

# Factors Related to Treatment Adherence of Men with Alcohol Dependence Syndrome : a retrospective cohort study

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## Abstract

### INTRODUCTION:

Although in India, men have exhibited high rates of alcohol and drug use disorders; there is a paucity of substance use disorder treatment outcome research. In addition, there exists controversy about effectiveness among different available intervention strategies.

### METHOD:

This was a retrospective cohort study conducted at post graduate department of psychiatry, CMC Vellore from 1<sup>st</sup> January 2005 to 31<sup>st</sup> June 2005. Patients charts (Files) were screened and out of 3145 charts registered during the period of six consecutive months, only ICD 10 diagnosis of ADS with or without co-morbidity were assessed in detail. The poor outcome group was defined by those with frequent relapses and irregular follow up. Better adherence and Good outcome group was of patients with minor lapses, higher compliance and regular follow up in 3

month. All the demographic, and clinical as well as interventions related factors were compared among these two groups and data was analysed in SPSS 11.

### RESULTS:

100 male with mean age 28.8 SD 6.5 were assessed and 45% had family history of ADS and 23% had co-morbid major mental illness. Out of 100 men ADS, 75 only received acute care intervention followed by outpatient de-addiction strategies with predominantly became poor outcome 76%. The analysis showed that factors responsible for better adherence and good outcome were the spouse education as compared to the patient ( $p=0.0001$ ), in-patient admission ( $p=0.02$ ), psychotherapy session ( $p=0.0001$ ), use of disulfiram ( $p=0.0001$ ).

### CONCLUSIONS:

**ADS patients who come to hospital for psychiatrists help must be**

**offered comprehensive care including in patient admission, detoxification, antabuse therapy, client centred psychotherapy and motivational enhancement and relapse prevention interventions. With above said strategies chance of long term outcome in male ADS would improve.**

## INTRODUCTION :

Worldwide Alcohol dependence syndrome is a chronic and disabling disorder associated with other axis I psychiatric morbidities across different cultures (1). Both illicit alcohol and illicit substance can cause serious public health problems (2). Excessive use of alcohol has been identified as a major contributor to the global burden of disease. It causes 5.9% of all deaths globally. In addition, it is responsible for 5.1% of the disability-adjusted life years.(3)

The data from identified treatment centre both Governmental Organizations and Non Governmental Organizations between 1997-2000 suggested that Alcohol, Opiate and Cannabis are the frequently abused substances in Indian subcontinent as per the *National survey report mid 2000* (4) as well as other developing and developed countries. The national household survey of drug use in our country had shown nationwide prevalence of alcohol dependence syndrome as 4-5% (5roy et al 29). However there is dearth of research on long term follow up of substance dependence in India.

Non-adherence diminishes the

effectiveness of treatment for all chronic diseases including alcohol dependence (6). The non adherence is as high as 80% amongst patients taken in for psychological interventions like Alcohol anonymous (AA) groups in Latin American country like Brazil.(6)

In this study Terra et al enumerated factors reported by patients as reasons for non-adherence to AA were lack of identification with method, and lack of credibility. Where as Indian study looking at adherence of treatment showed results of the 5-year outcome, Kuruvilla P K et al found that patients coming from distant places and those with health workers in their localities remained completely abstinent.(7)

Baltieri et al (2009) focused on study type of beverages preferentially consumed by ADS their effect severity of dependence and on therapeutic outcome. These patients were divided in three arms to receive topiramate upto 300mg/day, Naltrexone 50mg/day and the placebo. There were no significant differences between groups of treatment modality in relation to the time to first relapse and cumulative (8) abstinence duration.

The group of spirit drinker not only showed the higher severity of dependence also reported higher craving, repeated treatment failure and frequent hospitalization and poor adherence to either of the treatment arm as compared to the group of beer drinkers(8).

Overall the factors responsible for better adherence are identified as the method of intervention(4), the nature of the beverage like type of alcohol with less percentage of alcohol(8), proactive role of the pharmacists (4) and individual motivation coupled with on going support system from patients community(6).

The current study was undertaken with an objective of identifying prevalence of alcohol dependence in tertiary care center and to explore further regarding the factors related to better adherence in men with alcohol dependence syndrome in a tertiary care centre.

