

RESEARCH

Motivational intervention among patients with alcohol dependence syndrome: a quasi experimental study in a selected de-addiction centre in Assam

Mary Anthony Angami, Arunjyoti Baruah¹, Nurnahar Ahmed²

MSc in Psychiatric Nursing, Lecturer, Sankar Madhab College of Nursing, Panikhaiti, Guwahati, Assam, India

¹Associate Professor & HOD, Department of Psychiatric Nursing, Lokopriya Gopinath Bordoloi Regional Institute of Mental Health, Tezpur, Assam, India

²Assistant Professor, Department of Psychiatric Nursing, Lokopriya Gopinath Bordoloi Regional Institute of Mental Health, Tezpur, Assam, India

Abstract

Background: Most alcohol users do not seek treatment voluntarily. They are brought forcibly or by the threats received from their family, and rarely come by their own will to quit alcohol. Their experience with alcohol is too positive, and the negative effects are perceived too minimal. During this period, if the individual is given motivational intervention to cease consuming alcohol, the chances of accepting to stop the drinking habit are more likely. A motivational intervention is any clinical strategy designed to enhance client motivation for change.

Aim of the study: The aim of the study was to assess the efficacy of motivational intervention among patients with alcohol dependence syndrome in terms of enhanced motivational level.

Materials and methods: The study adopted the pre-test post-test quasi experimental design with a sample group of 30 patients with alcohol dependence syndrome admitted in the de-addiction centre. The Brief Psychiatric Rating Scale (BPRS) was applied to the client for screening of psychosis. The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES scale) was applied to assess the motivational level on day one. Six sessions on motivational intervention were administered to the client on alternate days depending on the level of motivation. And on the 15th day, post-test was administered by the same SOCRATES scale to assess the level of motivation.

Results: The study findings concluded the efficacy of the motivational intervention module developed for patients with alcohol dependence syndrome.

Conclusion: The results of the study supported the evidence that motivational intervention on patients with alcohol dependence syndrome enhances the motivational level of the patients with alcohol dependence syndrome to quit alcohol.

Angami MA, Baruah A, Ahmed N. Motivational intervention among patients with alcohol dependence syndrome: a quasi experimental study in a selected de-addiction centre in Assam. *Dysphrenia*. 2014;5:91-7.

Keywords: Substance-Related Disorders. Recognition. Behaviour.

Correspondence: maryanthony356@gmail.com, arunjyotibaruah@yahoo.co.in

Received on 3 December 2013. Accepted on 6 February 2014.

Introduction

The National Household Survey of Drug Use in India conducted in 2004 was the first systematic effort to document the nationwide prevalence of drug use. Alcohol (21.4%) was the primary substance consumed followed by cannabis (three per cent) and opioids (0.7%).^[1] According to Ahmad *et al.* in the year 2009 in Uttar Pradesh, 22.8 per 1000 were dependent on alcohol. The important finding of these studies was alcohol had been the commonest substance used (60-98%), followed by cannabis use (four to 20%).^[2] Motivation plays an important role in alcoholism treatment by influencing patients to seek, complete, and

comply with treatment as well as make successful long-term changes in their drinking.^[3]

Over the past 15 years, considerable research and clinical attention have focused on ways to better motivate substance users to consider, initiate, and continue substance abuse treatment, as well as to stop or reduce their excessive use of alcohol, cigarettes, and drugs, either on their own or with the help of a formal programme. Motivation has been described as a prerequisite for treatment, without which the clinician can do little. Similarly, lack of motivation has been used to explain the failure of individuals to begin, continue, comply with, and succeed in treatment. Greater participation

in treatment is achieved through motivation enhancing approaches.[4] These approaches are also associated with positive treatment outcomes.[4]

Other medically ill patients who are being admitted to the hospital are well aware of being ill, and come to seek treatment voluntarily. On the contrary, the patients with alcohol dependence do not consider it to be a problem; and until they are given insight to the reason of their problem, they give no scope to quit alcohol. Denial of the problem is likely to be a major factor among those who drink.[5] Sometimes the patients come with a will to change but are disheartened when the health professionals taunt that they have come again. Sometimes the patients seek help to quit alcohol, but are unable as the effects of alcohol are too positive for them to let go. To resolve their ambivalence, patients in the pre-contemplation stage are given awareness to their problem. When the patients in the contemplation stage come, the patients are taught the disadvantages of alcohol, the different techniques to cope with cravings, refusal skills to better equip the patient to change their behaviour. And when the patients come to the preparation stage, the patients are taught the best strategies for their high risk circumstances. And when the patients come during the maintenance stage, the patients are taught the relapse triggers. From day to day practice, it is observed that patients who are prepared to handle these circumstances are better motivated to quit alcohol.

