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A hospital based study of socio-demographic profile, pattern of substance abuse and criminality in patients of Opioid Use Disorder.

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Abstract:

Context: Substance abuse and dependence has become a public health crisis not only in developed countries but also in developing countries. Its demand is increasing alarmingly in younger generation due to various socio-economical reasons. Substance abuse has also been found to be associated with violent behaviour and infections like Human Immunodeficiency Virus and Hepatitis B and Hepatitis C virus. **Objective:** The aims of this study were to find out the socio-demographic profile, pattern of substance abuse and criminality in Opioid Use Disorder patients. **Subjects and Methods:** 106 diagnosed patients of Opioid Use Disorder registered at the Opioid Substitution Therapy Centre, Department of Psychiatry, Swaroop Rani Nehru Hospital, associated with Moti Lal Nehru Medical College, Prayagraj, were included. All patients were interviewed according to a semi-structured questionnaire prepared for the purpose of collection of information regarding pattern of Opioid abuse. **Results:** In the study population, out of 106 cases, majority of the cases were married, skilled worker, illiterate. Most common route of administration was combinational route (Intravenous and Inhalational). Cannabis was found to be the most common substance used prior to initiation of Opioid abuse. 20-29 years age group was found to be the most vulnerable age group for initiation of Opioid abuse and commission of crime. **Conclusions:** Initiation of substance abuse is found during younger age. 3rd decade of life is found to be the most vulnerable age group for initiation and commission of crime and so accordingly, people of this age group need better familial and social support.

Introduction: Consumption of different substances of abuse has been in existence all around the world since the early civilization. According to the **UNODC World Drug Report 2021,** around 275 million people used drugs worldwide during 2020, while over 36 million people suffered from drug use disorders. Between year 2010-2019, the number of people using drugs has increased by 22 per cent and Opioid use continue to account for the largest burden of infectious disease like Human Immunodeficiency virus, Hepatitis B and Hepatitis C, attributed to intravenous drug use.

Usually, adolescence is the critical phase of life when the first initiation of substance

abuse takes place. Among the adolescents, students are particularly susceptible to such substance abuse due to various reasons like temptation by peer groups, the lure of popularity and identification, academic pressure and easy availability of many such substances.

Violent behaviour can occur during the various phases of substance use, such as acute intoxication, withdrawal, or substance-induced psychosis. Furthermore, violence may occur both in individuals who do and in those who do not suffer from a substance use disorder.[1]

Material and Methods: The aims of this study were to find out the socio-demographic profile, pattern of substance abuse and criminality in patients with Opioid Use Disorder.

The present study has been conducted by the Department of Forensic Medicine and Toxicology, Moti Lal Nehru Medical College, Prayagraj and carried out on the patients of Opioid Use Disorder registered at Opioid Substitution Therapy Centre, Department of Psychiatry, Swaroop Rani Nehru Hospital, Moti Lal Nehru Medical College, Prayagraj.

This study was approved by Institutional Ethics Committee (Ethics Committee Registration No. ECR/922/inst/UP/2017 issued under Rule 122DD/of the Drugs & Cosmetics Rule 1945), M.L.N. Medical College, Prayagraj. Written informed consents were obtained from adult research participants. The study was conducted in accordance to the World Medical Association Declaration of Helsinki on Ethical Principles for Medical Research Involving Humans. The duration of the study was 12 months. It was a descriptive cross-sectional study.

Inclusion criteria had all patients of Opioid Use Disorder arrived at Opioid Substitution Therapy Centre for initiation or follow-up of Pharmacotherapy.

Exclusion criteria were those not willing to be included in the study, unable to provide relevant information or patients having other unrelated psychiatry disorders like Schizophrenia, Bipolar Affective Disorder, Obsessive Compulsive Disorder and Dementia.

Results: Total 106 cases (102 males and 4 females) of Opioid Use Disorder were taken. Out of the 106 cases, 48 cases had history of criminal behaviour.

Table-I emphasizes on the marital status of the cases of Opioid Use Disorder. Out of total 106 cases, 70 (66.04%) are married and 36 (33.96%) unmarried. Out of 70 married cases, 59 cases are living

with their partners, while 11 cases are either divorced/separated or widower/widow. Interestingly more than half (19 out of 36) of the unmarried cases are found associated with criminal behaviour. This proportion is lesser in married cases (29 out of 70).

