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Original Research Article

A Cross-Sectional Study of Clinical Profile and Pattern of Medicinal Opioid Abuse: A Hospital-Based Study in Vindhya Region

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Abstract

Introduction: A drastic shift from conventional substances of abuse such as tobacco, alcohol, and cannabis to pharmaceutical agents such as opioid-containing syrups, tablets, and Intravenous opioids has been noted of late in the developing Indian society. Various factors play a crucial role in the etiology of substance use. The present study was conducted to improve the understanding and strengthen the battle against this debilitating social and medical issue.

Objectives: To study the Clinical profile and pattern of Medicinal Opioid Abuse and their consequences on the affected population and their families.

Methods: The present study was an observational cross-sectional study, which enrolled 51 patients. This study was conducted in the Dept. of Psychiatry, Shyam Shah Medical College, Rewa. The socio-demographic data was collected by administering a semi-structured pre-devised questionnaire. A detailed interview was conducted to procure the relevant history and data required for the study.

Result: The mean age at onset of opioid use was 23.5 ± 4.8 years; all subjects were males, 64.7% were married. 89.2% were literate. 47.1% subject's occupation was semi-skilled, with family income > 10000/month. 58.8% of medicinal opioid abusers belonged to the urban community. The most commonly abused medicinal opioid was opioid-containing syrup (64.7%). The predominant initiating factor was Peer Pressure (41.2%). The most common psychiatric co-morbidity was Generalized anxiety disorder and Social Phobia, and the most common medical co-morbidity was Hepatitis and Hypertension. Legal (29.4%), personal (64.7%), and family-related (23.5); issues were prevalent in the study sample.

Conclusion: The youth; especially in the urban settlement is rapidly indulging in opioid use; leading to serious deterioration in their personal, social and occupational aspects of life. A preventive approach and timely intervention in those with ongoing medicinal opioid dependence

along with social support could go a long way in the management of pharmaceutical substance misuse.

Keywords: polysubstance abuse, opioid-containing syrup, injectable opioid, intravenous drug abuse

Introduction

A drastic shift from conventional substances of abuse such as tobacco, alcohol, and cannabis to pharmaceutical agents such as opioid-containing syrups, tablets, and Intravenous Opioids has been noted of late in the developing Indian society. The rising misuse of these substances has been noted both on prescriptions and over-the-counter purchases. The reason for initiating substance use varies among different socioeconomic backgrounds, gender, and age group; stress, peer pressure, curiosity, and even risk-taking behavior are a few among these.

Various socio-demographic factors, predisposing vulnerability factors, co-morbid substance use, co-morbid psychiatric, and medical illnesses play a crucial role in the etiology of substance use. Youth being influenced by the changing dynamics of society become the most vulnerable masses [1].

With the rising trend in the use of 'over the counter' prescription drugs which are being highly exploited by teens and college students. The use is seldom a single substance and even a cocktail of two substances. Much has been studied in detail about substances like alcohol [2], cannabis [3], tobacco [4] over the years. Some studies in the peripheral parts of our nation like Sikkim [5], Assam & Nagaland [6], and Punjab [7] have tried to throw some light upon the misuse of prescription drugs; but further studies are required to make a strong database to act upon.
The need to explore the prerequisite of this ever-increasing demand is the need of the hour, and the answer may be hidden in the socio-demographic aspects, cultural background, and interpersonal stressors prevalent amongst individuals abusing these prescription drugs.
Thus, this study attempts to study the various prescription opioids misused, the psycho-social factors, and the eventual impact of these substances upon the patients, their families, and society.

Objectives

To study the clinical profile and pattern of medicinal opioid users, to study their psycho-socio-demographic profile, assess co-morbid psychiatric disorders and medical illnesses; and estimate the social, legal, and occupational consequences.

Materials & Methods-

Study design

The present study was an observational cross-sectional study. Study area and study population
The study was conducted on medicinal opioid-dependent users as per DSM-V; attending out-patient as well as inpatient setup of Dept. of Psychiatry, Shyam Shah Medical College, Rewa (Madhya Pradesh, India). The duration of the study was 3 months. Patients of all age groups were included. The study purpose was explained to the patients, and those willing to participate in the study who provided written informed consent were included in the study.

