Neurological Disorders

NU et al., J Neurol Disord 2015, S:2
DOI: 10.4172/2329-6895.S2-003

Research Article Open Access

The Study of Use of Obsessive – Compulsive Drinking Scale, for Craving in Alcohol-Dependent Patients: Relationship to Alcoholism Severity

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Abstract

Background: Many clinicians and researchers believe that "craving" an abusable substance is a central phenomenon related to addiction. Craving for alcohol appears to be intimately related to the loss of control over consumption and to compulsive alcohol use.

Aim: To compare the scores of obsessive compulsive drinking scale with visual analogue scale, severity of alcohol dependence questionnaire and addiction severity index.

Materials and Methods: Literate patients who met DCR-ICD-10 criteria for alcohol dependence syndrome were taken in the study and they must have been drinking alcohol daily till 1 week ago and the subjects were required to consume at least 6 standard drinks per day over the last month. Instruments used in this study were Obsessive Compulsive Drinking Scale– OCDS, Severity of Alcohol Dependence Questionnaire– SADQ, Addiction Severity Index–ASI, Visual Analogue Scale– VAS, Mini Mental Status Examination– MMSE, Timeline Method– TL

Results: Among 40 patients, the mean age of these patients was 38 yrs (38.55 ± 9.60). 95% of them were Hindus and 5% christians. 82.5% were married. And 50% of patients has the income between Rs.15000-20000 per month. The correlation matrix of OCDS variables (OCDS-T,OCDS-O,OCDS-C),ASI-A,SADQ,VAS variables (G,F,I) and TL on all four follow-ups were measured. All correlations were positive and significant at $p<0.001$. Obsessive compulsive drinking scale total score in 2 drinking outcome groups during 8 week treatment period was seen in which there is a difference between in two patient groups at baseline i.e., abstinent group had lower score than relapse group. This difference was consistently observed between the groups over the entire period of follow-up.

Conclusion: Craving was higher among those who relapsed than those who did not. Craving did predict high alcohol consumption and high index of severity at baseline and all through the follow up.

Keywords: Alcoholic patients; Craving; Obsessive compulsive drinking scale; Alcoholism severity

Introduction

Untill recently alcoholism was regarded as an incurable psychological problem. During the last decade a chain of research has led to important hypothesis about the etiology of the physical craving of alcohol.

Many clinicians and researchers believe that "craving" an abusable substance is a central phenomenon related to addiction. Craving for alcohol appears to be intimately related to the loss of control over consumption and to compulsive alcohol use. Although craving is taken in to account in the criteria of alcohol dependence syndrome in the International Classification of Disease, Tenth Revision [1-3]. It is not explicity mentioned in the DSM-IV, (APA, 1994) which does consider the inability to cut down or control alcohol consumption a core feature of alcohol dependence syndrome.

Despite wide clinical recognition and mention in the literature, craving remains ill-defined and its measurements non-specific. For instance although it is recognized that craving and its broad manifestations should be measured in alcoholism pharmacotherapy trials, most studies have used a simple visual analogue scale to quantify craving, which leaves the interpretation to the patient. Several studies have indicated that the meaning of craving differs among substance-dependent individuals and professional caregivers. The multi-dimentionality of craving could explain this discrepancy.

The 14 item obsessive compulsive drinking scale (OCDS) is a quick and reliable self-rating instrument that provides a total and two subscale scores that measure some cognitive aspects of alcohol craving. There is a need to translate and validate this scale in different languages, so that "craving" which is an important concept in diagnosis and treatment of alcohol dependence syndrome could be identified. This scale will enable the therapist to use standard (e.g., naltrexone) pharmacological tools to assist the alcohol addict to modify craving and to become engaged in programmes of social and psychiatric treatment [4-6].

Aim

1. To compare the scores of obsessive compulsive drinking scale with visual analogue scale.
2. To compare the scores of obsessive compulsive drinking scale with severity of alcohol dependence questionnaire and addiction severity index.

Materials and Methods

Sample

Literate patients admitted to inpatient psychiatry ward for treatment of alcoholism in guntur district.

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Received June 30, 2015; **Accepted** September 17, 2015; **Published** September 20, 2015

Citation: Jyothi NU, Ali SF, Bollu M (2015) The Study of Use of Obsessive–Compulsive Drinking Scale, for Craving in Alcohol-Dependent Patients: Relationship to Alcoholism Severity. J Neurol Disord S2: 003. doi:10.4172/2329-6895.S2-003

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Inclusion criteria

1. Subject must have met DCR-ICD-10 (International Classification of Diseases, 10th edition-Diagnostic criteria for research, WHO, 1993) criteria for alcohol dependence syndrome.
2. Patients must have been drinking alcohol daily till 1 week ago (should not be have been dry for more than 1 week before admission).
3. Patients were required to consume at least 6 standard drinks per day over the last month.

Standard drink according to SCAN

1 Standard drink = 25 ml spirit = 8-12 gm alcohol

= 260 ml Beer

= 120 ml wine

4. Presence of a reliable informant was deemed necessary.
5. Subjects must be literate and able to study and understand english.