## **METHODS:**

### **Participants:**

Our centre is a tertiary health center with active liaison with not only with specialized clinic like medicine, gastro, and hepatic but also, with community health centre CHAD catering to the rural population. The study population was drawn from all patients with mental illness attending the out-patient review services in the Department of Psychiatry, Bagayam, Christian Medical College, Vellore from 1<sup>st</sup> January 2005 to 31<sup>st</sup>. June 2005. The Principal Investigator (PI) had screened all charts (Files) during above said period and out of 3145 charts registered during the period of six consecutive months, 102 were adults [100 male and 2 female] with ICD10 diagnosis of alcohol dependence syndrome with or without co-morbidities. The study

population included all male subjects within the age group of 18 to 55 years, receiving in patients or out Patients treatment. Other co-morbid conditions which are associated with alcohol dependence were also considered. Female patients with alcohol dependence Syndrome were screened for and excluded from entry into the study. (Figure-I: Flow diagram)

### **Assessment:**

Following entry into the study, the clinical and demographic profile and follow up related variables were assessed. From the patient case records, details regarding the Axis –I diagnosis and other co-morbid conditions, the duration of untreated dependence, past history of other psychiatric disorder, medical diagnosis, treatment for medical disease exposure to medication for sleep disturbance , duration of different modalities of treatment with disulfiram/naltrexone and other co-administered psychotropic drugs were obtained using a structured proforma.

### **SAMPLE SIZE CALCULATION:**

Sample size of 100 was required to find a significant difference between groups of good adherence and poor adherence with a precision of 10% and with a 95% Confidence interval.

### **Data analyses:**

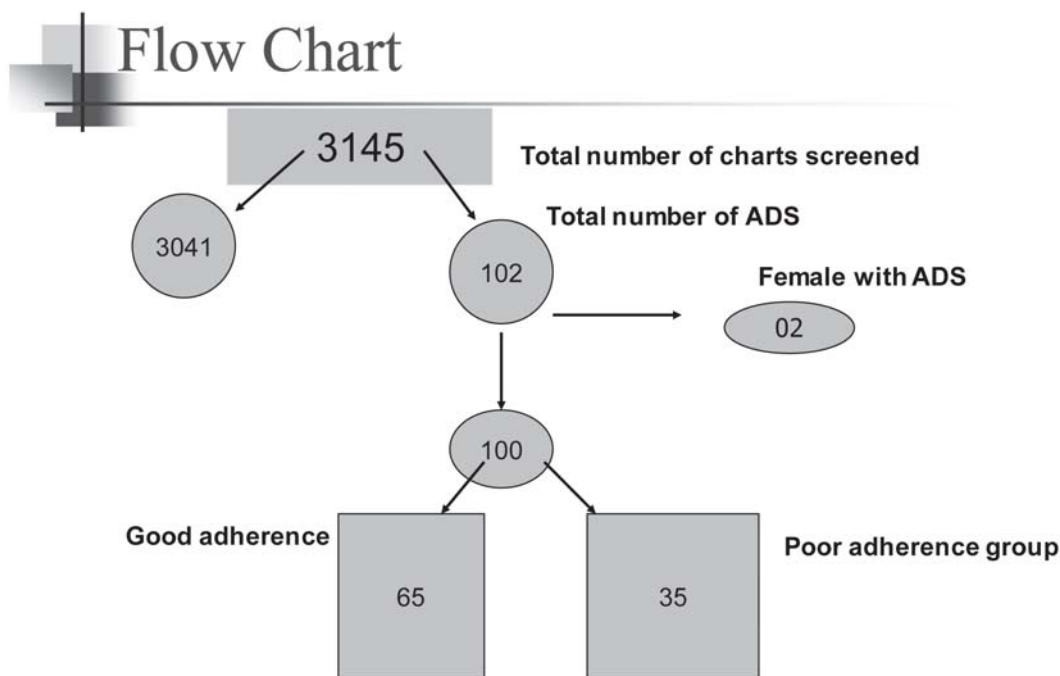
All numerical variables were described using mean with standard deviation and

categorical variables were summarized using frequencies and percentages. Continuous variables were compared between the study groups using independent two sample t test, if they were normally distributed and nonparametric tests were used if their distribution were not normal. Chi square or Fisher exact test was used for comparison when variables were categorical. Logistic regression analyses were done to assess the independent effect of multiple variables on better adherence to de-addiction programme. Odds ratios with 95% CI were obtained and p-values of less than 0.05 were considered

statistically significant. Statistical analysis was done using the SPSS 11.0 software package.

