

# **The long-term impact of a holistic inpatient treatment program for substance use disorders: 498 patients personally revisited after 5-10 years**

**Running head: Long-term impact of holistic treatment in substance use disorders**

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### **The long-term impact of a holistic inpatient treatment program for substance use disorders: 498 patients personally revisited after 5-10 years**

#### **Abstract**

**Background:** Holistic treatment often better impacts recovery from substance use disorder in terms of treatment retention and psychosocial improvement. Studies on the long-term outcome of such treatment programs are needed from India.

**Methods:** We traced and interviewed 498 patients face-to-face after 5-10 years from their last inpatient treatment with holistic approach in a rural addiction treatment center in Punjab. We used a semi-structured questionnaire for the assessment of various clinical, social and behavioral parameters. Patients were asked about their experience during inpatient treatment and treatment modalities, and qualitative assessment was performed by content analysis.

**Result:** The mean age of onset was  $21.1 \pm 7$  years, and the mean duration of dependence was around ten years. At the final assessment, 33% of the patients had relapsed, 32% were abstinent, 27% were abstinent with intermittent lapses, and the rest of them died. Intergroup comparison revealed that with respect to the relapsed group, abstinent patients had more regular follow-up ( $\chi^2=52.8$ ,  $p<.001$ ), physical exercise ( $\chi^2=50.5$ ,  $p<.001$ ), social interaction ( $\chi^2=11.4$ ,  $p=.02$ ), better marital relationship ( $\chi^2=202.5$ ,  $p<.001$ ), participation in household works ( $\chi^2=159.5$ ,  $p<.001$ ) and more favorable rating of the treatment center ( $\chi^2=70.4$ ,  $p<.001$ ). The majority of satisfied patients felt that overall good facility and service during inpatient treatment helped in their recovery.

**Conclusion:** There was an overall improvement in psychosocial functioning in the abstinent patients after the holistic treatment. The positive changes are persistent after an interval of around five to ten years. The inadequate treatment utilization of the relapsed group requires attention and redressal.

**Keywords:** holistic treatment, substance use disorder, long-term effect

## INTRODUCTION

Substance use disorders (SUD) affects multiple facets of human life, posing a wide array of challenges. The tolerance, craving, and withdrawal from psychoactive substances often lead to salience to substance-taking behavior and neglect of other responsibilities and alternate pleasurable activities.<sup>[1]</sup> Around eight percent of the Indian population require help for their alcohol use, and around one percent require help for their opioid and cannabis use problems.<sup>[2]</sup> Although the quantum of work for substance use disorder is quite high, there is a treatment gap, of up to 90 percent as per a nationwide survey.<sup>[3]</sup>

Another challenge is frequent lapse, as around 60% of patients lapsed within one to six months of the inpatient treatment.<sup>[4, 5]</sup> So there is a need to shift the treatment goal from complete abstinence to a more realistic recovery. Recovery is defined as 'a voluntarily maintained lifestyle characterized by sobriety, personal health, and citizenship.'<sup>[6]</sup> With proper intervention, around half of the patients achieve lasting recovery.<sup>[7]</sup>

Instead of an unidimensional approach, a holistic treatment incorporating biopsychosocial, spiritual and alterative treatment modalities may help to attain the treatment goal more effectively.<sup>[8]</sup> This field is still evolving, and the effectiveness of the holistic treatment approach is not yet widely studied. The preliminary evidence shows that a multimodal treatment approach can reduce premature treatment ending, increase treatment retention, and lead to an overall improved abstinence rate.<sup>[9]</sup> The majority of the studies incorporate a relatively short-term follow-up. These studies reveal that a persistent positive change in social functioning, family functioning and daily routine, as well as regular treatment adherence is associated with persistent recovery and fewer relapses.<sup>[10-14]</sup> The poor utilization of treatment, pessimistic view, and stigma are the main barriers to recovery.<sup>[15]</sup>

The enduring effect of the holistic treatment approach may be appreciated over a longer time interval and in a larger population. This study aims to assess the current psychosocial and behavioral aspects of the patients with SUD who were treated using the multimodal treatment approach after an interval of around five to ten years. This study will further help us understand the various challenges that patients with SUD face during their recovery.

## MATERIALS AND METHODS

**Study setting:** This study was conducted in a rural addiction treatment setting at Cheema Mandi, Sangrur, Punjab. Here the deaddiction service is provided through both inpatient and outpatient settings. A team of psychiatrists, psychologists, counselors, yoga experts, and psychiatric nurses provide pharmacological and psychosocial interventions. The patients admitted to the center also participate voluntarily in spiritual activity and self-help programs conducted by voluntary service

providers. All of the above constitute a holistic recovery-oriented approach towards the treatment of substance use disorder.

**Study Design and Duration:** This was a retrospective cross-sectional study, where we assessed the patients' clinical and psychosocial condition after around five to ten years of their last admission to this center. The data collection for the study was carried out during 2018-19.