Exclusion criteria

1. Presence of history of concurrent drug abuse.
2. Concurrent Axis 1 diagnosis and drug treatment for any mental illness. Co-morbidity was ruled out by a SCAN aided interview.
3. Presence of serious medical illness including organic brain syndrome.

Instruments

1. Obsessive – Compulsive Drinking Scale – OCDS
2. Severity of Alcohol Dependence Questionnaire – SADQ
3. Addiction Severity Index – ASI :
4. Visual Analogue Scale – VAS
5. Mini Mental Status Examination – MMSE:
6. Timeline Method : TL

Details of above scales are given in the review of literature.

Assessment

All the patients who could read were approached within 7 days of last drink with a view to include them in the study. Every patient along with a responsible relative was explained the purpose of the interview. An informed consent was taken from the patients who agreed to participate in the study and they were accepted for further assessment in the following sequence.

Baseline evaluation was conducted within 7 days of abstinence. MMSE was administered. A cut off score of 24 was used. Patients who scored less than 24 were dropped from study [7-10].

Sociodemographic data

Age, education, occupation, income, religion and marital status were collected using a semi structured interview schedule.

Associated physical or psychiatric comorbidity

It was ruled out by detailed interview and clinical examination [11-14].

Severity of alcohol dependence questionnaire (SADQ)

SADQ was administered to the patient in order to measure severity of dependence. Respondents were instructed to focus on their most recent period of heavy drinking, that was also typical of their heavy drinking. English scale is used for patients. However, patients were clarified and explained about the items which found difficult to understand.

Addiction severity index (ASI)

Seven areas of alcohol related problems were assessed with ASI. The guidelines given in the manual of ASI 5th edition were strictly followed. However no translated version was available and interview was conducted from the original English version [15-17].

Certain Guidelines that were Followed during the ASI Interviews are Mentioned here

It was briefly stated to the patient that some questions regarding alcohol related problems if any were going to be asked. It was also added that the responses to the questions were to be kept completely confidential.

The design of the interview was described, stressing the 7 potential problem areas, i.e., medical, employment/support, drug and alcohol, legal, family/social and psychiatric status.

An explanation of the patient rating scale was given and an example was offered to test the understanding of the patient. As the focus of the interview proceeded from one area to the next, each new section was introduced and patient's focus from previous areas was changed [18-21].

During the administration of ASI, ample opportunity was given for clarification of questions and responses and it was attempted to make sure that intent of each question was clear to the patient.

Patients' misrepresentation or inability to understand was judged on the confidence ratings with record of an explanatory note. The severity rating on ASI was converted to composite scores according to formulae given in the manual.

MEDICAL: A/90 +B/12 +C/12

EMPLOYEMENT: 1.000-(A/4 + B/4 + C/120 + Log D/36)

ALCOHOL: A/180 + B/180 + C/180 + D24 + E/24 + Log F/44

LEGAL: A/5 + B/150 + C/20 + D/20 + Log E/46

FAMILY: A/10 + B/150 + C/20 + D/20 + Ratio/5

PSYCHIATRIC: A/11 + B/11 + C/11 + D/11 + E/11 + F/11 + G/11 + H/11 + I/330 + J/44 + K/44.

Visual analogue scale was used to assess craving

3 types of analogue scales were used. They are global, frequency, intensity.

10 cm scale was divided by 1 cm hatch marks and patients were asked to place a mark anywhere on the line that best described their craving in the past week. The distance from the lower anchored end to the patient's mark was measured in millimeters and used for scoring [22,23].

The global analogue scale, which stated "the amount of my craving for alcohol" was anchored at one end "very little" and at the other "a great deal". The frequency analogue scale, which stated "my craving for

alcohol happened", was anchored at one end "rarely" and at the other "almost all the time". The intensity analogue scale, which stated "The intensity of my craving for alcohol was anchored at one end "none" and at the other "irresistible".

Obsessive compulsive drinking scale (OCDS): craving was further assessed using OCDS. Subjects were instructed to rate the OCDS for the last week of drinking. English version was used. However, the items were clarified and explained to the patient whenever required.

Time line method: recent alcohol consumption was measured using timeline method. Subjects were asked to recall as accurately as possible their daily drinking behaviour over the 90 days period prior to the date of their most recent drink of alcohol (use of such an interval has been suggested by polich et al, 1981). The amount of alcohol consumed was converted to grams according to 25 ml spirit/260 ml beer/120 ml wine is equal to 8-12 grams of alcohol which was called standard drink.

Following the initial assessment the patients were treated with 100-150 mg of chlordiazepoxide and vitamin B complex medication daily. Detoxification was followed by disulfiram therapy, behaviour therapy (in the form of 10 sessions of electrical aversion therapy) and group therapy. Equal number of sessions was conducted for all patients.

Follow-up Assessment

Patients craving was reassessed by 3 scales of VAS and OCDS. The amount of alcohol consumption was measured by time line method. In this way patients were assessed once in 2 weeks for a total 8 weeks following discharge. At each visit, VAS, OCDS and TL method were administered.

Analysis

At the end of the study patients were divided into 2 groups

1. Abstinent
2. Relapsers

Subjects were consumed 2 or more standard drinks for 2 consecutive days any time in the 2 weeks period were noted in relapse group.

