

Predictors of Inpatient Treatment Completion among Females with Opioid Use Disorder: Findings from a Tertiary Care Drug Dependence Treatment Centre of India

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ABSTRACT

Introduction: Studies have reported that females who drop out prematurely from inpatient treatment have poor treatment outcome. However, literature from India is limited in this regard. **Methods:** We reviewed case records of female patients admitted with opioid use disorder at NDDTC, Ghaziabad between January 1, 2008 and December 31, 2012 to study the predictors of inpatient treatment completion among female patients with opioid use disorder in relation to their sociodemographic and clinical profile. **Results:** Over the 5 years, 72 female patients were admitted with opioid dependence. During the study period, out of 72 patients, 44 (61.1%) were inpatient treatment completers and 28 (38.9%) were noncompleters. Mean length of ward stay was 5.1 ± 3.8 days and 16.2 ± 11.8 days for inpatient treatment noncompleters and completers, respectively, the difference being statistically significant ($t = 4.845, P < 0.001$). The multivariable analysis (adjusted for selected demographic characteristics as marital status, education, and employment) revealed that most women taking drug for relief from pain, having medical morbidity, and onset of opioids at age 25 years or more had a significantly greater likelihood for being treatment completers. **Conclusion:** Certain factors can help in identification of women opioid users who are at risk of leaving the treatment.

Key words: Opioid dependence, substance use, treatment retention, women

INTRODUCTION


Opioid dependence is a chronic, relapsing disorder and requires long-term therapeutic plan for adequate management. The opioid abuse in females has become a major clinical and public health concern. Prescription drugs have been reported as common initial drugs of

abuse among females with more than two-thirds being injecting users.^[1] It has been reported that first exposure to an opioid in up to 85% of females was a legitimate prescription for pain, which subsequently led 60%–70% to misuse to get high.^[2] The prevalence of co-occurring

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mood and anxiety disorders has also been reported to be high among women psychoactive substance users. More specifically, the association between depressive and anxiety disorders and nonmedical use of prescription opioids and sedatives among women has been supported in earlier studies from Western countries.^[3,4]

The inpatient treatment program is the first step of long-term therapeutic plan. Unfortunately, preterm discontinuation from inpatient treatment among patients with substance use disorder is a common problem. Thus, many patients, who prematurely discontinue the inpatient treatment program, have a poor outcome.^[5] Studies report that substantial proportion of alcohol and heroin users does not complete inpatient program.^[6-9] It has been suggested that younger age, unemployment, single marital status, lower level of education, recent cannabis use, and concurrent benzodiazepine abuse are associated with early dropout from inpatient treatment or residential drug abuse treatment program.^[6-11] However, studies suggest that predictors of inpatient treatment completion are different for men and women. Older females who have higher incomes, stable social setup, higher education status, and seeking treatment for legal reasons are more likely to complete inpatient treatment or residential treatment.^[12-16] Females with severe dependence and poor addiction severity index employment scores at baseline are less likely to complete treatment than other women.^[17]

Studies have reported that females who drop out prematurely from inpatient treatment have poor treatment outcome, but the factors that influence inpatient treatment outcome are still poorly understood, and there is limited literature on this issue from Asian countries including India. Therefore, the current study is aimed to assess predictors of treatment completion as early identification of risk factors can provide important clinical information of females who are at more risk for noncompletion.

METHODS

Setting and participants

The sample consisted of 72 consecutive female inpatient admissions to the National Drug Dependence Treatment Centre between January 1, 2008, and December 31, 2012. Collaborating with the World Health Organization, the National Drug Dependence Treatment Centre offers a 50-bed, mixed-gender inpatient detoxification or stabilization on agonist and nonpharmacological interventions for both alcohol and drugs. The center does not have a fixed length of stay, and the center's major treatment goal is transfer of patients to prolonged treatment such as naltrexone or buprenorphine and nonpharmacological. Treatment at the center is highly subsidized and is provided free to the patients who are below

the poverty line. The staff comprises a multidisciplinary team of psychiatrists, clinical psychologists, psychiatric social workers, nurses, and others. Medical opiate detoxification or agonist stabilization treatment includes buprenorphine along with nonbenzodiazepine sleep medication is prescribed as necessary.

Admission at the center is voluntary. Before admission, an initial intake interview is conducted to collect basic demographic and initial drug use information. The treatment process during the stay in the ward is documented in the case notes. The patients are either discharged after completion of treatment or are discharged when they seek leave against medical advice or on disciplinary grounds.

Chart review

The present chart review included case notes of female patients who were admitted to the center for a period of more than 24 h between 2008 and 2012. Those patients with a diagnosis of opioid use disorder were included in the study. When a patient was admitted multiple times, only treatment data from the latest admission during the study period were used. Patients whose records could not be traced were removed from the analysis. Information was retrieved on sociodemographic variables including age, marital status, educational level, occupation, family type, locality, and family support system. The information related to substance use included type of substance, duration of use, age of onset, motive of use, route of administration, and source of procurement. In addition, details of physical comorbidities, psychiatric comorbidities, relapses, treatments, and hospitalization were recorded. Inpatient treatment completers were defined as having a planned discharge, control of withdrawal symptoms upon discharge, and enrolment into a continuing maintenance program. The study was approved by the Intuitional Ethics Committee.