Table-II indicates the occupational status of the cases. It is observed that 55 (51.89%) are Skilled Workers followed by Unskilled Workers 29 (27.35%), Unemployed 20 (18.87%) and Professionals 2 (1.89%). Amongst all, greatest proportion of criminal history is found associated with groups of Unemployed and Unskilled workers. Skilled workers have lesser tendency, while no criminal tendency is observed in the Professionals.

Table III illustrates the educational status of the cases. Majority of the cases are Illiterate 32 (30.19%) followed by those who received education up to Primary level 31 (29.25%).It is followed by the cases with educational level of High School 21 (19.81%), Intermediate 12 (11.35%) and at last Graduate 10 (9.43%). The above table clearly reveals the fact that education had negative impact on criminal tendencies amongst observed cases. Proportion of criminal association is found much higher in Illiterate and Primary level educated cases in comparison with the cases that had Higher educational level.

Fig. I shows that, out of 106 cases, 2 (1.88%) cases used only the IV route, while rest of the 104 (98.11%) cases used to consume Opioid through both routes i.e. Inhalational and Intravenous. Out of these 106 cases, 19 (17.92%) cases were HIV positive, while 2 (1.89%) cases were Hepatitis B positive.

Fig. II shows the history of other substances abused prior to the Opioid use. Most common substance used prior to Opioid addiction is found to be Cannabis in 58 cases, out of which, half of the cases (29 cases) have shown criminal history. Previous addiction of alcohol is found in 22 cases, having 6 cases with criminal history. Similarly, 9 cases of tobacco addiction have shown criminal history in 5 while 3 cases of Alprazolam addiction have criminal history in only 1 case. Surprisingly, out of those 33 cases who started consuming Opioid directly, without any prior substance use have criminal history in 15 cases.

Fig. III depicts the history of substance abuse amongst the family members of the study population.

In majority of families of the cases, members are found with no history of addiction of substances i.e. 55 (51.89%). In 25 (23.59%) cases, one or more family member found addicted to multiple types of substances at a time. Where a single substance is consumed by the family members, it is alcohol in 11 (10.38%) cases and Cannabis in only 1 (0.94%) case. Surprisingly, family members of only 6 (5.66%) cases have shown history of Opioid consumption by any of its member.

Fig. IV depicts duration of Pharmacotherapy and its relation with criminal behaviour by correlating the age at initiation of pharmacotherapy with the age when the crime was committed by the cases. This table shows that out of 48 cases with criminal history, 34 (70.83%) cases committed crime before getting pharmacotherapy, 8 (16.67%) cases committed crime after getting pharmacotherapy while 6 (12.50%) cases committed crime both before and during pharmacotherapy.

Please refer to Table and Charts at the end of this manuscript.

Discussion

In the present study, out of 106 cases of Opioid Use Disorder, 102 subjects were male and 4 subjects were female.

Distribution on the basis of their Marital Status: - Out of total 106 cases, 66.04% cases were married and 33.96% were unmarried. Interestingly more than half (19 out of 36) of the unmarried cases were associated with criminal behaviour. This proportion was lesser observed in the married cases (29 out of 70). Other studies which found majority of the cases to be married were **Mohanty R et al., (2018)**[2] with 57.5% married cases, **Jumade PP, Kasbe AM, Giri PA (2016)**[3] with 59% married cases, **Kumar N et al., (2013)**[4] with 74.7% married cases while **Baba TA et al., (2013)**[5] found 97.6% unmarried cases their study.

Distribution on the basis of their Occupational Status: - Amongst 106 cases, 51.89% were Skilled and 27.35% were Unskilled Workers. Similar to our results, studies conducted in relatively developed parts of India revealed that larger proportion of Opioid abusers were Unemployed or labourer as observed in a study conducted in Kota[6] with 32% cases, in Mangalore[2] with 48.2% cases. However, study conducted in Kashmir[7] and in Manipur[2] reported Professional class as the major group involved with 37.84% and 62.5% cases respectively. In this study, greatest proportion of criminal history was found associated with groups of Unemployed and Unskilled workers. Skilled workers had lesser

tendency, while no criminal tendency was observed in the Professionals.

Distribution on the basis of their Educational Status: - In this study, majority of the cases were Illiterate (30.19%) followed by those who received Primary level education (29.25%). Our findings that lower education level is more associated with Opioid use have also been reported by studies conducted in Kota[6] in which 60% of cases of Opioid abuse received primary to middle level education. Our results differ from a study conducted in Manipur[2] in which 42.5% cases received Higher secondary education, in Mumbai[3] in which 53% of cases received secondary education and in Mangalore[4] where 39.8% of the cases were graduated. The present study also shows that the proportion of criminal association was found much higher in Illiterate and Primary level educated cases in comparison with those cases who received Higher level education.