Ethical aspects

All the patients were clearly explained the purpose of study and then informed consent was taken. It was also stated to the patient that exclusion or inclusion in the study was no way related to the treatment or the outcome of the condition for which the patient was admitted.

Results

58 patients were approached in psychiatric inpatient wards. 2 patients refused to participate in study, 5 were in delirium at the time of admission, 4 subjects were not able to read and write, 2 patients could not be treated with Disulfiram because of psychiatric illness. Finally 5 patients did not come regularly for followup. Thus 18 patients could not be included in the study (Figures 1-11).

Tables 1-5 shows the socio-demographic data of 40 patients. The mean age of these patients was 38 yrs (38.55 ± 9.60). 95% of them were Hindus and 5% christians. 82.5% were married.

The income of 50% of patients was Rs.15000-20000 per month. 35% had the income of above Rs.20000 per month.15% Have the income of less than 15000 per month.

N=40, AGE**:** Mean age in yrs 38.55**,** Standard deviation ± 9.60.

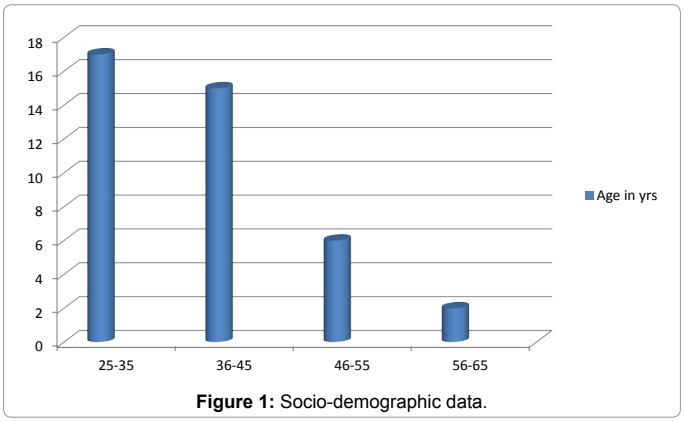

Figure 1: Socio-demographic data.

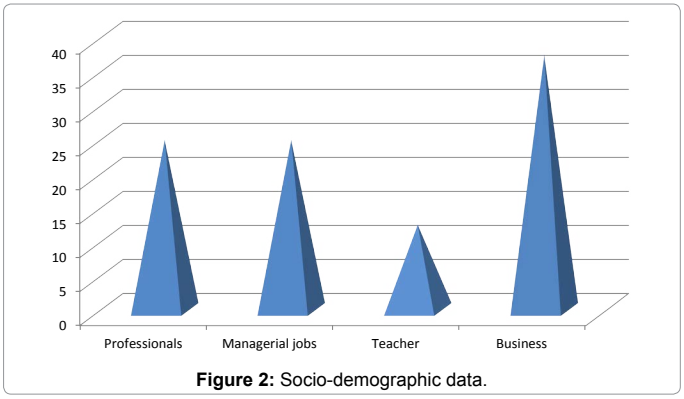

Figure 2: Socio-demographic data.

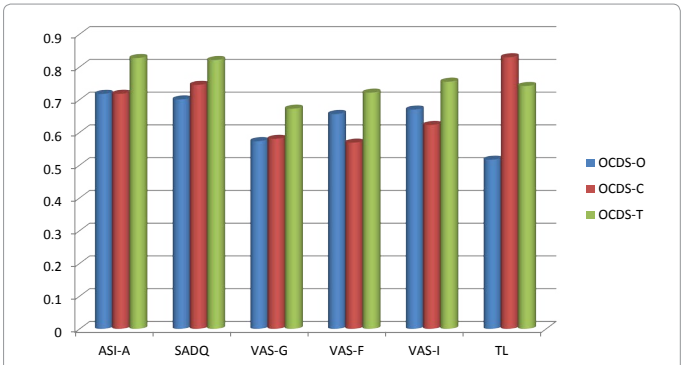

Figure 3: The correlation matrix of OCDS variables (OCDS-T,OCDS-O,OCDS-C),ASI-A,SADQ,VAS variables(G,F,I) and TL on all four follow-ups is shown in Table 3. All correlations are positive and significant at $p<0.001$.

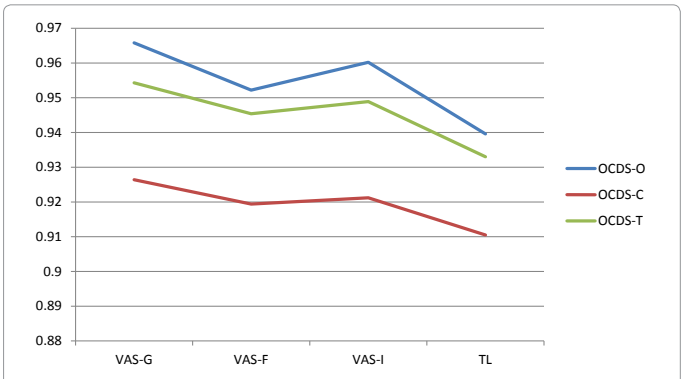

Figure 4: Pearsons product moment correlations (I Follow Up).