Sample size calculation: A total of 51 patients were included in the study (Population size- 19358, population

proportion- 4.5%, CI-90% = Sample Size calculated = 47)

Sampling technique: Convenience sampling technique was used.

Study tool and study procedure: A self-designed, semi-structured proforma was used to collect the socio-demographic data, clinical trends and determinants of opioid use, predisposing factors leading to substance use, family history of substance use and psychiatric illness, co-morbid substance and psychiatric illness, the effect of substance use on various domains of life, legal issue owing to involvement in opioid use, prior and ongoing treatment for opioid dependence.

Modified Kuppuswamy socioeconomic scale 2020 [8] was used to assess the socio-economic background of opioid users. Clinical opiate withdrawal scale [9] was applied to assess the current withdrawal status. Prochaska and DiClemente transtheoretical model [10] was used to categorize opioid users into "stages of readiness to change", which consisted of five stages: the pre-contemplation stage, contemplation stage, preparation stage, action stage, and maintenance stage. Patients were either admitted or managed on an outdoor basis and managed as required, the subject gave informed consent and patient anonymity was preserved.

Statistical Analysis

Statistical analysis was done using Statistical Package for the Social Sciences version 21 (IBM Inc., Armonk, New York). Data were represented as percentages and frequencies. Non-parametric test - Spearman's Rho was used to measure the strength of association between variables. The level of significance for all tests was set at $p<0.05$.

Results

Sociodemographic profile (Table 1) -The majority of patients were in the age group 30-40 years; although the mean age of initiation was 23.5 ± 4.8 years. All patients were males, 64.7 % were married. A negative correlation between marital status and total duration of substance use was found; Spearman's rho -0.281 (p=0.05). 89.2% were literate, 47.1% subject's occupation was semi-skilled, with family income > 10000/month.

A positive correlation between income of the family and total duration of substance use was found; Spearman's rho 0.355 (p=0.05). Socio-economic status was measured using Modified Kuppuswamy Scale 2020; which categorized the study population as 29.4% upper middle class, 35.3% lower middle class, and 35.3% upper lower class. 58.8% were from joint families and 58.8% were from urban settlements; a positive correlation between settlement and total duration of substance use was also noted; Spearman's rho 0.484 (p=0.05).

Table 1: Distribution of study population as per Socio-demographic profile (N=51)

Sociodemographic Variables	No. of Patients	Percentage (%)
Age Group (In years)		
<20	3	5.9
21-30	21	41.2
31-40	27	52.9
Age Group at Initiation of Substance		
11-20	18	35.3
21-30	21	41.2
>30	12	23.5
Mean age at Initiation: The mean age at onset was 23.5 ± 4.8 years		
Marital Status		

Single	18	35.3
Married	33	64.7
Education		
Illiterate	6	11.8
Middle	9	17.6
High school	9	17.6
Inter/Diploma	15	29.4
Graduate/postgraduate	6	11.8
Professional	6	11.8
Exact income of the family		
<10,001	3	5.9
29973-49961	3	5.9
49962-74755	14	27.5
74756-99930	14	27.5
99931-199861	13	25.5
>199862	4	7.8
Kuppuswamy's Socio-economic Status		
Upper Middle	15	29.4
Lower Middle	18	35.3
Upper Lower	18	35.3
Family type		
Nuclear	21	41.2
Joint	30	58.8
Settlement		
Urban	30	58.8
Rural	21	41.2

Predisposing factors for Medicinal Opioid Use (Table 2) - Family history of substance use disorder was present in 70.6% of the study population, whereas only 23.5% could recall any other psychiatric history in their families. Various vulnerability factors were found among the study group of which family history of substance use was 64.7% followed by single parent and temperament issues; 5.9% each. Table 2 – Distribution of study population as per Predisposing factors for Substance Use (N=51)

Table 2: Predisposing factors for Medicinal Opioid Use

Variable	No. of patients	Percentage (%)
Family History of Substance Use Disorder		
Yes	36	70.6
No	15	29.4
Family History of Psychiatric Illness (Excluding Substance use disorder)		
Yes	12	23.5
No	39	76.5
Predominant Vulnerability Factor		
No Vulnerability Factor	12	23.5
Single Parent	3	5.9
Temperament	3	5.9
Family History of Substance Use Disorder	33	64.7