Route of administration of Opioid: - There are multiple types of routes for consumption of Opioid in which commonly used routes are Inhalational, Chasing the dragon, Intravenous, Snorting and Oral. In this study, out of 106 cases, 1.88% cases used only the IV route, while rest all of the 98.11% cases consumed Opioid through both, Inhalational and Intravenous routes. Out of these 106 cases, 17.92% cases were HIV positive, while 1.89% were Hepatitis B positive. Multiple routes in combination were commonly observed for consumption of Opioid in studies by **Farhat S et al., (2015)[8]** and **Mohanty R et al., (2018)[2]** while **Bhat BA, Dar SA, Hussain A (2018)[7]** found that the most common route of Opioid consumption was Inhalational followed by Oral and Intravenous route.

Prior substance abused before initiating with Opioid: - Out of total 106 cases, most common substance used prior to Opioid addiction was found to be Cannabis in 58 cases, followed by Alcohol with 22 cases while 33 cases started consuming Opioid directly without any prior substance use. Many studies found history of other substances like Cannabis, alcohol, tobacco, etc. getting consumed by the case before initiating with Opioid, such as **Bhat BA, Dar SA, Hussain A (2018)[7], M.-F. Poirier et al., (2004)[9]** and **S. E. Back et al., (2011)[10].**

History of substance abuse amongst the family members of the cases: - About 51.89% cases were devoid of any drug history in family members in this study and only 23.59% cases shown one or more family member

addicted to multiple types of substances at a time. Alcohol was consumed by family members in 10.38% cases while Cannabis in only 0.94% cases while only 5.66% cases had history of Opioid consumption by any of its family member. According to few studies, the impact of substance abuse by one member of the family was found to effect the other members as well, such as in study conducted by **R.W. Pickens et al., (2001)**[11] in which it was reported that the findings suggest substance abuse problems in parents may influence severity of opiate dependence in offspring, with the effect being nonspecific across alcohol (parent) and cocaine (offspring). Cases with positive family history of substance abuse were found more in studies conducted by **Kumar N et al., (2013)**[4] with 63% cases and **Gupta S et al., (2013)**[12] with 57.4% cases while contradictory results were found in studies conducted by **Kadri AM et al., (2003)**[13] with 26.1% cases and **Aggarwal et al., (2015)**[6] with 44% cases.

Criminal behaviour during Pharmacotherapy: - In the present study, out of those 48 cases with criminal behaviour, 14 cases committed crime after initiation of the Pharmacotherapy. Although it is impractical to interpret from such small sample size, yet it is evident that there was decrease in commission of crime after initiation of pharmacotherapy. Opioid Substitution Therapy has been shown to be beneficial for the patients of Opioid Use Disorders and decreasing the Opioid addiction gradually over time in many of the studies, such as **Armstrong et al., (2010)**[14], **Selahattin Bolek et al.,(2016)**[15]. In the study conducted by **Grall-Bronnec et al., (2019)**[16], it is reported that the main condition explaining the unsuccessful OUDT was not the persistence of Opioid use, but the worsening of other substance use.

Most commonly used route for administration of Opioid in these cases were found to be intravenous and inhalational routes in combination. Amongst subjects, HIV infection was most prevalent, followed by Hepatitis B infection, indicating sharing of infected needles amongst groups.

Conclusion

The present study was conducted on 106 patients of Opioid Use Disorder including 102 male and 4 female patients. Incidences of married cases were more. Majority of the cases were Unskilled worker or unemployed and were either illiterate or had received education up to Primary level.

Most common substance abused by the cases before initiating Opioid abuse was found to be Cannabis while decent proportion of individuals began directly with Opioid. 48.11% cases had history of substance abuse amongst family members.

Many factors can be said to be responsible for such exposure to substance abuse and vulnerability such as childhood trauma, history of substance abuse amongst family members, social and cultural effects along with the will power of the individual.

It is a multi-factorial phenomenon and needs to be dealt with all together. Role of the family members, educational institutes, Government organizations and Law enforcing bodies are important in moulding an individual for not getting involved in these illicit activities.