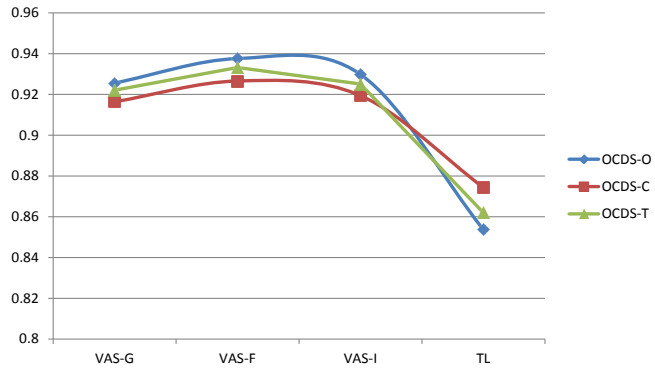

Figure 5: Pearsons product moment correlations (II Follow Up).

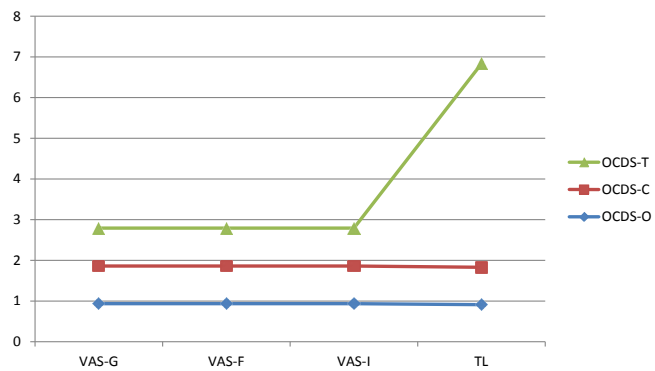

Figure 6: Pearsons product moment correlations (III Follow Up).

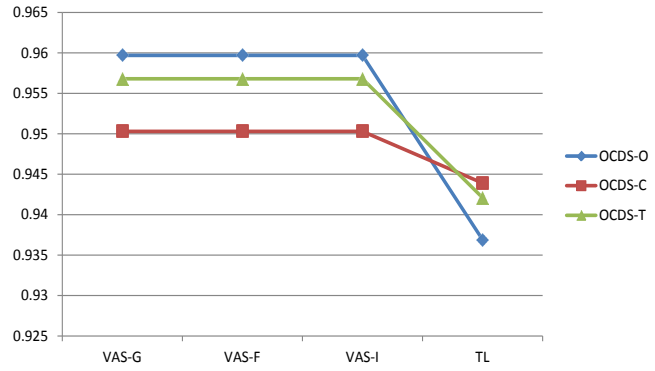

Figure 7: Pearson's product moment correlations (IV Follow Up).

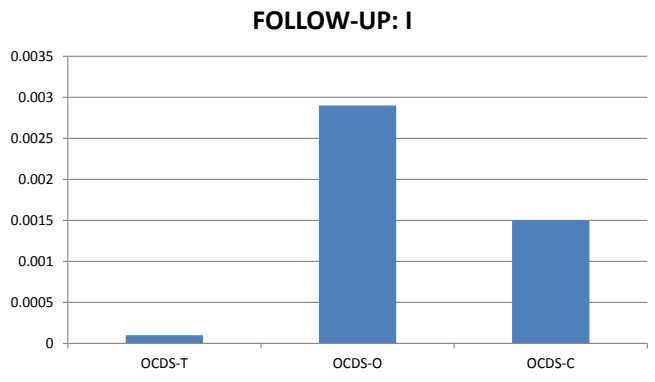

Figure 8: Multiple Regression Analysis (I Follow Up).

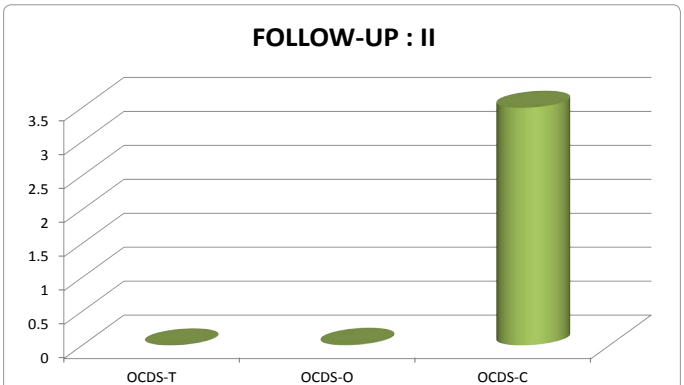

Figure 9: Multiple Regression Analysis (II Follow Up).

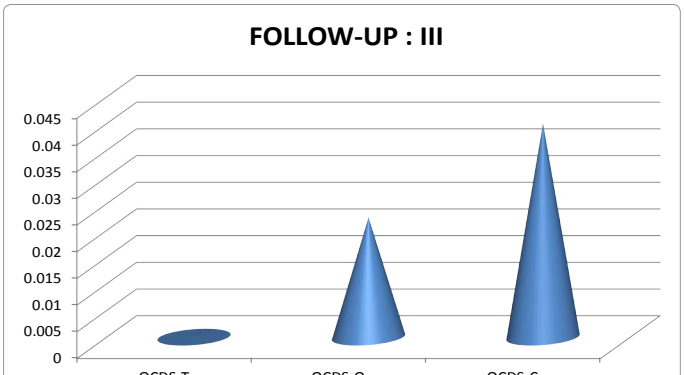

Figure 10: Multiple Regression Analysis (III Follow Up).