**Inclusion and exclusion criteria:** We performed purposive sampling. Adult male patients (age range 18-65 years) with a history of at least one prior admission between 2010-2013 and no inpatient treatment in this center till 2018-19 were recruited for the study. We excluded patients with severe mental illness, cognitive impairment, severe physical complications, as those could have affected the patients' response to the questionnaire. Prior informed consent was obtained from patients before recruitment in the study.

**Sample Size & Sampling:** A total of 883 patients were admitted to De-addiction Centre during the year 2010-13. The sample size was found to be 498 considering a 95% confidence interval and 3% margin of error. We kept the margin of error lower than usual 5% to adjust for the patients who might have died in the intervening period.<sup>[16]</sup> We tried contacting the patients consecutively in the order of date of admission. After telephonic contact, we sought their consent for interview, and those consenting were included for the final assessment. This process was performed till we reached the 498<sup>th</sup> consenting participants. See figure 1 for the details of the recruitment.

**Tools:** We used a semi-structured clinical history sheet. It included sociodemographic information, clinical information like the onset of the substance use disorder, nature of the substance used, treatment details in terms of follow-up, course of SUD in terms of intermittent lapse and relapse. Current social & family behavior, abstinence status, spiritual pursuits were also assessed using Likert scales. Besides, they were also asked about their views regarding the care during their inpatient treatment.

*Operational definition:* We used the following operational definitions to identify different states of patients with respect to current substance use.

*Abstinent:* A person with substance use disorder, who after treatment, has improved to the extent that he is abstinent from all drugs for more than one year till the time of final assessment.

*Abstinent with lapses:* the person with substance use disorder who underwent episodes of lapse intermittently and is abstinent for less than one year at the time of final assessment.

*Relapse:* After a variable period of remission, the patient has ceased to be abstinent and has restarted using substances in the previous pattern.

**Procedure of Data Collection:** We obtained formal permission from the director of the Addiction Treatment Centre, Cheema Mandi, and written informed consent was obtained from

patients for their voluntary participation. The baseline sociodemographic and clinical data was recovered from the case record files of the hospital repository. Social workers, trained data collectors, and counselors performed the home visit to collect data for the final assessment. Each patient was interviewed face-to-face for 25-30 minutes. The psychiatrist and senior psychologist supervised the data collection procedure to cross-check the accuracy of the information recorded.

**Statistical analysis:** The analysis was performed using SPSS version 14.<sup>[17]</sup> We applied descriptive statistics (mean with standard deviation wherever applicable) for baseline sociodemographic and clinical variables. Based on the current state of substance usage, we divided the population into currently abstinent, abstinent with intermittent lapses, and relapsed. Subsequently, we compared the behavioral and clinical variables between the three subgroups. We used chi-square or Fischer's exact test to compare the frequencies of the nominal or ordinal variables and post-hoc analysis to identify the significant values. We used one-way ANOVA to compare the means of continuous variables (i.e., the interval between the initial and final assessment and relapse count). Pearson's correlation (e.g., age of onset, duration of use, etcetera) and Kandel's Tau (e.g., physical exercise, social activity, etcetera) was used to examining correlations between the relevant demographic and clinical parameters. We used Benjamini-Hochberg correction to adjust the level of statistical significance.

**Content analysis:** We performed a qualitative analysis of the respondents' comments regarding their perception of the quality of inpatient care and treatment modality. Qualitative thematic analysis was performed by coding, categorization, and theme generation. All the coding was done manually. Once all the codes were finalized, themes and sub-themes were generated. The themes, sub-themes, and codes retrieved from each content were entered into an excel sheet. The frequencies were mentioned in the content analysis.<sup>[18]</sup>

## RESULT

At the baseline, the mean age was 32.2 years (SD= 9.6, range 16-65 years). Most of the patients were from nearby areas. The mean distance of the hospital from patients' residences was 65.2 kilometers (SD=38.2, range 6-200 kilometers). The majority of the patients were educated up to matric (53.4%), were employed (79.9%), earned up to Rupees 10000 per month (33.1%). The mean age of onset was 21.7 years (SD=7, range 7-49 years), and the mean duration of SUD was around 122 months (SD= 90.7, range 1.2-480 months). Most of the patients used more than one substance (87.5%), with the majority of them using tobacco (78.1%), opioids (67.9%), and alcohol (66.7%). Some of the patients (53; 10.6%) had criminal cases against them at the baseline. For further details, see table 1.

-----Table 1-----

At the face-to-face assessment during 2018-19, 158 (31%), 135 (27%), and 165% (33%) of the patients were abstinent, abstinent with lapses, and relapsed, respectively. The rest of the patients died between initial and final assessment (See figure 2 for details).

-----Figure 2-----

The average interval between baseline and the final assessment was around seven years, and there was no statistically significant inter-group difference in the interval. Most of the patients had irregular or no follow-up after the admission, but the number of patients having regular follow up in the abstinent group (n=61; 38.6%) was significantly more than that of the other two groups ( $\chi^2=52.8$ ;  $p<.001$ ). Most of the patients had up to two lapses, although the mean number of lapses in the abstinent group (mean=1.3; SD 1.1) was significantly lower than that (mean=1.8; SD 2.4) in the relapsed group ( $F=4.8$ ;  $p.009$ ). The number of patients lapsed within the first six months was significantly lesser among the abstinent group (n=94, 60.1%) with respect to the other groups ( $F=97.8$ ;  $p<.001$ ). Although most of the patients rated the center favorably, a significantly greater number of patients in the abstinent group rated the center as 'good' with respect to the other groups ( $\chi^2=70.4$ ;  $p<.001$ ). For further details, see table 2.