Statistical analyses

Demographic and clinical variables were represented using mean, standard deviation, frequency, and percentages. Chi-square test and independent *t*-test were used for bivariate comparisons of categorical and continuous variables, respectively, with the inpatient treatment completion/noncompletion. Variables that were significant at $P < 0.10$ in bivariate analysis were subsequently entered into the multivariate logistic regression models for both completers and noncompleters group. Odds ratios and 95% confidence intervals were computed. All statistical analyses were performed using SPSS version 21 (IBM Corp., Armonk, NY).

RESULTS

During the study period, out of 72 patients, 44 (61.1%) were inpatient treatment completers and 28 (38.9%)

were noncompleters. Mean length of ward stay was 5.1 ± 3.8 and 16.2 ± 11.8 days for inpatient treatment noncompleters and completers, respectively, the difference being statistically significant ($t = 4.845$, $P < 0.001$) existed between inpatient treatment noncompleters and completers. Tables 1 and 2 present the distribution of sociodemographic and clinical characteristics for the two levels of inpatient treatment completion status: inpatient completers versus noncompleters. Bivariate analyses examined relationships between sociodemographic, clinical characteristics and treatment completion status. As mentioned in Tables 1 and 2, age,

Table 1: Inpatient treatment completers versus noncompleters across demographic data

Variable	Noncompleters (n=28)	Completers (n=44)	t/χ^2 (P)
Age	29.3±6.9	36.3±9.7	3.342 (0.001)*
Education			
Illiterate	18 (64.3)	12 (27.3)	9.725 (0.008)*
Middle	6 (21.4)	21 (47.7)	
Secondary and above	4 (14.3)	11 (25)	
Marital status			
Married	25 (89.3)	30 (68.2)	4.225 (0.040)*
Not married	3 (10.7)	14 (31.8)	
Family			
Joint	12 (42.9)	12 (27.3)	1.870 (0.171)
Nuclear	16 (57.1)	32 (72.7)	
Employment			
Employed	9 (32.1)	25 (56.8)	4.180 (0.041)*
Homemaker	19 (67.9)	19 (43.2)	
Locality			
Urban	12 (42.9)	27 (61.4)	2.3360 (0.124)
Rural	16 (57.1)	17 (38.60)	

Mean±SD or frequency (%), * $P < 0.05$. SD – Standard deviation

Table 2: Inpatient treatment completers versus noncompleters across substance-related variables

Variable	Noncompleters (n=28)	Completers (n=44)	t/χ^2 (P)
Opioid use			
Smack	12 (42.9)	16 (36.4)	0.304 (0.582)
Synthetic	16 (57.1)	28 (63.6)	
Age at onset (years)	23.4±5.7	30.8±9.5	3.678 (<0.001)*
Duration of use (months)	50.2±30.3	61.9±59.0	0.969 (0.336)
Inpatient stay (days)	5.1±3.8	16.2±11.8	4.845 (<0.001)*
Husband opioid use	15 (53.6)	17 (38.6)	1.546 (0.214)
Opioid use with husband	15 (53.6)	12 (27.3)	5.049 (0.025)*
Reason of initiation			
Cope stress	11 (39.3)	10 (22.7)	10.050 (0.007)*
Pain relief	8 (28.6)	29 (65.9)	
Husband pressure	9 (32.1)	5 (11.4)	
Psychiatric comorbidity	11 (39.3)	19 (43.2)	0.107 (0.744)
Medical comorbidity	4 (14.4)	19 (43.2)	6.570 (0.010)*
Injecting drug user	19 (67.9)	24 (55.8)	1.030 (0.310)
Concurrent alcohol use	6 (21.4)	6 (13.6)	0.748 (0.387)
Concurrent sedative use	15 (53.6)	10 (22.7)	7.182 (0.007)*
Concurrent tobacco use	24 (85.7)	25 (56.8)	6.572 (0.010)*

Mean±SD or frequency (%), * $P < 0.05$. SD – Standard deviation

education status, marital status, employment, opioid use with husband, reason for initial use of opioid, age at onset of opioid, concomitant use of tobacco, and sedative use were significantly associated with the treatment completion status. Inpatient treatment noncompleter females had started their opioid use earlier: age of onset of use was 23.4 ± 5.7 years as against 30.8 ± 9.5 years among completers ($P < 0.001$). Table 3 summarizes the result of binary logistic regression by considering the dependent variables as completers and independent predictors as reason for drug use, medical morbidity, onset of opioids use, sedative and tobacco usage, and drug intake with husband. The multivariable analysis (adjusted for selected demographic characteristics as marital status, education, and employment) revealed that most women taking drug for relief from pain, having medical morbidity, and onset of opioids at age 25 years or more had a significantly greater likelihood for being completers. On the other, those using sedatives and tobacco had a significantly lesser likelihood for being completers. However, after Sidak correction for the multiple corrections, only three variables remained significant, i.e., reasons for drug use, onset of opioids, and sedatives use.