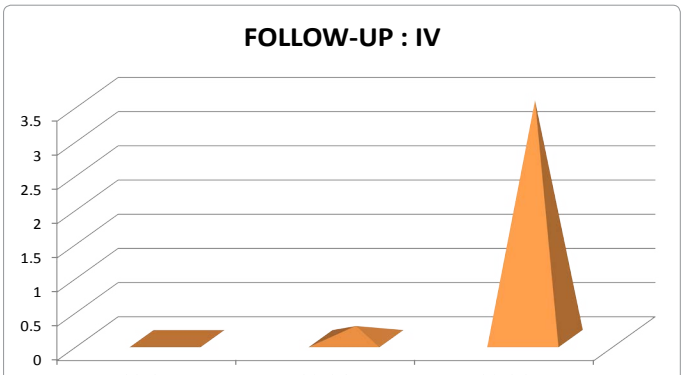

Figure 11: Multiple Regression Analysis (IV Follow Up).

In order to explore relationship between different variables, pearsons product moment correlations were conducted. Tables 6-10 shows correlation matrix of OCDS variables (OCDS-T,OCDS-O,OCDS-C),ASI-A,SADQ,VAS variables (G,F,I) and TL. The variables positively correlate with each other at $p<0.001$ suggesting significant correlation.

The correlation matrix of OCDS variables (OCDS-T,OCDS-O,OCDS-C),ASI-A,SADQ,VAS variables (G,F,I) and TL on all four follow-ups is shown in Table 6. All correlations are positive and significant at $p<0.001$.

Discussion

On methodology

Despite wide clinical recognition and mention in the literature,

measurement of craving has remained non- specific. This is also because of various definitions given by different researchers. Our study was focused to measure craving and prediction of outcome in our subjects by measuring craving as an obsessive compulsive phenomenon.

Many rating instruments are present to assess the severity of alcohol dependence syndrome and associated complications. But till recently, craving was measured only by visual analogue scale in majority of studies. In present study, obsessive compulsive drinking scale was used to measure craving. In this study english version was used as educated patients were taken as sample.

Age in Yrs	N	Percentage
25-35	17	42.5
36-45	15	37.5
46-55	6	15
56-65	2	5

Table 1: Socio-demographic data.

Religion	N	Percentage
Hindu	38	95
Christian	2	5

Table 2: Socio-demographic data.

Marital Status	n	Percentage
Married	33	82.5
Unmarried	7	17.5

Table 3: Socio-demographic data.

Occupation	N	Percentage
Professionals	10	25
Managerial jobs	10	25
Teacher	5	12.5
Business	15	37.5

Table 4: Socio-demographic data.

Income	n	Percentage
<15000	6	15
15000-20,000	20	50
>20000	14	35

Table 5: Socio-demographic data.

Pearsons product moment correlations			
	'r' values		
	OCDS-O	OCDS-C	OCDS-T
ASI-A	0.7179**	0.7182**	0.8274**
SADQ	0.7010**	0.7455**	0.8212**
VAS-G	0.5738**	0.5807**	0.6728**
VAS-F	0.6566**	0.5691**	0.7217**
VAS-I	0.6701**	0.6231**	0.7552**
TL	0.5171**	0.8299**	0.7422**

p value * 0.01; ** 0.001

Table 6: Comparision between OCDS (Total and Subscale) Scores with other variations.

Pearsons product moment correlations			
I follow up	'r' values		
	OCDS-O	OCDS-C	OCDS-T
VAS-G	0.9658**	0.9264**	0.9543**
VAS-F	0.9522**	0.9194**	0.9454**
VAS-I	0.9602**	0.9212**	0.9489**
TL	0.9396**	0.9105**	0.9330**

p value * 0.01; ** 0.001

Table 7: Comparision between OCDS (Total and Subscale) Scores with other variations (I Follow Up).

Pearsons product moment correlations			
II follow up	'r' values		
	OCDS-O	OCDS-C	OCDS-T
VAS-G	0.9256**	0.9164**	0.9221**
VAS-F	0.9376**	0.9266**	0.9332**
VAS-I	0.9298**	0.9194**	0.9251**
TL	0.8536**	0.8743**	0.8619**

p value * 0.01; ** 0.001.

Table 8: Comparision between OCDS (Total and Subscale) Scores with other variations (II Follow Up).

Pearsons product moment correlations			
III follow up	'r' values		
	OCDS-O	OCDS-C	OCDS-T
VAS-G	0.9366**	0.9249**	0.9316**
VAS-F	0.9366**	0.9249**	0.9316**
VAS-I	0.9366**	0.9249**	0.9316**
TL	0.9123**	0.9185**	0.9161**

p value * 0.01; ** 0.001.

Table 9: Comparision between OCDS (Total and Subscale) Scores with other variations (III Follow Up).