**RESULTS:**

Out of 3145 charts were screened, 102 (3.30%) satisfied diagnosis of Alcohol dependence Syndrome of which 100 (96.2%) were male and 2 (3.8%) were female ADS. All these 2 women with alcohol dependence syndrome had co-morbid depression and interestingly lost to follow up with in first 2 weeks.



**Demographic characteristics:**

The consecutive sample consists of hundred men (96.2%) with a mean age of 30.06 (6.5) Sixty percentage of males ADS were hailing from middle socio economic condition where as 4% from upper and 36% from the lower socio economic background. Out of 100 subjects, 76% were married and wife were the primary caregiver and the rest 24% were either single or separated and divorced and mothers are the primary care giver.

The prevalence of alcohol dependence syndrome in the hospital setting was found to be 3.2%

As far as educational status is concerned 18% were in the primary education, 50% had reached up to high school and the rest 32% had college and post graduation education. When the educational status of the spouse or the significant care giver was compared to that of the patient, 62% had less educational achievement while rest 38% spouses were either the equally or more academically educated.

**Clinical characteristics:**

45% of the patients had family history of ADS and related morbidity and mortality in their first degree relatives as compared to 55% who did not have positive family history. 28% of the population had presented with complicated withdrawal state characterized by either delirium, perceptual disturbance or seizures while the rest of subjected presented

in uncomplicated state of withdrawal. Out of 100 male with ADS 23 had other axis I diagnosis (depression/ schizophrenia/ anxiety disorder) and 38% had at least one more substance dependence.

**Intervention characteristics:**

Seventy five percentage patients had given out patient or brief acute care intervention during the detoxification stage followed by out patient de-addiction management. The rest of 25 % were give both detoxification as well as de-addiction phase as in-patient basis. Out of 100 subjects , 34% received psychotherapy and 20% received disulfiram therapy during their de-addiction stage of interventions.

There was no statistical difference between the good outcome group (n=37) and poor outcome group (n=63) when compared on the basis of age on onset of alcohol abuse, distant from the hospital, educational background and religion. However the spouse education as compared to the patient (p=0.0001), in patient admission (p=.0020), psychotherapy session (p=.0001), use of disulfiram (p=.0001) were the predictors of good outcome.

However, the group which had received no kind of psychological intervention higher risk of relapsing and becoming poor outcome in comparison to the group receiving psychological intervention, (OR 8.58; 95% CI 2.8-26.23; P =.04) (Table 2)

On comparing patient who received in patient management and who managed as op basis with respective to quality of outcome at the end of the study period, no statistically significant difference was seen. (OR 3.9; 95% CI: 1.59-9.53; P 0.03)

Among all subjects the group which received Disulfiram was significantly related to better outcome as compared to the group managed without disulfiram. (OR 8.2; 95% CI: 3.27-20.83, P=.03) (Table 2)

Table 1

Variables	% Of total	% Of good adherence	%of poor adherence	X2/ f	df	p
F/ h present Yes	45	23	22	5.089	1	.024
No	55	14	41			
Uncompl. Withdrawal	72	26	46	.621	1	.655
C W/ Sz or Delirium	28	11	17			
Comorbid axis II No	77	26	51	.988	1	.343
Yes	23	11	12			
Other substance abuse Yes	38	15	23	.384	1	0.674
No	62	22	40			
Comorbid axis III Yes	39	17	22	1.689	1	0.214
NO	61	20	41			
Modality first sought for Yes	43	17	26	1.528	1	0.152
NO	57	20	37			

