CROSS SECTIONAL STUDY

Dr. Saurabh Sharma Associate Professor, Department of Microbiology , Govt. Medical College, Kota

Dr. Ashutosh Sharma-Professor, Department of Community Medicine, Govt. Medical College, Kota

Dr. Anita Sharma-Assistant professor, Department of Microbiology, Govt. Medical College, Kota

Dr. Manaswini Rathore- P G resident, Department of Microbiology, Govt. Medical College, Kota

* Corresponding author- Dr. Manaswini Rathore- P G resident, Department of Microbiology, Govt. Medical College, Kota

ABSTRACT

Background: Opioid Substitution Therapy (OST) is a proven intervention for opioid dependence and HIV prevention among Injecting Drug Users (IDUs). However, irregular follow-up and treatment dropout are significant challenges, especially in OST centers like Kota, Rajasthan.

Objectives: This study aimed to identify reasons behind irregular attendance and loss to follow-up (LFU) among IDUs at the OST Centre, Kota. It also sought to examine socio-demographic, behavioural, and cognitive factors affecting adherence.Methods: A cross-sectional study was conducted from April 2018 to March 2022 involving 287 IDUs enrolled in the OST program. Participants were assessed using a pre-structured questionnaire. Data were analysed using SPSS 20 with chi-square tests for categorical variables ($p < 0.05$ considered significant).

Results: Among the 287 participants,99.65% were male,with a mean age of 38 years and a mean duration of substance use of 6.6 years.The most common reasons for irregular follow-up and LFU were patient migration(92 cases) and OST center timing conflicts(82 cases).Most patients(94%) had used additional substances in the past year.Major comorbidities included TB(14.28%) and HIV(19.16%).Socio- demographic factors such as unemployment, illiteracy, lower socioeconomic status, and poor family support were significantly associated with poor adherence($p < 0.0001$). Cognitive impairment and interpersonal complications also influenced adherence levels.

Conclusion: Migration,Cognitive decline, socio-demographic challenges, and logistical issues significantly impact OST adherence. Enhancing patient understanding, supporting behavioural change, and addressing systemic barriers are essential for improving retention in OST programs.

Keywords:
Opioid Substitution Therapy (OST), Injecting Drug Users (IDUs), Loss to Follow-Up (LFU), Treatment Adherence, Substance Use, HIV Prevention, Cognitive Impairment, Socio-demographic Factors

INTRODUCTION

Opioid Substitution Therapy (OST) is an evidence-based, long-term treatment strategy for managing opioid dependence, while also serving as a key intervention to reduce HIV transmission among injecting drug users (IDUs) [1]. In India, approximately 177,000 individuals are estimated to engage in injecting drug use, although this population is unevenly distributed across the country. Higher concentrations are reported in specific states, notably Manipur, Nagaland, Punjab, Mizoram, and Delhi [2,3].

IDU continues to play a significant role in the spread of HIV in India, where the epidemic is geographically and demographically concentrated. Populations designated as High Risk Groups (HRGs), including IDUs, show markedly higher HIV prevalence compared to the general public [4,5]. Data from HIV sentinel surveillance indicate a national HIV prevalence of 7.2% among IDUs—one of the highest among all population groups. However, some states report even greater figures, such as 21% in Punjab, 18% in Delhi, and around 12% in both Manipur and Mizoram [6,7].

Despite the structured and closely monitored nature of OST programs, challenges such as poor retention, high dropout rates, and irregular treatment adherence are consistently observed [8]. The effectiveness of OST is shaped by multiple elements, including appropriate patient selection, adequate dosage, and treatment continuity [1]. Additionally, patient-level factors (such as cognition, comorbidities, and perception of illness), provider behavior, systemic infrastructure, and logistical issues like clinic operating hours and support service availability, all contribute to adherence outcomes [9,10].

AIMS & OBJECTIVES

- To understand the reason of irregular and loss of follow up.
- To identify the factors that demotivate risk group for irregular and loss of follow-up.
- Analysis of demographic and risk behavioural aspect, socio-demographic characteristics. History of non –injection drug and alcohol use, smoking history,history of drug injection, history of de-addiction services, sexual risk behaviours, access of prevention programs and use of preventive services, level of awareness of HIV transmission and prevention, HIV status.