Pearson's product moment correlations			
IV Follow Up	'r' values		
	OCDS-O	OCDS-C	OCDS-T
VAS-G	0.9597**	0.9503**	0.9568**
VAS-F	0.9597**	0.9503**	0.9568**
VAS-I	0.9597**	0.9503**	0.9568**
TL	0.9369**	0.9439**	0.9421**

p value * 0.01; ** 0.001.

Table 10: Comparision between OCDS (Total and Subscale) Scores with other variations (IV Follow Up).

In this study the subjects reported on their own or brought by family members for treatment of alcohol dependence syndrome. Written informed consent was obtained from the subjects recruited in the study.

Those who were consuming alcohols regularly till recently were included in the study. Those who were abstinent for more than a week were excluded. This allowed us in assessing the current experience of craving in our subjects. Moreover, all expect one patient were treatment native at intake. This means there was no influence of craving among our patients.

Patients were required to drink 6 standard drinks of alcohol over the last 1 month. This is to ensure pathological pattern of drinking by the criteria of amount of consumption. This could mean that presumably significant craving will have been experienced in those individuals who consumed high amounts of alcohol.

The exclusion was set in order to select a highly homogeneous sample without any other substance use or comorbidity. This was likely to have ensured of craving solely for alcohol.

We used reliable and valid instruments to measure various aspects of alcohol dependence syndrome and against which the validity of OCDS was determined.

Severity of alcohol dependence was measured by 2 types of instruments

SADQ – SADQ found to be reliable and valid instrument to measure severity of alcohol dependence (Stockwell et al, 1979).

ASI – ASI has been shown to be reliable and valid among substance abusers undergoing treatment (Fureman et al, 1990).

The amount of alcohol consumption was measured by timeline method – the reliability and validity of this procedure has been established with several different populations of alcohol abusers (Sobell et al, 1988).

Craving was assessed on OCDS and Visual Analogue Scale – VAS was broken into 3 components to increase reliability.

Patients were assessed initially during detoxification, later on follow-up every 2 weekly for 8 weeks in order to determine how the experience of craving change over time and in relation to alcohol consumption.

In a previous study (Anton et al, 1996) weekly follow-up for 12 weeks was conducted. But in our study because of subject's financial constraints and distance, followup done by weekly for 8 weeks.

On results

Most of our subjects are around 40 yrs and there is no significant difference between 2 groups regarding age. Majority of them are married and were job holders or businessman. In study by Anton et al 1996, patients were mostly (middle aged 42-45 yrs), married men who had, on average, several years of post-secondary education.

Table 2 shows the correlation variables between the various scores of OCDS and scores on ASI, SADQ, VAS (Global, Frequency, Intensity) and amount of consumption of alcohol in gms by TL method. The results show that among the entire group of the patients the variables are positively correlated ($p<0.001$) among each other.

This means that at baseline higher the score on dependence severity (ASI and SADQ). This also indicates that at baseline higher the OCDS scores, higher were measurement of subjective craving and amount of alcohol consumption. The significant positive correlation between the scores craving measured by OCDS and VAS supports concurrent version of OCDS.

In another study (Modell et al 1992) on 62 subjects craving was measured by using YBOCS – hd and found highly significant correlations between subjectively rated craving for alcoholic beverages and several of the YBOCS-hd questions regarding alcohol related thoughts and drinking behaviour. Moreover, that the score of craving measured correlated with other variables of alcoholism eg., amount of alcohol consumption,

severity of dependence syndrome which invariably support construct validity of the concept of craving as an obsessive compulsive phenomenon.

Anton et al 1996 reported, that the OCDS scores were significantly correlated with ASI- Alcohol composite score, but the total score and obsessive subscales were highly correlated than the compulsive sub scale scores. Compulsive drinking subscales highly correlated to the frequency of craving on VAS than the obsessive subscale or other components of VAS. Despite being significant, the correlation between amount of alcohol consumed in the week before intake to the study and the OCDS total score was not strong.

Correlation tables of the variables during 1st, 2nd, 3rd, 4th follow ups are shown in Table 3. There is a clear evidence of positive correlation among all the variables, over all four follow ups of all the 40 individuals. This supports the hypothesis that persistence of high craving could be associated with higher subjective rating as well as high alcohol consumption on follow up.

During follow up the patients were divided into abstinent (group 1) and relapsers (group 2). Relapsers group consisted of those subjects who consumed 2 or more standard drinks for 2 consecutive days any time in the 2 weeks period (Anton et al 1996). Our study consists of 29 subjects in abstinent group, 11 in relapse group. In previous study (Anton et al 1996) subjects were divided into 3 groups, abstinent, slip and relapse.

In our study, abstinent and relapsers were compared at baseline. It was observed that they did not differ on socio-demographic variables. However, the relapsers were significantly different from the abstainers on all the clinical variables. Relapsers rated high on ASI, SADQ, VAS, OCDS and also consumed higher amount of alcohol than those who remained abstinent. This means that although the two groups belonged to the similar sociodemographic strata, they were different on all the measures of alcoholism including craving.

In earlier study by Anton et al 1996 reported no significant difference between sociodemographic characters or scores on different scales between 3 groups at baseline.

Table 5 shows that the difference between two groups persisted on all four follow ups in OCDS scores.