-----Table 2-----

The comparison of behavioral parameters at the final assessment revealed that most of the patients were not actively engaged in physical exercise, but the number of patients with regular physical exercise in the abstinent group was significantly higher (n=29; 18.4%) than the other groups ( $\chi^2=50.5$ ;  $p<.001$ ). It was found that patients in all three groups pursued education after the initial treatment, and there was no significant inter-group difference in educational achievement at the final assessment. The employment status showed that around 19.4% of the relapsed patients were unemployed, which was significantly higher than the other groups ( $\chi^2= 28.5$ ,  $p<.001$ ). The majority of

the patients used to perform social interaction rarely, but the number of patients with regular social interaction (n=16; 10.1%) in the abstinent group was significantly higher than that (n=4; 2.4%) in the relapsed group (F=11.4, p=.02). Reversibly the number of patients with rare social conflict in the abstinent (n=156; 98.7%) and abstinent with intermittent lapse (n=135; 100%) was significantly higher than that of the relapsed group (n=139; 84.2%). The number of patients with good marital adjustment in the abstinent (n=124; 78.5%), and abstinent with lapse (n=102; 75.6%) were significantly higher than that (n=27; 16.4%) of the relapsed group (F=202.5; p<.001). majority of the patients in the abstinent (n=138; 87.3%) and abstinent with intermittent lapses (n=110; 81.5%) used to participate in the household regularly works, which was significantly higher than that of the relapsed group (F= 159.5; p<.001). For further details, see table-3.

-----Table 3-----

A significant positive correlation was retained (after Benjamini-Hochberg correction) between the age of presentation and age of onset ( $r=.45$ ,  $p<.001$ ), as well as the duration of use. Relapse count was negatively correlated with interval between admission and first lapse (Kendall's Tau B=-.36,  $p<.001$ ) and positively correlated with the number of readmissions (Kendall's Tau B =.71,  $p<.001$ ). Current education was negatively correlated with duration of use (Kendall's Tau B=-.19,  $p=.007$ ) and positively correlated with physical exercise (Kendall's Tau B=.17,  $p=.003$ ). Marital relation was positively correlated with interval between initial admission and first lapse (Kendall's Tau B=.21,  $p<.001$ ) and physical exercise (Kendall's Tau B=.16,  $p=.004$ ). The social conflict was negatively correlated with both household works (Kendall's Tau B=-.33,  $p<.001$ ) and patients' rating of the center (Kendall's Tau B=-.19,  $p=.005$ ). Patients' rating of the center was positively correlated with the patients' involvement in household works (Kendall's Tau B= .32,  $p<.001$ ). For further details, see table 4

-----Table 4-----

The content analysis of the patients' response regarding the quality of inpatient care and treatment modality revealed that a majority of the patients (92 abstinent, 90 abstinent with lapses, and 97 relapsed patients) did not have any specific comments. The major themes under the code of quality of care were satisfied and dissatisfied. The majority of the respondents (41 abstinent, 34 abstinent with lapses, and 26 relapsed patients) stressed the overall good treatment facilities and service (rather than a particular treatment modality) during inpatient care. The main subthemes in dissatisfied responses were rude behavior of the hospital staff, high treatment cost, and safety issues, as few patients absconded from the center. A minority of the patients were concerned regarding the high cost (two patients from each of the three groups) and dependence liability of buprenorphine-naloxone treatment (one, five, and four patients from abstinent, abstinent with

lapses and relapsed groups respectively), and wanted to stop it. Few of the patients felt that 'off medications' and 'poor affordability' led to relapse, and relapse led to violence. Family members of two patients in the relapsed group provided substances to calm them down, whereas five patients' relatives requested the data collector for readmitting their patients. Four patients in the relapsed group were apprehensive regarding the possibility of involuntary treatment from the de-addiction center. Four patients in the abstinent group and one in the relapsed group mentioned that they were not treated for their comorbid physical and psychiatric condition during inpatient treatment. For further details, see figure 3.

## **DISCUSSION**

This observational study has physically traced patients with SUD after a long period of inpatient treatment and tried to explore various treatment-related and behavioral factors related to their current clinical situation. Following the patients after a gap of years allows considering the role of various biopsychosocial factors as the course and outcome modifier of SUD. It also allows taking a more "distanced" and hence objective view of the situation, with a relatively less propensity of an observer bias.