DISCUSSION

This study suggests that more than a third of the women admitted with a diagnosis of opioid use disorder do not complete the treatment. Furthermore, it was found that initiation of opioids for relief of pain and onset at an age more than 25 years was predictors of treatment completion while the use of sedatives predicted treatment noncompletion. It is pertinent to note that there were about 72 admissions of women in the period of 5 years in a center which has about a thousand admissions in a year.^[18] Similar findings have been echoed in other studies which have found low rates of women in treatment use facilities across India.^[19-21] It is likely that gender-specific barriers such as concerns for children, apprehension of exploitation, and lack of supportive systems might be at play.^[17]

The present study finds that around 38.9% of the females left the treatment even before completion of inpatient treatment program. In the previous study carried out at this center showed that 36% dropped out of treatment but that study primarily focused on male opiate users.^[22] Similar findings also reported from Western countries that 30%–50% of patients do not complete their inpatient stay.^[17] Previous studies have reported that homemaking responsibility, a substance-abusing spouse, a male-oriented treatment system, and mental health diagnoses are risk factors for poor treatment retention and completion.^[15,23]

Table 3: Logistic regression analysis

Characteristics	Adjusted risk ratio estimate	95% CI	P
Reason for drug use			
To cope up stress and anxiety	1.00	-	-
Relief from pain	6.61	1.61–27.17	0.01
Under husband pressure	1.17	0.19–7.37	0.87
Medical morbidity			
No	1.00	-	-
Yes	4.23	1.07–16.83	0.04
Onset of opioids			
<25	1.00	-	-
≥25	13.06	3.29–51.857	<0.001
Sedatives use			
No	1.00	-	-
Yes	0.08	0.02–0.44	0.003
Tobacco use			
No	1.00	-	-
Yes	0.29	0.07–1.23	0.093
Drug intake with husband			
No	1.00	-	-
Yes	0.58	0.15–2.23	0.43

CI – Confidence interval

A high proportion of female substance users in our study were married and belonged to nuclear family. The prevalence of co-occurring psychiatric disorders was also high in the current study. However, the presence of additional psychiatric disorder was not a predictor of outcome in the inpatient treatment phase of drug abuse treatment.^[19,24] This could be attributed to the present sample being an inpatient one, and those with higher severity of substance use might have been preferred for admission. The most common reason for the use of prescription drugs was pain followed by stress/anxiety. Previous studies have reported that relief for pain and stress is the most common reason for prescription of these drugs to women who later on continue to abuse them.^[25,26]

The education level was found to be a significant predictor of the outcome of inpatient treatment completion in this study. Females who had not completed formal education were less likely to complete inpatient treatment. This finding is consistent with mixed-gender studies of treatment completion.^[15] The poor knowledge of negative consequences due to drug use and reading skills among illiterate females may contribute toward treatment noncompletion. Thus, illiterate patients should be informed in detail regarding severity of withdrawal symptoms, need for treatment, and availability of treatment services.

Around 30% of females were concomitant abusers of sedatives. Interestingly, concomitant use of sedatives to be found a significant predictor of the outcome of inpatient treatment completion in this study. These

findings are consistent with previous studied those reported that females with opioid dependence use prescription drugs such as sedatives, and opioid users who abuse sedatives have poor treatment outcome.^[27,28] In addition, those using tobacco had a significantly lesser likelihood for being treatment completers. This suggests that tobacco and benzodiazepine use must address during the inpatient ward stay of females with opioid use disorders.

The multivariable analysis (adjusted for selected demographic characteristics as marital status, education, and employment) revealed that most women taking drug for relief from pain, having medical morbidity, and onset of opioids at age 25 years or more had a significantly greater likelihood for being completers. One could infer that females, who started to take opiates due to medical problems and pain, had greater chances of successful completion of treatment. This calls attention to rational use of opioids among patients with pain conditions and close monitoring to prevent development of dependence in them. Younger age of onset has also been previously associated with dropout from treatment among opioid users.^[29] Some studies linked early age onset substance use disorder with difficult temperament in infancy to conduct problems in childhood to substance use by early adolescence and to severe substance use disorder by young adulthood.^[30] We suggest that the family can have a central role in preventing substance use and later misuse among young people. Therefore, the involvement of family during inpatient treatment is recommended for engagement with treatment services.^[31,32]

The current study has certain limitations. It is based on retrospective chart review of inpatients at a tertiary care center. Hence, the findings may not apply to outpatient populations or other setting. Certain other variables that could be associated with treatment retention (for example personality, stressful life events, and quantum of social support) were not evaluated in the present study.

Despite the limitations, the present study informs about the predictors of treatment completion of women opioid users. This could be useful at the clinical level to identify those who are at risk of dropout and make attempts to retain them in treatment. At the policy level, this might be useful in further assessing the demand and needs of women opioid users and address their concerns by implementing suitable modifications in the service provision field.

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Conflicts of interest

There are no conflicts of interest.

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