Materials and methods

Research approach: An evaluative approach was used with a research design of pre-test post-test quasi experimental design.

Inclusion criteria

- Patients diagnosed as a case of alcohol dependence syndrome as per the tenth edition of the International Statistical Classification of Diseases and Related Health Problems (ICD-10)[6]
- Age group of 18 to 60 years
- Patients who could read and understand Assamese

Exclusion criteria

- Patients with primary diagnosis of mental disorders
- Patients with multiple substance use except tobacco, as excluding patients consuming tobacco would lead to decrease in availability of sample size
- Patients not willing to participate in the study

Hypothesis H₁ There will be significant difference between mean pre-test motivational score and mean post-test motivational score.

H₂ There will be significant association between level of motivation and various socio-demographic variables like age, gender, educational qualification, religion, occupation, family income, marital status, and type of family.

Population: Patients diagnosed as cases of alcohol dependence syndrome.

Sampling technique: Convenient sampling technique was used.

Description of the tools

The Brief Psychiatric Rating Scale (BPRS) is a short scale used to measure the severity of psychiatric symptomatology. It has 18 items. If the score is less than 30, it indicates score of mild severity, and only those patients were taken for study.[7]

Socio-demographic tool consisted of the items age, gender, education, religion, marital status, habitant, type of family, occupation, and family income.

Fig 1: Schematic presentation of the Motivational Intervention Module planned for respective level of motivation and its schedule timings.			
	Low level motivation	Medium level motivation	High level Motivation
Day 3	I ₁ MI	I ₂ MI	I ₃ MI
Day 5	II ₁ MI	II ₂ MI	II ₃ MI
Day 7	III ₁ MI	III ₂ MI	III ₃ MI
Day 9	IV ₁ MI	IV ₂ MI	IV ₃ MI
Day 11	V ₁ MI	V ₂ MI	V ₃ MI
Day 13	VI ₁ MI	VI ₂ MI	VI ₃ MI

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) is a 19 items scale, standardised, self-administered instrument designed to assess the client's motivation to change drinking related behaviour. The instrument yields three factorials-derived scale scores: Problem Recognition, Ambivalence, and Taking Steps. Ratings are made by the subject on a five-point Likert scale. It had been designed by Miller and Tonigan. The reliability was measured by test-retest and internal consistency. The validity had been measured by criterion and construct. The reliability for Recognition is .96, Taking Steps .94, and Ambivalence .88.[8] Translation of the SOCRATES tool from English to Assamese language, and reverse translation of the SOCRATES tool from Assamese to English language had been done.

Motivational Intervention Module is a direct client-centred counselling style for bringing change in the motivational level by the researcher for patients with alcohol dependence syndrome in this study. The motivational intervention module was prepared after going through extensive literature. The motivational intervention was sent to three experts for content validity. The motivational intervention was for a period of 15 days. Six sessions were planned for the clients on alternate days for each level of

motivation. The session began on day one with the pre-test and ended on day 15 with the assessment of post-test. The duration of the session was for 45 minutes on a one to one basis, conducted by a psychiatric nurse (MSc in Psychiatric Nursing student) who had been attached and trained by a Clinical Psychologist during Motivational Enhancement Therapy sessions.

Pilot study

The pilot study was carried out with the following aims:

- To find out the feasibility of the administration of the motivational intervention
- To find out the time duration of a session of motivational intervention
- To assess the amount of time for administration of the tool

The pilot study was carried out from June 10th, 2011 to June 26th, 2011. Five patients with diagnosis of alcohol dependence syndrome who had been identified scoring less than 31 were included in the pilot study. The SOCRATES scale in Assamese version was administered on the day one to assess the motivational level prior to implementation of the motivational intervention. Six sessions were administered to the patients on alternate days depending on the level of motivation. And on the 15th day, post-test was administered to assess the level of motivation with the same scale.

Results of pilot study

Out of the five patients constituting the sample in the pilot study, two belonged to 36-50 years and three belonged to 18-35 years. All belonged to Hindu religion. Two of the patients had secondary education, other three had primary education. Four were from rural habitant and one was from urban habitant. Four belonged to nuclear family and one from joint family. Three were businessmen, one was a professional, and the other was a daily wage earner. The family income of two were Rs 5001 to 10000, the other two were <Rs 5000, and one had income >Rs 15000. In the pre-test score, two patients belonged to medium level of motivation and three belonged to very high level of motivation. In the post-test score, two patients belonged to high level of motivation and three belonged to very high level of motivation.