Clinical trends and determinants of opioid use (Table 3) - The most common co-morbid substance use along with medicinal opioids were tobacco (82.3%), alcohol (47%) and cannabis (23.5%). The most commonly abused medicinal opioids was cough-syrup containing opioid (64.7%) followed by injectable opioids (47.05%) and opioid-containing tablets/capsules (29.41%). In codeine-containing syrup consumers, the most frequent quantity was between 50 to 100mL; whereas in injectable opioid users, it was 3 vials/day. Opioid containing tablets had composition of Dicyclomine (10mg) + Paracetamol (325mg) + Tramadol (50mg); the most frequent quantity being 8 capsules/day. Predominant initiation, maintenance, and dependence factors were Peer Group (41.2%) To avoid psychological withdrawal (41.2%) and Withdrawal (52.9%); respectively. At the time of the interview, most patients had no presenting complaints (patients were on opioid-substitution-therapy), 23.5% were in withdrawal. The majority of patients had a total duration of opioid use between 1 to 5 years, with the mean duration being 5.64 ± 3.71 years.

Table 3: Distribution of study population as per Clinical Determinants of Substance Use (N=51)

Variable	No. of patients	Percentage (%)
Co-morbid substance use		
Alcohol	24	47.0
Tobacco	42	82.3
Cannabis	12	23.5
Quantity per day of Cough-syrup containing Codeine in mL (n=33)		
51-100	15	29.4
101-150	6	11.8
151-200	3	5.9
>200	9	17.6
Quantity in a day for Opioid Tablets Per day (n=15)		
6	3	5.9
8	9	17.6
10	3	5.9
Quantity of Injectable Opioid Per day (=24)		
3	15	29.4
4	3	5.9
5	3	5.9
6	3	5.9
Presenting Complaints		
No complaint	33	64.7
Psychiatric Manifestations	6	11.8
Withdrawal	12	23.5
Predominant Initiation Factor		
Peer Group	21	41.2
Out of Curiosity	12	23.5
Frustration/Anxiety/Loneliness	6	11.8
For sleep	3	5.9
Loneliness	9	17.6

Predominant Maintenance Factor		
To avoid psychological withdrawal	21	41.2
To avoid physical withdrawal	15	29.4
Craving	9	17.6
Company Sake	3	5.9
For seeking pleasure	3	5.9
Predominant Dependence Criteria		
Compulsion	9	17.6
Difficulty in Controlling	3	5.9
Withdrawal	27	52.9
Tolerance	6	11.8
Neglect	3	5.9
Awareness/Ignorance about harm	3	5.9
Clinical Opioid Withdrawal Scale		
<5 = No withdrawal	33	64.7
5-12 = mild withdrawal	9	17.6
13-24 = Moderate Withdrawal	9	17.6
Factor needing immediate intervention		
No specific Intervention	33	64.7
Withdrawal	15	29.4
Behavioral Problems	3	5.9
Total Duration of Opioid Use = 5.64 ± 3.71		

Level of Motivation and Abstinence (Table 4)- Patients on Opioid-substitution-therapy had higher levels of motivation; with 64.7% in the maintenance phase; new patients motivated for de-addiction presented in withdrawal and were in the Action phase (23.5%). Patients maintained on Opioid-substitution-therapy showed good abstinence and were among those with 4-6 months (11.8%), 7-12 months (29.4%), and >12 months (23.5%) abstinence group. New patients presented with short term abstinence; <1 month (5.9%) and 1-3 months (29.4%).

Table 4: Distribution of study population as per their Level of Motivation and Abstinence (N=51)

Variable	No. of patients	Percentage (%)
Level of Motivation		
Contemplation	3	5.9
Preparation	3	5.9
Action	12	23.5
Maintenance	33	64.7
Abstinence		
< 1 month	3	5.9
1-3 months	15	29.4
4-6 months	6	11.8
7-12 months	15	29.4
>12 months	12	23.5

Issues in Functionality, Effect on Family and Conflicts with Law (Table 5)- The majority of the study population experienced personal issues (64.7%) followed by family-

related issues (23.5%). Families were drastically affected; with significant economic burden (35.3%), emotional burden (29.4%), relationship distress (23.5%), and family instability (11.8%). A substantial number of subjects had a conflict with the law (29.4%); either due to consumption or involvement in sales of medicinal opioids.