Our study revealed that most of the patients underwent one or more lapses. Less than 10% of the patient did not report any lapse in the initial treatment and final assessment interval. Substance use disorders are notorious for lapses, and even a state-of-the-art treatment facility in the USA reports one-year abstinence rates of around 25%-35% only. It is again seen that most of the patients lapsed within six months of discharge from the treatment facility.<sup>[19]</sup> Another study from a tertiary care institute reported around a 25% abstinence rate after one year of follow-up.<sup>[20]</sup>

The recovery from SUD is related to, but not the same as abstinence. The recovery is a process rather than an event. It includes continuous care along with lifestyle changes.<sup>[10]</sup> The positive lifestyle changes lead to improvement in overall quality of life, and it includes a better adjustment with the family, a stable job, and social integration.<sup>[11]</sup> Our study revealed that the abstinent group had a higher proportion of current employment household works and marital adjustment. Various other studies have shown these parameters to be particularly important during the path of recovery. A US-based study on middle-aged patients with methadone maintenance for opioid dependence showed that across gender, around half of the patients were unemployed even during the methadone maintenance treatment. At the same time, they often had marital and relationship issues, which was reflected in the relationship transition and separation from their children. These problems were significantly lower among the recovered patients.<sup>[12]</sup> This study indicates that

pharmacotherapy itself can have limited efficacy in whole-person recovery even in most advanced setups. At the same time, abstinence cannot be equated with a meaningful recovery.

This simultaneously raises another question: what works in the process of recovery from substance use disorders? Different studies have shown the promise of multimodal treatment in the recovery from SUD. Psychological counseling, peer-mediated intervention, group therapy, twelve-step programs were used in combination. The psychosocial and spiritual components of the substance dependence treatment program are often complementary to pharmacological management and provide a low cost, low risk, and effective approach to substance-related problems.<sup>[21,22]</sup> The efficacy assessment of the holistic treatment is fraught with several limitations like the formation of an appropriate control group, poor evidence base, and defining the outcome(s).<sup>[8,23]</sup> In our study, we approached the problem indirectly through the qualitative method. The vast majority of the satisfied patients stressed the overall good treatment facilities and service, while only a few patients mentioned specific treatment modalities (like spirituality, good quality medicine, etc.) as the factor for their wellbeing. This indirectly indicates the role of a properly executed multimodal treatment in the long-term improvement of patients with SUD.

An important finding of our study is the inter-group difference in physical activity. Yoga and physical exercise are an integral part of the inpatient treatment program in our center. During the final assessment, it was found that the majority of the patients did not engage in physical exercise, although a higher number of participants from the abstinent group used to exercise regularly. A meta-analysis shows that physical exercise positively affects abstinence but has no appreciable effect on withdrawal, depressive and anxiety symptoms of substance use disorder.<sup>[13]</sup> Various community therapeutic approaches include sports to enhance wellbeing and a sense of being included in the mainstream. As substance-using populations are often socially excluded and marginalized, involvement in sports activity in a group can enhance the self-esteem and sense of belongingness essential for recovery.<sup>[24]</sup> The inadequate involvement in physical exercise might be due to deficient awareness, inadequate social involvement, etcetera, which requires further exploration.

Somewhat related findings are the changes in social conflict and social interaction. It is interesting to find that during the final assessment, the majority of patients had reduced social conflict, although social interaction was rare among most of the patients. A large-scale study in Canada has shown that in a population of around 2700 patients with a median of two years of methadone maintenance treatment, around 65% had unemployment, and around 40% had various interpersonal conflicts. This indicates poor social functioning and higher social conflict among the pharmacologically treated patients with opioid dependence.<sup>[25]</sup> This might be due to various

conditions like personality issues, psychological conditions, and overall poor quality of life, etcetera. At the same time, the stigma associated with substance use also plays a major role. Social exclusion, along with different forms of stigmatization, creates a significant barrier in treatment-seeking as well as recovery in patients using a substance.<sup>[26]</sup>

The course of the patients during the interval of the initial and final assessment revealed a significantly lesser number of lapses and significantly longer interval between initial treatment and first lapse in abstinent patients. Early lapse is often associated with inadequate coping and poor self-efficacy. A lapse in the absence of an external context-specific factor may induce an abstinence violation effect, which can prepone another lapse or relapse.<sup>[27, 28]</sup> An interesting finding is in spite of the difference in the number of lapses, there is no significant inter-group difference in the number of readmissions. Although apparently counterintuitive, this may indicate the lack of treatment-seeking. The chronic relapsing and remitting nature of the illness and associated stigma often lead to a pessimistic view regarding treatment success in the patients and caregivers.<sup>[15]</sup> This, in turn, often adversely affects the course of illness, leading to a vicious cycle of relapse and inadequate treatment.

The significant intergroup difference in patients' rating of the treatment facility is an important finding. The patients in the abstinent group rated the treatment set up more favorably than the other groups. Studies show that general adherence and success of psychiatric treatment are associated with various specific and nonspecific factors. The therapeutic relationship and patient satisfaction are two interrelated and important nonspecific factors.<sup>[29]</sup> The abstinent patients had significant positive changes in most of the familial, social and behavioural parameters. They also came up with more positive feedback regarding the holistic treatment during inpatient care. Although it is tempting to draw a causal relation between the past treatment and current status of the patients, but the study design does not allow us to do so. The current status can be affected by multiple other unexplored factors like treatment in the intervening period, stressor, and so on. At the same time the past holistic approach to treatment might have an enduring effect on the successfully treated patients.