Data collection procedure

Permission was obtained from the concerned authority to conduct the study in Department of Psychiatry, Gauhati Medical College Hospital, Guwahati, Assam, India. Data had been collected from the patients after obtaining a written informed consent after explaining the need of the study. The period of data collection was from July 1st, 2011 to August 25th, 2011. Patients with marked and moderate

Table 1: Descriptive analysis of socio-demographic data of the sample

	Percentage
Age group	
18-35 years	56.7
36-50 years	36.7
51-65 years	6.7
Educational qualification	
Primary	53.3
Secondary	20
Higher secondary	16.7
Graduate	10
Religion	
Hindu	96.7
Muslim	3.3
Marital status	
Married	83.3
Unmarried	16.7
Habitant	
Rural	40
Urban	60
Type of family	
Nuclear	40
Joint	60
Occupation	
Unemployed	6.7
Daily wage earner	30
Businessman	46.7
Professional	16.7
Family income	
Less than Rs 5000	46.6
Rs 5001 to Rs 10000	20
Rs 10001 to Rs 15000	16.7
More than Rs 15000	16.7

withdrawal symptoms were not included in the study till the symptoms subsided, and were mild and stable. The BPRS was applied to the patients for screening of psychosis. If the score was less than 30, only then the socio-demographic data were collected. And the SOCRATES was applied to assess the motivational level on day one. Six sessions were administered to the clients on alternate days depending on the level of motivation. And on the 15th day, post-test was administered to assess the level of motivation with the same scale.

Statistical analysis

In order to find out the significance of difference between pre-test and post-test motivational score, paired 't' test was computed.

Results: The results are as shown in the tables 1 to 6.

Table 2: Frequency and percentage distribution of pre-test and post-test motivational level of the sample group (N=30)

Level of motivation	Pre-test		Post-test	
	Frequency (%)	CF	Frequency (%)	CF
10-29 Very Low	0 (0)	0	0 (0)	0
30-49 Low	0 (0)	0	0 (0)	0
50-69 Medium	3 (10)	3	0 (0)	0
70-89 High	14 (46.7)	17	6 (20)	6
>90 Very High	13 (43.3)	30	24 (80)	30

CF=cumulative frequency

Table 3. Range, mean, median, and standard deviation of pre-test and post-test level of motivation of sample group (N=30)

		Pre Test	Post Test
Range	Minimum	60	76
	Maximum	95	95
Mean		85.6	92.47
Median		87.5	95
Standard Deviation		10.0	5.01
Standard Error		1.83	0.91

Table 4: Mean, standard deviation of difference, and paired 't' value of pre- and post-test motivational score of sample group (N=30)

Group	Mean		Mean difference	Standard deviation of mean difference	Standard error of mean difference	't' value
	Pre- test score	Post- test score				
Patients with alcohol dependence syndrome	85.6	92.5	6.9	7.85	1.43	4.791*

Table value $t = 2.045$ at $df\ 29$, *significant at 0.05 level

Discussion

Demographic data

In the study, the data collected showed that most of the patients were within 18-35 years of age. From the collected data, it is found that 56.7% (n=17) of the patients belonged to the age group of 18-35 years, 36.7% (n=11) belonged to the age group of 36-50 years, and only 6.7% (n=two) belonged to the age group of 51-65 years. From the data collected, it can be inferred that patients' with alcohol dependence belong to the age group of 18-35 years. The present study had been compared with other studies like Wutzke *et al.*, and it was found that the mean age was 40.1 years.[9] In another study, Allsop *et al.*[10] found the mean age to be 38.8 years. In another study, Holloway *et al.*[11] found the mean age group to be 43.7 years. Medhi *et al.*[12] have shown the mean age group as 19 years.

Many of the patients had been brought because of the withdrawal symptoms associated with alcohol. And some had been brought in intoxicated states. The patients are brought at an early age with the hope that early treatment would lead to better future outcome. And there was less percentage in other age groups in the study as because of the complications of physical illness associated with alcohol dependence, many do not survive till the higher age group. Among alcohol dependents, prevalence of illness was more.[13] With advancement in age, the chronicity of the problem may desensitise the patient or the family members to consider it a problem. That may be another reason for less percentage of patients in the higher age groups.