	Variables	% of total	% Of good adherenc	% Of poor adheren	Odds ratio with 95% CI	Adjusted odd ratio c 95% CI
<b>1</b>	<b>Treatment modality</b>				<b>.385</b>	<b>3.60 (1.45-8.92)</b>
	<b>Op/ ACI</b>	<b>75</b>	<b>19</b>	<b>56</b>	<b>3.90(1.59-9.53)</b>	
	<b>In-Patient</b>	<b>25</b>	<b>18</b>	<b>7</b>		
<b>2</b>	<b>Psychotherapy</b>				<b>8.58 (2.81-26.23)</b>	<b>7.67(2.45-24.41)</b>
	<b>Done</b>	<b>34</b>	<b>24</b>	<b>10</b>	<b>.043</b>	
	<b>Not done</b>	<b>66</b>	<b>13</b>	<b>53</b>		
<b>3</b>	<b>Disulfiram</b>				<b>8.2(3.27-20.83)</b>	<b>8.17(3.14-21.27)</b>
	<b>Given</b>	<b>20</b>	<b>16</b>	<b>4</b>	<b>.032</b>	
	<b>Not given</b>	<b>80</b>	<b>21</b>	<b>59</b>		

## DISCUSSION:

We conducted this retrospective cohort study on consecutive patients who had registered under department of psychiatry with ICD 10 diagnosis of ADS. We assessed the detailed demographic profile, clinical profile, medical and other psychiatric morbidity from the chart. The subjects were divided into good outcome and poor outcome groups. The good outcome ones were with minimum 3 months of abstinent, compliant for follow up care and with few lapses. The prevalence of male ADS in tertiary set up and social, clinical as well as the intervention related factors were assessed and compared with good-poor outcome groups.

As per our study the prevalence of Ads in a tertiary care medical college set up was 3.18%. This is comparable to the findings of national survey report 2000 (2).

Out of all demographic factors, wife's education as compared to patient's educational status is  $p .03$  OR CI 5.01(2.1-11.9) significant in the good adherent group. Factors like patients educational status, SES, religion, distant from MHC did not come as significant. Demographic factors which are not addressed in this study are details about the job status, whether patient hails from rural or urban background. Number of children and their education, in case of single who is the primary care giver and what is the educational status of the care giver.

Family history of ADS and other mental illness in 1<sup>st</sup> degree relatives make the client to seek help or the relatives to bring for deaddiction programme and the odd of patients being brought for the deaddiction treatment is two time higher as compared to the group without family history of mental



illness in the 1<sup>st</sup> degree relatives. The group with co morbid axis I diagnosis has better adherence with deaddiction programme and better follow up as compare to the group without co morbid axis I diagnosis p.04OR CI 5.311 (1.916-14.12)

Baltieri et al (2009) focused on study type of beverages preferentially consumed by ADS their effect severity of dependence and on therapeutic outcome. These patients were divided in three arms to receive topiramate upto 300mg/day, Naltrexone 50mg/day and the placebo. There were no significant differences between groups of treatment modality in relation to the time to first relapse and cumulative abstinence duration.

The group of spirit drinker not only showed the higher severity of dependence also reported higher craving, repeated treatment failure and frequent hospitalization and poor adherence to either of the treatment arm as compared to the group of beer drinkers(7).

In a study closer to the real-world situation from Mumbai, 100 patients with alcohol dependence with stable families were randomized to receive disulfiram or topiramate. At the end of nine months, though patients on topiramate had less craving, a greater proportion of patients on disulfiram were abstinent (90% vs. 56%). Patients in the disulfiram group also had a longer time to their first drink and relapse.<sup>1</sup> Similar studies by the same authors and with similar

methodology had earlier found that disulfiram was superior to acamprosate and Naltrexone. Though the study lacked blinding, it had an impressively low (8%) dropout rate. A chart based review has shown there was no significant difference with regard to abstinence among the patients prescribed acamprosate, naltrexone or no drugs. Although patients on acamprosate had significantly better functioning, lack of randomization and variations in base line selection parameters may have influenced these findings.

*Brown et al* indicated treatment is better than no treatment and no consistent support for superiority of any single treatment (8). In our study significant period of follow up is observed in the group who received in-patient management (p=.002), Disulfiram therapy (p=.0001) or psychotherapy (p=.0001) or combination of these three. This study has limitations as it has not taken patient on naltrexone and topiramte because of sporadic use of the above mentioned drugs in our tertiary care center.

Alcohol related problem is complex and heterogeneous. Bio-psycho-social approach is required to handle this problem. Individual motivation, wife's education-awareness-empowerment, multimodal treatment approaches would provide some kind of solution in current scenario. Moreover policy level modification and strict implementation can bring considerable change in addictive behavior of community



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