Various social and behavioral prognosis-related variables like education, physical exercise, involvement in household works, and marital relationship are correlated with each other and with clinical variables like the interval between inpatient treatment and first relapse and patient's satisfaction regarding treatment set up. This indicated an interrelation between clinical recovery and the change in behavior of the patient.

**Limitation:** The study has several limitations. The retrospective study design and cross-sectional assessment have the inherent possibility of recall bias. We incorporated the accounts of

the caregivers to minimize it, but still, the possibility of recall bias cannot be ruled out. The absence of the female population and the single-center trial limit the generalizability of the result. For the sake of simplicity, no structured tool was used to assess various behavioral parameters. As a result, the subjectivity might affect our findings. Further studies are warranted to address these limitations systematically.

**Conclusion:** This study allows us to look through the window of current behavior to the clinical course of the patients after the inpatient treatment for substance use disorder. Culturally appropriate psychosocial treatment along with pharmacotherapy has shown to be effective in various setups including our study. The study design does not allow us to draw a causal relationship between the current status of patients and the past treatment, but this is gratifying to see that a considerable proportion of the patients had a pervasive change in multiple areas of life after the holistic treatment approach. At the same time, various challenges like inadequate social interaction and treatment-seeking in patients facing relapses warrant attention and redressal.

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**Table 1:** Sociodemographic and clinical data at the baseline

Parameters		Mean $\pm$ SD(range)/ N(%)
Age (yrs)		31.2 $\pm$ 9.6 (16-65) (IQR= 13)
Distance from the hospital (km)		65.2 $\pm$ 38.2 (6-200)
Marital status	Currently married	385 (77.3)
	Currently not married	113 (22.7)
Education	Illiterate	98 (19.7)
	Upto matric	266 (53.4)
	Above matric	134 (26.9)
Occupation	Unemployed	100 (20.1)
	Employed	398 (79.9)
Monthly income	Nil	108 (21.7)
	Up to 10000	165 (33.1)
	10000-20000	117 (23.5)
	>20000	108 (21.7)
Age of onset (years)		21.1 $\pm$ 7 (7-49)
Duration (months)		121.9 $\pm$ 90.7 (1.2-480)
Criminal cases		53 (10.6%)
No of substances used	Single substance	62 (12.5%)
	More than one substances	436 (87.5%)
Substance use disorder	Alcohol	332 (66.7%)
	Opioids	338 (67.9%)
	Cannabis	67 (13.5%)
	Sedatives	156 (31.3%)
	Tobacco	389 (78.1%)

**Table 2:** Comparison of clinical parameters at the final assessment

Parameter		Abstinent group (N=158) Mean $\pm$ SD (range)/ N(%)	Abstinent with lapse (N=135) Mean $\pm$ SD (range)/ N(%)	Relapsed (N=165) Mean $\pm$ SD (range)/ N(%)	$\chi^2/F$	df	p
Age in years		30.3 $\pm$ 8.7 (18-65)	30.6 $\pm$ 9.6 (16-65)	31.2 $\pm$ 9.5 (16-60)	.42	2	.64
Interval of initial and final assessment in months		85.4 $\pm$ 14.1 (59.6-115.4)	85.6 $\pm$ 14.9 (57.2-114.9)	86.4 $\pm$ 14.6 (57.1-113.9)	.24	2	.79
H/O follow up	No F-Up	<b>55 (34.8)</b>	57 (42.2)	<b>107 (64.8)</b>	52.8	4	<.001
	Irregular F-up	42 (26.6)	50 (37.0)	44 (26.7)			
	Regular F-up	<b>61 (38.6)</b>	28 (20.7)	<b>14 (8.5)</b>			
Lapse count		<b>1.3<math>\pm</math>1.1 (0-6)</b>	1.5 $\pm$ 1 (1-7)	<b>1.8<math>\pm</math>2.4 (1-19)</b>	4.8	2	.009
Interval of first lapse	Not applicable	<b>38 (23.4)</b>	0 (0)	0 (0)	97.8	6	<.001
	6 months	<b>94 (60.1)</b>	100 (74.1)	120 (72.7)			
	6-12 months	<b>9 (5.7)</b>	<b>29 (21.5)</b>	18 (10.9)			
	>12 months	17 (10.8)	<b>6 (4.4)</b>	<b>27 (16.4)</b>			
Readmission	Nil	117 (74.1)	110 (81.5)	127 (77.0)	6.1	4	.19
	Upto 2	38 (24.1)	19 (14.1)	31 (18.8)			
	> 2	3 (1.9)	6 (4.4)	7 (4.2)			
Patients' rating of the centre	Good	<b>139 (88.0)</b>	<b>111 (82.2)</b>	<b>81 (49.1)</b>	70.4	4	<.001
	Satisfactory	<b>14 (8.9)</b>	<b>17 (12.6)</b>	<b>61 (37)</b>			
	Poor	<b>5 (3.2)</b>	7 (5.2)	23 (13.9)			

Bold values show significant difference after post-hoc test.