The patients who relapsed in our study sis rate consistently higher scores (p <0.05) (not only over 1 or 2 follow ups) than those who did not, throughout the 8 week followup period. To what extent this helps us to use craving as a obsessive compulsive phenomenon to study and predict relapse need to be addressed and explored in future studies.

Table 11-15 shows comparision between group I and group II on OCDS scores (total and subscale) over 4 follow-ups. It is observed that these groups are significantly (p <0.001) discriminated on the basis of craving scores as measured on OCDS scale on first, second and third follow-up. In the fourth followup group-I (abstinent) didn't have any score on OCDS scale. So student t test could not be administered.

All groups had a reduction in score during the course of treatment in previous study (Anton et al 1996). At baseline and week 1 there was no difference between patients groups. However, in weeks 2 to 12, there was a significant difference in the total OCDS score between abstinent patients and who slipped or relapsed. In general, after week 7 the slip and relapsed groups also significantly differed from each other. Patients who relapsed had higher OCDS total scores than those who maintained continual abstinence.

Table 16 in our study shows that ASI and TL value predicted the outcome of subjects at baseline when regressed on OCDS scores. Amount of consumption had a bearing on degree of craving. When regression analysis done using OCDS scores as independent variable, showed same significance.

Table 17 indicates TL value predicted only the OCDS total scores but not subscale scores on followup.

Taken together, these findings suggest that OCDS scores and TL values at entry and follow-up are interrelated and patients who report high score on any one index may be more likely to report high scores on the other. Such patients would essentially be a group who relapse on followup. This indicates high predictive validity of OCDS scale.

Limitations of study

Our study had a rather small sample size (N=40). A larger sample could have strengthened the results.

We followed the patients for 8 weeks. This was done due to certain practical difficulties. It is suggested that long period of follow-up would have shown the change in craving and outcome.

	GROUP-I	GROUP-II		
Age	38.83 ± 8.46	37.82 ± 12.58	p 0.77	NS
Married/Unmarried	24	8	p 0.62	NS
ASI-A	0.42 ± 0.09	0.79 ± 0.07	p<0.0001	S
VAS-G	6.41 ± 1.30	8.73 ± 0.47	p<0.0001	S
VAS-F	6.14 ± 1.06	8.73 ± 0.47	p<0.0001	S
VAS-I	6.17 ± 1.07	8.73 ± 0.47	p<0.0001	S
SADQ	34.34 ± 2.29	45.18 ± 2.86	p<0.001	S
OCDS-O	8.48 ± 2.21	17.36 ± 4.37	p<0.0001	S
OCDS-C	8.48 ± 2.76	15.73± 4.05	p<0.0001	S
OCDS-T	16.97 ± 4.44	34.91 ± 3.21	p<0.0001	S
TL	6.52 ± 0.78	8.18 ± 0.98	p<0.001	S

Note: GROUP-I-ABSTINENT-29
GROUP-II-RELAPSERS-11
*Chi square test used; all other variables – student 't'test used; NS-not significant; S-significant

Table 11: Shows comparision between patients who were abstinent (group-I) and those relapsed (group-II).29 subjects were in group-I and 11 subjects in group-II, appropriate statistical tests were administered to compare the groups.
The groups were not different in socio-demographic data (age, education and marital status). However, the patients who ultimately relapsed had consistently higher scores on all the clinical variables (OCDS-T,OCDS-O,OCDS-C,ASI,SADQ,VAS variables(G,F,I) than those who remained dry.

I Follow-Up (Student 't' test used)		
OCDS-O-1	MEAN	SD
GROUP-1	0.8966	1.52
GROUP-2	8.5444	5.087
		DF 10.68
		p value 0.0001
OCDS-C-1	MEAN	SD
GROUP-1	0.7931	1.521
GROUP-2	8.3636	4.388
		DF 10.92
		p value 0.0001
OCDS-T-1	MEAN	SD
GROUP-1	1.6897	2.953
GROUP-2	16.9091	9.311
		DF 10.77
		p value 0.001

Table 12: Shows comparision between group I and group II on OCDS scores (total and subscale) over 4 follow-ups. It is observed that these groups are significantly (p<0.001) discriminated on the basis of craving scores as measured on OCDS scale on first, second and third follow-up. In the fourth followup group-I (abstinent) didn't have any score on OCDS scale .so student t test could not be administered (I Follow Up).

II Follow-Up (Student 't' test used)		
OCDS-O-2	MEAN	SD
GROUP-1	0.5517	1.021
GROUP-2	7	4.472
		DF 10.40
		p value 0.001
OCDS-C-2	MEAN	SD
GROUP-1	0.4828	0.871
GROUP-2	7.1818	4.996
		DF 10.23
		p value 0.001
OCDS-T-2	MEAN	SD
GROUP-1	1	1.871
GROUP-2	14.1818	9.432
		DF 10.30
		p value 0.001

Table 13: Shows comparision between group I and group II on OCDS scores (total and subscale) over 4 follow-ups. It is observed that these groups are significantly (p<0.001) discriminated on the basis of craving scores as measured on OCDS scale on first, second and third follow-up. In the fourth followup group-I (abstinent) didn't have any score on OCDS scale .so student t test could not be administered (II Follow Up).