Table 5: Distribution of study population as per Issues in Functionality, Effect on Family and Conflicts with Law (N=51)

Variable	No. of patients	Percentage (%)
Issues in Functionality		
No issues	6	11.8
Personal	33	64.7
Familial	12	23.5
Effect on Family		
Emotional Burden	15	29.4
Economic Burden	18	35.3
Relationship Distress	12	23.5
Family Instability	6	11.8
Conflicts with Law		
Yes	15	29.4
No	36	70.6

Psychiatric and Medical co-morbidities (Table 6)- Social phobia and generalized anxiety disorders were present among 17.6% of individuals each; whereas Major Depressive disorder was present in 11.8% of patients. Hepatitis B/C (11.7%) was the most striking medical co-morbidity present among our study group followed by hypertension (5.9%). 2 individuals were HIV positive as well.

Table 6: Distribution of study population as per Co-morbid psychiatric and medical illness (N=51)

Variable	No. of patients	Percentage (%)
Psychiatric Comorbidity		
None	24	47.1
Major Depressive Disorder	6	11.8
Generalized Anxiety Disorder	9	17.6
Social Phobia	9	17.6
Suicidality	3	5.9
Medical Co-morbidity		
Hepatitis	3	5.9
HIV	2	3.9
Hypertension	3	5.9
Diabetes Mellitus	2	3.9
No-Comorbidity	41	80.4

Initiated OR ongoing treatment (Table 7)- Patients under opioid substitution therapy were on Buprenorphine of varying doses and duration; with the most common dose being 4mg per day (23.5%) and duration being less than or equal to one year (35.3%). Patients presented with withdrawal were initiated on either symptomatic management (23.5%) or opioid antagonist - Naltrexone 50mg once a day (11.8%) as per their wish.

Table 7: Distribution of study population as per their initiated OR ongoing treatment (N=51)

Variable	No. of patients	Percentage (%)
Treatment		
Symptomatic Management	12	23.5
Naltrexone	6	11.8
Buprenorphine	33	64.7
Duration of Buprenorphine Use		
Not Applicable	18	35.3
Less than or equal to one year	18	35.3
Two years	9	17.6
Four Years	3	5.9
Five Years	3	5.9
Mean Bose of Buprenorphine		
Not applicable	18	35.3
2	6	11.8
4	12	23.5
6	9	17.6
8	3	5.9
10	3	5.9

Discussion

Drug dependence in India is one of the serious health hazards in the present scenario in consonance with western culture. The upsurge in the magnitude of drug dependence has erected a state of panic making the preventive strategies on substance use one of the national priorities [11]. The issue of drug dependence has now crept into the younger generations, spoiling the plot for future India; and has extended to misuse of off-the-counter medications such as Opioids.
In this study, the maximum number of participants were from the age group of 30-40 years was; but the mean age of initiation was 23.5 ± 4.8 years. Suggesting an early onset; as early as 17 years followed by either prolonged use or persisting related complications.

The findings were in accordance with a previous study on codeine-containing syrup by S.K. Mattao *et al* (1997) [7] and Giri Op *et al* (2014) [12]. 64.7% of patients were married; similar to a study by Sharma et.al [13]. All patients being male in this study is owing to the cultural background of the population [11,14] and when compared to the western population, a striking difference is observed; with almost equal men and women involved in the abuse of prescription opioids [15].

The majority of the subjects dropped out of education around Intermediate/Diploma which shows the significant effect of substance use upon the future aspect of an opioid-dependent patient leading to a lower standard of employment; which was majorly semi-skilled work in this study population. Socio-economic drain due to substance use is a known fact [16] and the same was observed in the present study, with the majority of the study population being in the lower socio-economic class; as per Modified Kuppuswamy Scale 2020; 35.3% were from the lower middle class and 35.3% were from the upper lower class. The most commonly used medicinal opioid among the study group was codeine-containing syrup in 64.7 % of

patients followed by injectable opioids (Inj. Pentazocine) in 47.1% of patients; which has been the problem drug among Intravenous-drug users [17].