MATERIAL AND METHOD

The cross-sectional study was conducted in the OST Centre, Kota, Rajasthan, in April 2018 to march 2022. Data of patient coming to OST centre since last 4 year was collected. After approval from Ethics committee of the institution, all patients taking OST were enrolled in this study.

This study recruited about 350 patients taking OST. Then, gradually 39 patients shifted

to other OST centre, five were in prison, 19 died and eight were never followed up after first consultation. Therefore, finally we had 287 patients left for the study OST during the study period.

The counsellor of OST program identified the subjects based on inclusion and exclusion criteria. They were referred to doctors for assessment of cognition, Comorbid medical complications, social and financial impact of opioid addiction and relation of cognition with OST drug adherence in patients with opioid dependence.

Inclusion Criteria

- Irregular and LFU'S, IDUS aged more than 15 years.
- Who were initiated on OST between 1st April 2018 to 31 March 2022.
- Who gave consent and willing to be part of the study.

Exclusion Criteria

- Age group less than 15 years and not injecting drugs.
- Who have not given their consent.
- Patients of schizophrenia, other psychotic disorders and bipolar mood disorder and who were on psychotropic medications.

A separate room was allotted for interviewing the subjects individually and in total privacy. Participant information sheet was given and informed consent was taken in their own language from all participants.

Doctors who conducted this study administered a pre-structured questionnaire (based on literature search and expert consensus) having open ended questions which investigates information about opioid and other substance use with related complications and assessed various domains like methods of abuse, drop out times from OST, cognition, medical co morbidities, social and financial impact of opioid addiction etc.

QUALITATIVE ASPECT

A focused group discussion was conducted at the OST center, bringing together the all stake holders MOIC, counsellors, and patients undergoing treatment who were regular. This collaborative session aimed to delve into the various factors influencing patient adherence to the therapy. Throughout the discussion, participants shared their personal experiences, insights, and challenges encountered during treatment journeys. The moic provided a clinical perspective on the physiological and psychological aspects of addiction and treatment adherence, while the counsellor offered insights into the emotional and social dimensions that

impact patient behaviour.Patients candidly discussed their struggles, including social stigma, financial constraints, side effects of the medication, and lack of support systems.

STATISTICAL ANALYSIS

Data, collected from pre-structured questionnaires, were used and analysed by chi-square test (for categorical variables) by using SPSS 20 version to make comparisons of characteristics between patients. The $P < 0.05$ was considered as statistically significant.

RESULTS

TABLE 1

GENERAL DISCRIPTION OF SAMPLES

S.N.	Variables		Numbers	%
1	Duration of substance	0-2 year	23	8.01
		2-4 years	35	12.20
		6-8 years	97	33.80

	used	8-10 years	132	45.99
	Average duration	6.62±2.50		
2	Other substance used in last one year	Yes	270	94.07
		No	17	5.92
3	Duration of OST taken in last one year	-	120 days	-
4	Comorbid illness	Hepatitis B	10	3.48
		Hepatitis C	13	4.52
		TB& HIV	41 & 55	14.28 & 19.16

Out of total 287 patients, 286 (99.65%) were males and only 1 (0.35%) was female with average age of about 38 years and average duration of substance use was six year. Due to patients undergoing trial in court for legal issues, or dropping out and injecting opioids again, the days on OST decreased. 270 (94.07%) patients used other substance in last one year. Duration of OST taken in last one year was 120 days. A total of 119 out of 287 patients had comorbid illness, in which 10 had hepatitis B and 13 patients were infected with hepatitis C, 41 & 55 were suffered from TB & HIV respectively. [Table1].

TABLE 2
ASSOCIATION BETWEEN SOCIODEMOGRAPHIC FACTORS AND OST DRUG ADHERENCE

Sociodemographic factors	Adherence		Total	P value
	Irregular	LFU		
Sex				
Male	-	-	286	< 0.0001*

Female	-	-	1	
Age group				
20-30	-	-	55	< 0.0001*
31-40	-	-	100	
41-50	-	-	132	
Average age	37.93±8.03			
Occupation				
Unemployed	84	37	121	< 0.0001*
Unskilled	29	11	40	
Semiskilled	30	62	92	
Skilled	22	05	27	
Professional	07	00	7	
Education				
Illiterate	43	101	144	< 0.0001*
Primary	84	37	121	
Secondary & above	18	04	22	
Living arrangement				
Nuclear	69	52	121	0.004*
Joint	81	60	141	
Homeless	5	18	23	
At work place	00	02	2	
Marital status				
Married	96	27	123	< 0.0001*
Unmarried	40	75	115	
Separated	15	34	49	
Socioeconomic status				
Upper middle	21	06	27	0.0001*
Lower middle	52	78	130	
Lower	43	87	130	

Table 2 shows that OST adherence was significantly associated with sociodemographic factors. Irregular and LFU patients were more likely to be male, aged 41–50, unemployed, illiterate, from lower socioeconomic status, living in joint families, and separated or unmarried.