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Tables and Figures: IJMJ-2023-112

Table 1: Distribution of Cases on the basis of their Marital Status (106)

Marital Status	Male		Female		Total	
	No. of cases	With Criminal history	No. of cases	With Criminal history	No. of cases	With Criminal history
Unmarried	35 (33.02%)	19 (17.92%)	1 (0.94%)	0 (0%)	36 (33.96%)	19 (17.92%)
Married	67 (63.21%)	27 (25.47%)	3 (2.83%)	2 (1.89%)	70 (66.04%)	29 (27.36%)
Living Together	57	22	2	2	59	24
Divorced/ Separated/ Widower or Widow	10	5	1	0	11	5
Total	**102 (96.23%)**	**46 (43.39%)**	**4 (3.77%)**	**2 (1.89%)**	**106 (100%)**	**48 (45.28%)**

Table II- Distribution of Cases based on their Occupational Status (N=106)

Occupational Status	Male		Female		Total	
	No. of cases	With Criminal history	No. of cases	With Criminal history	No. of cases	With Criminal history
Professional	2 (1.89%)	0 (0%)	0 (0%)	0 (0%)	2 (1.89%)	0 (0%)
Skilled Worker	55 (51.89%)	21 (19.81%)	0 (0%)	0 (0%)	55 (51.89%)	21 (19.81%)
Unskilled Worker	29 (27.35%)	14 (13.21%)	0 (0%)	0 (0%)	29 (27.35%)	14 (13.21%)
Unemployed	16 (15.09%)	11 (10.38)	4 (3.77%)	2 (1.89%)	20 (18.87%)	13 (12.26%)
Total	**102 (96.23%)**	**46 (43.39%)**	**4 (3.77%)**	**2 (1.89%)**	**106 (100%)**	**48 (45.28%)**

Table III - Distribution of Cases based on their Educational Status (N=106)

Educational Status	Male		Female		Total	
	No. of cases	With Criminal history	No. of cases	With Criminal history	No. of cases	With Criminal history
Graduate	9 (8.49%)	2 (1.89%)	1 (0.94%)	0 (0%)	10 (9.43%)	2 (1.89%)
Intermediate	12 (11.32%)	6 (5.66%)	0 (0%)	0 (0%)	12 (11.35%)	6 (5.66%)
High School	20 (18.87%)	9 (8.49%)	1 (0.94%)	0 (0%)	21 (19.81%)	9 (8.49%)
Primary	31 (29.25%)	17 (16.04%)	0 (0%)	0 (0%)	31 (29.25%)	17 (16.04%)
Illiterate	30 (28.30%)	12 (11.32%)	2 (1.89%)	2 (1.89%)	32 (30.19%)	14 (13.21%)
Total	**102 (96.23%)**	**46 (43.39%)**	**4 (3.77%)**	**2 (1.89%)**	**106 (100%)**	**48 (45.28%)**

Fig. I- Route of administration of Opioid (N=106)