**Table 3:** Comparison of behavioural parameters at the final assessment

Parameter		Abstinent group (N=158)	Abstinent with lapse (N=135)	Relapsed (N=165)	$\chi^2/ F$	df	p
Physical exercise	Never	<b>98 (62)</b>	106 (78.5)	<b>155 (93.9)</b>	50.5	4	<.001
	Regular	<b>29 (18.4)</b>	10 (7.4)	<b>4 (2.4)</b>			
	Occasional	<b>31 (19.6)</b>	19 (14.1)	<b>6 (3.6)</b>			
Educational achievement	Illiterate	20 (12.7)	26 (19.3%)	35 (21.2%)	8.5	4	.07
	Upto matric	79 (50)	68 (50.4)	90 (54.5)			
	Above matric	59 (2.3)	41 (30.4)	40 (24.2)			
Employment	Unemployed	<b>7(4.4)</b>	<b>5 (3.7)</b>	<b>32 (19.4)</b>	28.5	2	<.001
	Employed	<b>151 (95.6)</b>	<b>130 (96.3)</b>	<b>133 (80.6)</b>			
Social interaction	Regular	<b>16 (10.1)</b>	8 (5.9)	<b>4 (2.4)</b>	11.4	4	.02
	Sometimes	2 (1.3)	5 (3.7)	2 (1.2)			
	Rare	<b>140 (88.6)</b>	122 (90.4)	<b>159 (96.4)</b>			
Social conflicts	Regular	<b>1 (0.6)</b>	<b>0 (0)</b>	<b>16 (9.7)</b>	42.0	4	<.001
	Sometimes	1 (0.6)	0 (0)	<b>10 (6.1)</b>			
	Rare	<b>156 (98.7)</b>	<b>135 (100)</b>	<b>139 (84.2)</b>			
Marital relationship	Not applicable	32 (20.3)	25 (18.5)	<b>48 (29.1)</b>	202.5	6	<.001
	Good	<b>124 (78.5)</b>	<b>102 (75.6)</b>	<b>27 (16.4)</b>			
	Satisfactory	1 (.6)	6 (4.4)	73 (44.2)			
	Poor	<b>1 (.6)</b>	<b>2 (1.5)</b>	<b>17 (10.3)</b>			
Household works	Rare	<b>3(1.9)</b>	<b>2 (1.2)</b>	<b>46 (27.9)</b>	159.5	4	<.001
	Occasional	<b>17 (10.8)</b>	<b>23 (17)</b>	<b>73 (44.2)</b>			
	Regular	<b>138 (87.3)</b>	<b>110 (81.5)</b>	<b>46 (27.9)'</b>			

Bold values show significant difference after post-hoc test.

**Table 4:** Correlation between sociodemographic, clinical and current behavioural parameters.

Parameters	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age in years	-															
2. Distance from centre (km)	.01 (.82)	-														
3. Age of onset	<b>.45</b> <b>(&lt;.001)</b>	.02 (.67)	-													
4. Duration of use	<b>.49</b> <b>(&lt;.001)</b>	-.001 (.96)	-.11 (.03)	-												
5. Days of admission	.02 (.55)	.02 (.68)	-.01 (.74)	-.01 (.72)	-											
6. Interval of final assessment	-.01 (.83)	-.18 (.02)	.03 (.34)	-.04 (.20)	.13 (.03)	-										
7. Relapse count	-.04 (.34)	-.01 (.88)	-.06 (.08)	-.03 (.51)	.06 (.11)	.06 (.12)	-									
8. Interval between admission & relapse¶	-.03 (.37)	.07 (.11)	-.01 (.73)	-.04 (.98)	-.02 (.69)	-.05 (.21)	<b>-.36</b> <b>(&lt;.001)</b>	-								
9. Readmission¶	-.05 (.24)	.02 (.57)	-.08 (.053)	-.03 (.49)	.07 (.10)	-.07 (.07)	<b>.71</b> <b>(&lt;.001)</b>	-.14 (.02)	-							
10. Physical exercise¶	-.05 (.21)	.16 (.02)	-.02 (.61)	.03 (.52)	.05 (.20)	-.02 (.66)	.01 (.81)	.01 (.83)	.04 (.33)	-						
11. Current education¶	-.13 (.03)	-.03 (.42)	-.02 (.67)	<b>-.19</b> <b>(.007)</b>	.02 (.54)	.03 (.40)	.07 (.09)	.06 (.14)	.10 (.03)	<b>.17</b> <b>(.003)</b>	-					
12. Social activity¶	-.01 (.94)	-.03 (.53)	-.01 (.74)	.01 (.90)	-.01 (.82)	-.01 (.89)	.01 (.86)	.04 (.34)	.04 (.36)	.13 (.01)	-.16 (.01)	-				
13. Social conflict¶	-.08 (.04)	-.1 (.02)	-.07 (.06)	-.04 (.36)	-.01 (.97)	.05 (.21)	.03 (.57)	.01 (.92)	.02 (.71)	-.09 (.05)	-.06 (.18)	.05 (.33)	-			
14. Marital relation¶	.18 (.02)	.03 (.50)	-.08 (.03)	.11 (.03)	-.03 (.42)	.01 (.77)	.05 (.23)	<b>.21</b> <b>(&lt;.001)</b>	.02 (.74)	<b>.16</b> <b>(.004)</b>	-.05 (.28)	.02 (.64)	.03 (.45)	-		
15. Household works¶	.06 (.09)	.07 (.11)	.05 (.21)	.03 (.4)	-.01 (.73)	-.02 (.67)	.03 (.46)	.09 (.04)	.02 (.62)	.16 (.002)	.05 (.29)	-.05 (.31)	<b>-.33</b> <b>(&lt;.001)</b>	-.08 (.07)	-	
16. Rating of the centre¶	.08 (.04)	-.04 (.38)	.06 (.11)	.04 (.3)	-.02 (.55)	-.04 (.25)	.05 (.25)	.02 (.64)	.07 (.12)	-.09 (.05)	-.06 (.15)	-.04 (.34)	<b>-.19</b> <b>(.005)</b>	.15 (.01)	<b>.32</b> <b>(&lt;.001)</b>	-