The rising availability of these products in the open market without any prescription put both the legal system as well as the pharmacies in question. Majority of the individuals consumed about 50- 100mL of codeine-containing syrup which is higher than the data from previous studies on codeine-containing syrup [6,7], and Inj. Pentazocine 3 vials/day.

Opioid containing tablets had a composition of Dicyclomine (10mg) + Paracetamol (325mg) + Tramadol (50mg) with 29.4% of patients using it, with the most frequently consumed quantity being 8 capsules/day; abuse of tramadol has previously been implicated along with abuse of codeine-containing syrup [18]. The mean duration of dependence was 5.64 ± 3.71 years, which highlights the rapid dependence caused by opioids and difficulty in cessation. Initiation was primarily due to peer influence (41.2%) which has been noted in previous studies as well [6,7].

Maintenance was due to increasing psychological withdrawal (41.2%) which is usually not the case with heroin or opium use; where physiological withdrawal is of greater concern. Patients under opioid-substitution-therapy were on Buprenorphine (64.7%); whereas patients who presented with withdrawal were initiated on either symptomatic management (23.5%) or opioid antagonist - Naltrexone 50mg once a day (11.8%); OST and naltrexone management distribution were similar to the USA data where although Methadone was the most used drug, followed by Buprenorphine and then naltrexone [19].

The majority of the patients on Buprenorphine were using the same for less than or equal to one year; similar suggestions of using buprenorphine up to 1 year have been recommended in guidelines for recovery-oriented opioid substitution therapy in PGIMER, Chandigarh [20]. Substance use leads to impairment in various domains of life [13,16]; in the present study, 64.7% of patients experienced personal issues.

Families of these patients were also affected leading to economic burden as well as an emotional burden; suggesting an all-around deterioration of family and self. The presence of medical and/or psychiatric co-morbidity complicates the situation even more. In this study, the most common medical co-morbidity was Hypertension and Hepatitis C/B.

The presence of HIV was only encountered in Intravenous drug users, and they only had co-morbid hepatitis B/C. Similar findings were observed in the study by Alexendra et. al 2020 in the USA, where they have studied infectious disease in injectable drug users [21]. Hepatitis C was the most common co-morbidity in treatment-seeking patients in a study by Majumdar et. al 2021 [14]. Psychiatric co-morbidities are significantly higher in substance abusers and the same was the case for medicinal opioid users as well when compared to the general population.

The most common psychiatric co-morbidities noted were Generalized Anxiety Disorder (17.6%) and Social Phobia (17.6%) followed by Major Depressive Disorder (11.8%). In a similar study conducted by Goldner et.al, the most prevalent psychiatric co-morbidity was anxiety disorder followed by depression [22]. A prospective study by Basu *et al*., 2013, reported that mood disorders were the most common disorders [23].

Substance users have always been found to be in conflict with the law, a substantial proportion of patients in this study faced legal consequences either under intoxication, possession of substance, or involvement in sales of an illicit substance. Malhotra *et al*

(2007) [24] studied the use of drugs among juveniles in conflict with the law and found a significant relationship between drug use and legal conflicts. A detailed study on legal conflicts and medicinal opioid use is warranted.

Conclusions

The rising trend of medicinal opioid use as noted in this study is noteworthy and calls for a swift action to control and reduce the same. The majorly affected population is the youth, comprising of patients initiating drug use in their early 20s; affecting their education as well as mental health. This eventually leads to various issues in the patient's social, occupational, and personal well-being; and even amounting to multiple legal issues.

Causing a major concern as these spoils the plot for future India as the youngsters are affected and their future is definitely in jeopardy. Witnessing the effect of substance use on families, and the effect of peer groups on substance use in the present study which ascertains the crucial role of our society in the improvement of this deteriorating issue. The high prevalence of infectious diseases like HIV and Hepatitis among intravenous drug users calls for a better implementation of infection control strategies such as Harm reduction; and regular screening among the vulnerable population. Noticing the high prevalence of psychiatric illnesses such as anxiety-related disorders and depression among patients suggests that early psychiatric intervention may reduce and prevent the use of substances.

The use of buprenorphine showed great efficacy in maintaining abstinence among patients but is the prolonged use of buprenorphine for years justified, and what can be its implication? Finally, an integrated role of family, society, physician, and psychiatrist is required to cure society of this ever-increasing problem.

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