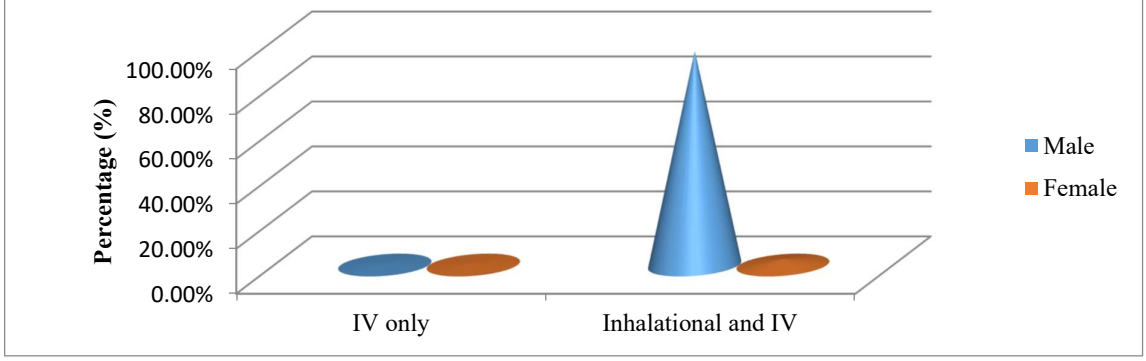

Fig. II - History of Other Substance Abused Prior to Opioid Use

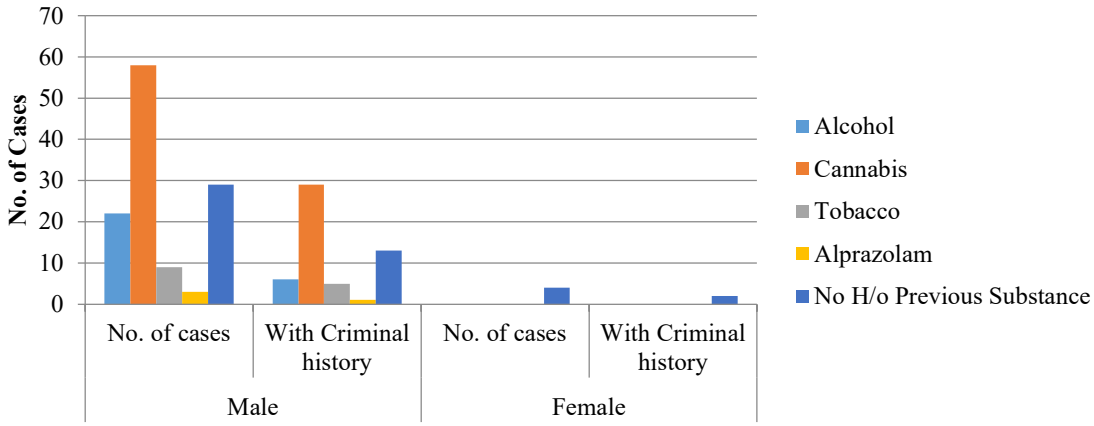

Fig. III - History of Substance Abuse amongst the Family Members of the Cases (N=106)

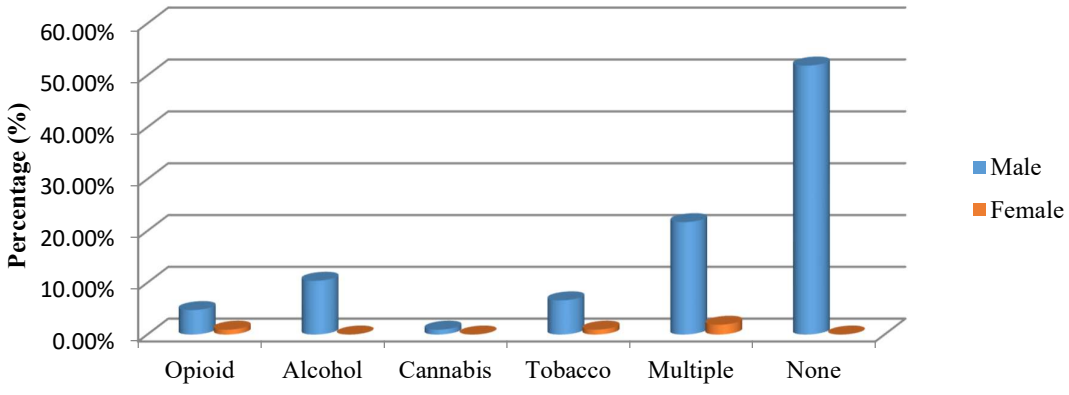
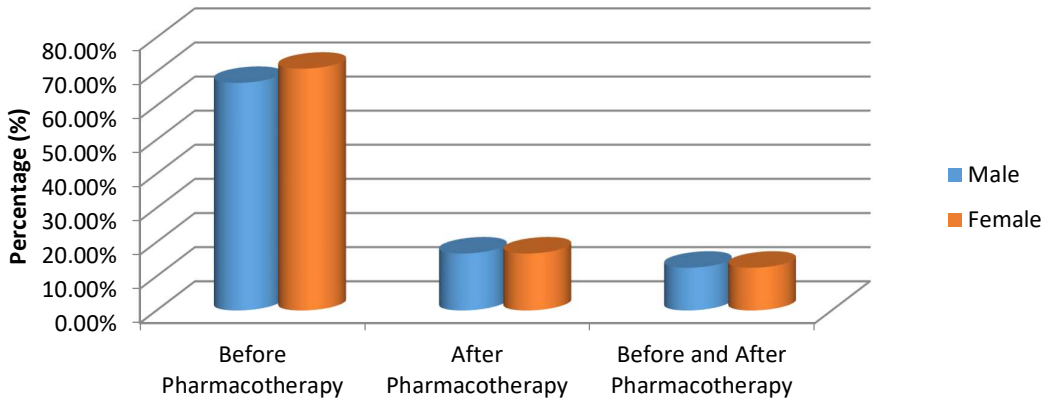
Fig. IV - Duration of Pharmacotherapy and Criminal Behaviour (n=48)