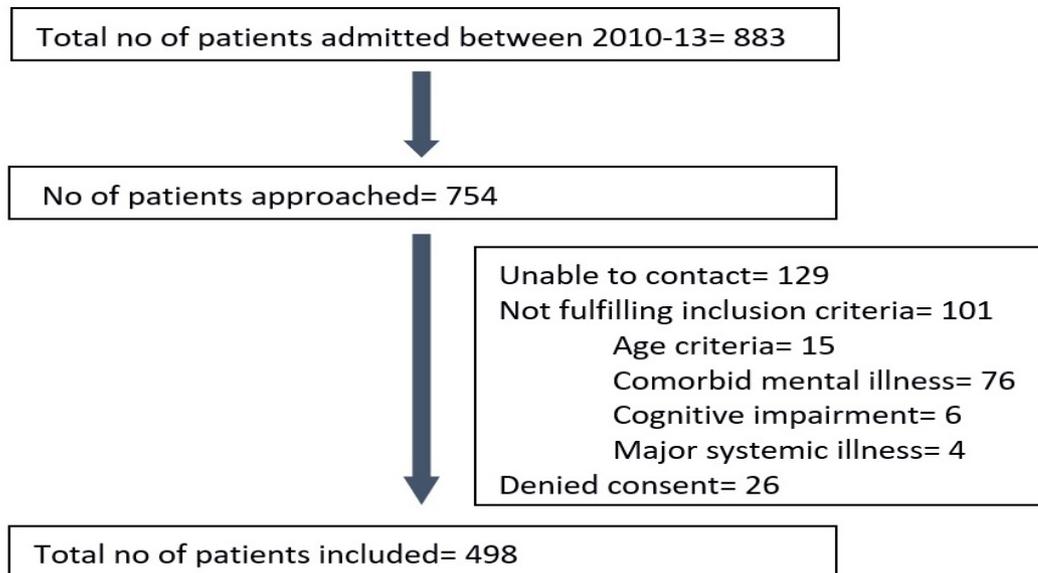
¶- Kendall's Tau B values

Rest are Pearson's correlation values

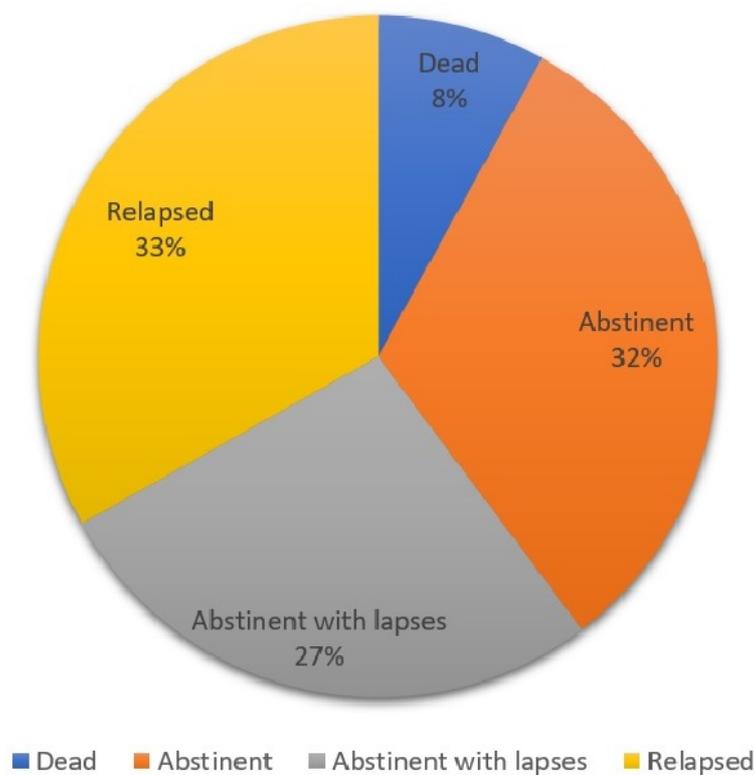
Bold values retain significance after Benjamini-Hochberg correction

**Figure legends**

**Figure 1:** Study flow diagram showing the number of patients approached for the study, and reason of exclusion of patients.