All associations were statistically significant ($p < 0.05$).

TABLE 3
REASONS FOR LFU AND IRREGULAR ADHERENCE

S. N.	Reasons	Number of patients
1	Death(only LFU)	44
2	Imprisonment	Common reason
3	Police custody	Common reason
4	Transfer to other OST centre	01
5	Migration	92
6	Marital disharmony	23
7	Timings of OST centre clashes with one`s working time	82
8	No family support	15
9	Mentation impaired so can't come to centre by themselves	04
10	Lack of transportation	26

Table 3 shows the most common reason for LFU and irregular adherence was migration of patients to other centres and city followed by the timing of OST centre clashes with their working timings.

DISCUSSION

This study highlights the multifactorial nature of irregular follow-up and loss to follow-up (LFU) among IDUs enrolled in OST programs. Despite the structured framework of OST services, challenges such as cognitive decline, socio-demographic vulnerabilities, and systemic barriers continue to hinder consistent treatment adherence.

Our findings resonate with previous research by Koukouli et al(11), which emphasized the significance of social support systems—particularly marital status, living arrangements, and household composition—in influencing functional health outcomes. Similarly, in our study, factors such as marital instability, lack of family support, and homelessness were significantly associated with poor OST adherence.
Cognitive decline among IDUs in our cohort was not significantly attributed to comorbid conditions like Hepatitis C or HIV alone. This aligns with the findings of Gupta et al(12), who observed no neurocognitive impairment among HCV-infected IDUs undergoing methadone treatment. However, in our population, cognitive symptoms like memory loss, impaired attention, and difficulty in decision-making were common among patients with longer substance use history and those with medical comorbidities—factors that likely contributed to non- adherence.

Interpersonal issues also played a crucial role. Previous studies, such as those by Delamater et al(16), have shown that supportive family dynamics—marked by low conflict, high cohesion, and clear communication—are associated with better treatment outcomes in chronic illnesses. Our study similarly found that poor family relationships, lack of support, and marital disharmony were major deterrents to consistent OST participation.

Qualitatively, it became evident that the risk factors for non-adherence to opioid substitution therapy highlighted by the group were relapse and drug use, limited access to healthcare resources, inadequate patient education about the therapy, emotional and mental health issues, and external pressures such as family dynamics and employment challenges. The alignment between the group's insights and study findings underscores the importance of addressing these multifaceted issues through a comprehensive and empathetic approach to enhance patient adherence and improve treatment outcomes.
Furthermore, structural and logistical challenges such as mismatch between clinic hours and patients' work schedules, migration, and lack of transportation access emerged as prominent reasons for LFU. These findings underscore the need for more flexible, patient-centric OST service delivery models.

IMPLICATIONS AND RECOMMENDATIONS FOR THE PROGRAM

A. Improvement in adherence to treatment by giving incentives to patients receiving OST.

B. Arrangement of OST for patients in police custody.
C. Increase in number of OST centres for ease of patients living away from centre .
D. OST awareness campaigns for high-risk groups.
E. Recognition of achievements.
F. Peer mentorship programmes.
G. Community based interventions.
H. By expanding on these strategies , HIV/AIDS programs can create a multifaceted approach that leverages reinforcement to promote adherence to OST , improve quality of life and ultimately reducing the spread of HIV.

ACKNOWLEDGMENT : This study was conceptualized and technically supported by Rajasthan state AIDS Control Society. We are thankful to NACO and RSACS: Dr. Sushil Kumar Parmar - Project Director; Dr. Rambabu Jaiswal - Additional Project Director; Dr. Shefaly Chaudhury- Dy. Director (CST) Mr. Prakash Narwani - Assistant Director(SI);for extending all the support and guidance to the research study. We also acknowledge the efforts of Dr Shailendra Vashistha, Assistant Professor, Department of Transfusion Medicine, GMC Kota for his valuable suggestions in journal selection, and contribution in manuscript submission process.

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