III Follow-Up(Student 't' test used)		
OCDS-O-3	MEAN	SD
GROUP-1	0.1034	0.31
GROUP-2	4.0909	5.3
		DF 10.03
		p value 0.032
OCDS-C-3	MEAN	SD
GROUP-1	0.069	0.258
GROUP-2	3.9091	5.338
		DF 10.02
		p value 0.038
OCDS-T-3	MEAN	SD
GROUP-1	0.1724	0.539
GROUP-2	8	10.63
		DF 10.02
		p value 0.035

Table 14: Shows comparison between group I and group II on OCDS scores (total and subscale) over 4 follow-ups.it is observed that these groups are significantly (p<0.001) discriminated on the basis of craving scores as measured on OCDS scale on first, second and third follow-up.in the fourth follow up group-I (abstinent) didn't have any score on OCDS scale .so student t test could not be administered (III Follow Up).

IV FOLLOW-UP (student 't' test could not be used, as there is no score in group 1)		
OCDS-O-4	MEAN	SD
GROUP-1	0	0
GROUP-2	5.2727	6.342
OCDS-C-4	MEAN	SD
GROUP-1	0	0
GROUP-2	5.0909	6.024
OCDS-T-4	MEAN	SD
GROUP-1	0	0
GROUP-2	10.3636	12.331

Data shows obsessive compulsive drinking scale total score in 2 drinking outcome groups during 8 week treatment period. There is a difference between in two patient groups at baseline i.e., abstinent group had lower score than relapse group. This difference was consistently observed between the groups over the entire period of follow-up.
Similar trend was observed for the obsessive and compulsive subscale scores of the two groups i.e., there was a significant difference at baseline that was consistently maintained over the follow-up.
In order to identify the variables that predict outcome at entry or on follow-up,

stepwise multiple regression analysis were carried out with each of three OCDS scores (total, obsessive, compulsive) as the dependent variables. To predict outcome at entry age, education, SADQ score, ASI-Alcohol composite score, TL value(independent variables) were regressed on to the OCDS total and subscale scores at baseline and four follow-ups.

Table 15: Shows comparison between group I and group II on OCDS scores (total and subscale) over 4 follow-ups.it is observed that these groups are significantly (p<0.001) discriminated on the basis of craving scores as measured on OCDS scale on first, second and third follow-up.in the fourth followup group-I (abstinent) didn't have any score on OCDS scale. so student t test could not be administered (IV Follow Up).

MULTIPLE REGRESSION ANALYSIS (BASELINE)
I
a) Dependent variable: OCDS-T
't' values
ASI-A 0.00001
TL 0.0105
Age, Edu, SADQ-not significant
b) Dependent variable: OCDS-O
't' values
TL 0.0001
Age, Edu, SADQ, ASI-A-not significant
c) Dependent variable: OCDS-C
't' values
TL 0.0013
Age, Edu, SADQ, ASI-A-not significant
II
a) Dependent variable: ASI-A, SADQ, TL
independent variable: OCDS-T
't' values 0.0001
b) Dependent variable: ASI-A, SADQ, TL
independent variable: OCDS-O
't' values 0.0001
c) Dependent variable: ASI-A, SADQ, TL
independent variable: OCDS-C
't' values 0.0001

On 4 follow-ups TL value predicted the OCDS-total scores but not OCDS subscale score (p>0.001).

Table 16: Baseline both ASI- Alcohol composite score and TL value predicted the OCDS-T score. When the regression was repeated using the same variable for OCDS subscales, only TL-value predicted the subscale scores.when regression done using OCDS values as independent variables showed significant t value (0.0001)

I Follow-Up-Independent Variable TL	
Dependent Variable	**'t' value**
OCDS-T	0.0001
OCDS-O	0.0029
OCDS-C	0.0015
Ii Follow-Up-Independent Variable TL	
Dependent Variable	**'t' value**
OCDS-T	0.0001
OCDS-O	0.0095
OCDS-C	0.0046
Iii Follow-Up-Independent Variable TL	
Dependent Variable	**'t' value**
OCDS-T	0.0001
OCDS-O	0.0225
OCDS-C	0.0402
Iv Follow-Up-Independent Variable TL	
Dependent Variable	**'t' value**
OCDS-T	0.0001
OCDS-O	0.1884
OCDS-C	0.1557

Table 17: Multiple regression analysis.

Conclusion

Craving measured by obsessive compulsive drinking scale, was easy to administer to our patients with alcoholism. None rejected the scale or complained of poor understandability of the scales.

Craving was higher among those who relapsed than those who did not. Craving did predict high alcohol consumption and high index of severity at baseline and all through the followup.

When multiple regression was done using craving as dependent variable and alcohol consumption and severity of alcohol dependence as independent variable or vice versa, in order to determine predictive power of craving on other measures of alcoholism, it was found that craving could predict alcohol consumption at baseline as well as relapse.

All the observations support predictive validity of craving as obsessive compulsion phenomenon. True craving as a obsessive compulsive phenomenon is likely to be useful in clinical practice.

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This article was originally published in a special issue, **Microglia and Synaptic Reorganization** handled by Editor(s). Dr. Hiroshi Nakanishi, Kyushu University, Japan