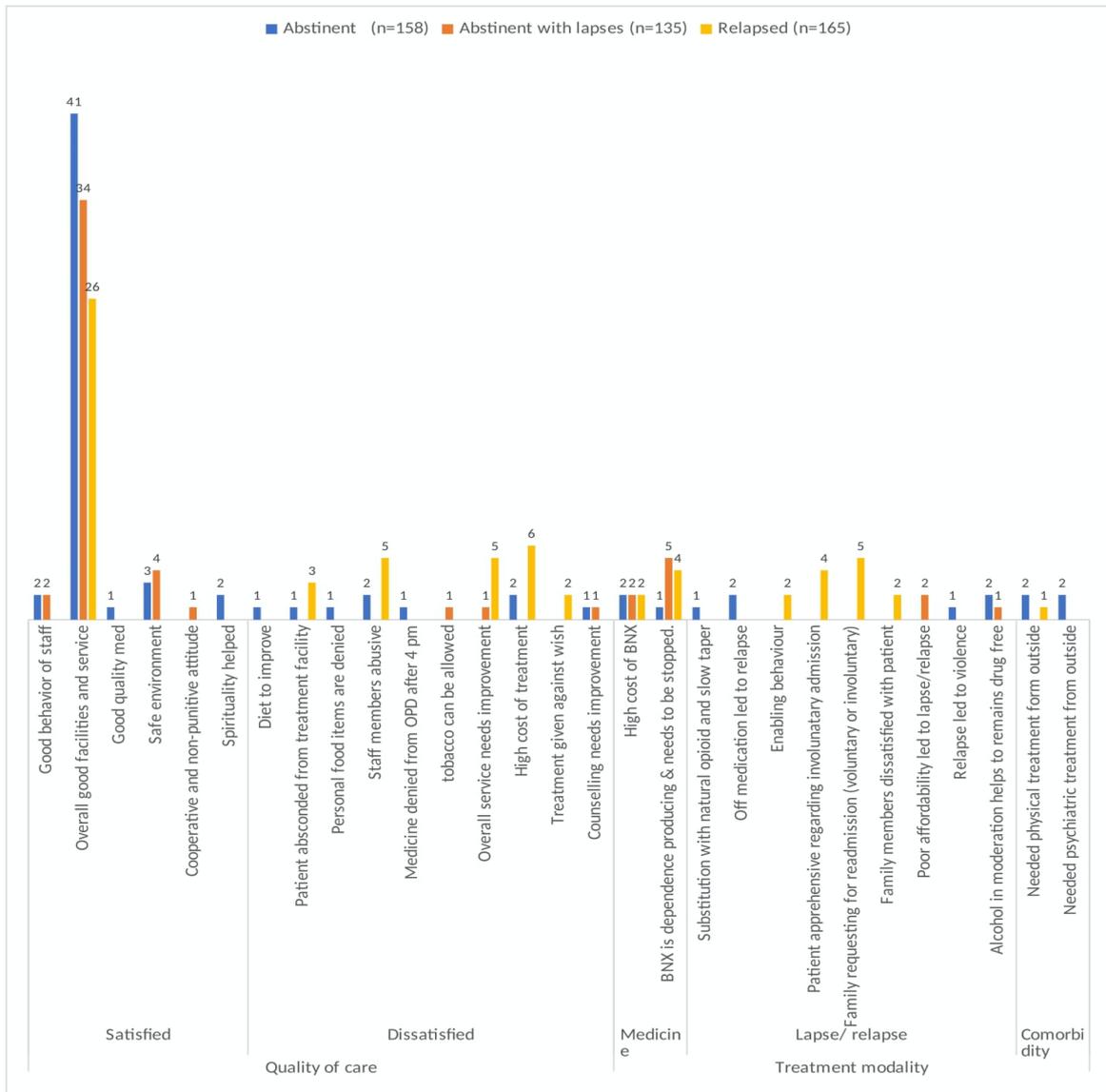


**Figure 2:** Pie chart showing the proportion of abstinent (32%), abstinent with lapses (27%) and relapsed (33%) patients at the final assessment. Rest 8% patients died between initial and final assessment.



**Figure 3:** Content analysis, showing various codes, themes and subthemes. The ‘quality of care’ had two main themes- ‘satisfied’ and ‘dissatisfied’. The ‘treatment modality’ had three main sub-themes- ‘medicine’, ‘lapse/relapse’ and ‘comorbidity’. Various subthemes and their distribution in different groups of patients (abstinent, abstinent with lapse and relapsed group) are shown in the bar diagram.

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Abstinent (n=158; No specific comment=92)  
 Abstinent with lapses (n=135; No specific comment=90)  
 Relapsed (n=165; No specific comment= 97)