The study showed that 30 patients were men. In comparison to other studies, females were 37% in a study by Wutzke *et al.*,[9] ten per cent in the study by Holloway *et al.*,[11] 54% by Medhi *et al.*,[12] and 32.6% in the study by Hazarika *et al.*,[14] respectively.

The study shows that maximum of the patients with 43.3% (n=13) were educated up to primary level of education, patients with secondary level of education were 20% (n=60), 16.7% of the patients educated up to higher secondary level of education. Graduates were ten per cent (n

Table 5: Dimension wise mean, median, standard deviation, and paired 't' value of the dimensions of the SOCRATES scale of pre-test and post-test score (N=30)

Dimension	Mean		Median		Standard deviation		't'-value
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	
Recognition	30.53	33.6	31.5	35	4.81	3.9	4.007*
Ambivalence	17.9	19.1	18	20	2.04	1.8	3.040*
Taking Steps	37.1	39.7	40	40	5.01	.82	2.959*

Table value $t=2.045$ at $df\ 29$, *significant at 0.05 level

Table 6: Association of level of motivation with selected demographic variables

SI no	Variables	Chi square with level of motivation	Significance
1	Education	0.621 (df=1)	NS
2	Habitant	0.362 (df=1)	NS
3	Type of family	0.362 (df=1)	NS
4	Occupation	2.916 (df=1)	NS
5	Family income	8.438 (df=1)	S*

Table value $t=3.84$ at $df\ 1$, *significant at 0.05 level

=three) of the patients were illiterate, and no patients belonged to postgraduate and professional level of education. The study showed that majority of the patients was literate having basic educational qualification. This may be also the reason why the patients reach out for help early.

The study showed that 96.7% (n=29) were Hindus, 3.3% Muslims, and there were no patients belonging to Christian and other religion.

Majority of the patients (83.3%, n=25) were married, 16.7% (n=five) were unmarried, and no patients were found to be separated/divorced or widow/widower. The reason for majority of the sample to be married may be that the age group 18-35 years is the age for marriage. Also, the family members get the patient married with the hope that marriage may change their drinking behaviour.

The present study showed that majority of the patients (60%, n=18) were urban habitants and 40% (n=12) were rural habitants, and no patients were semi urban habitant. The reason for majority of patients belonging to urban habitants may be the easy accessibility of health care services provided by the setting where the research was being conducted.

The present study showed that majority of the patients

(60%, n=18) belonged to joint family and 40% (n=12) belonged to nuclear family. The majority of the patients in the study (46.7%, n=14) belonged to businessman, 30% (n=nine) belonged to daily wage earner, 16.7% (n=five) belong to professional, 6.7% (n=two) are unemployed, and no patient belonged to housewife, retired, or cultivator group. The study was consistent with findings of Holloway *et al.* where the results showed that out of 70 participants, 40 were employed.[11] In a study by Wutzke *et al.*,[9] out of a total of 555 participants, 407 were employed, 22 were housewife, 50 were student, 33 were unemployed, and 40 were retired.

The motivational level of the sample group

The findings of the study showed that in the pre-test level of motivational score, none of the sample belonged to the 'very low' and 'low' level of motivational level, respectively. Only ten per cent of sample belonged from 'medium' level of motivation, 46.7% belonged to 'high' level of motivation, and 43.3% of sample belonged to 'very

high' level of motivation. The reason for having high and very high level of motivation may be that the patients had encountered multiple physical and emotional problems due to alcohol intake, and they were determined to change their drinking behaviour. The very fact that they had come to the hospital by themselves for treatment, or had been persuaded by family members, may have been the reason for very high level of motivation during the pre-test score.

In the post-test level of motivational score, no sample belonged from very low, low, and medium level of motivation. High level of motivation belonged to 20% of the sample group, and 80% of the sample group belonged to very high level of motivation. These results are indicative of the effectiveness of the motivational intervention.

The findings also showed that the mean score of motivational level in pre-test was 85.6, median was 87.5, standard deviation was 10.0467, and the standard error was 1.834. In the post-test level of motivation, the mean value was 92.466, median value was 95, standard deviation value was 5.01, and the standard error was 0.915. When the values of the range of pre-test (maximum=95 and minimum range=60) and post test (maximum=95 and minimum =76) were compared, the post-test range score had decreased which was indicative that the patients had scored more in

the post-test. The six alternate sessions to each patient depending on the level of motivation had been effective. From the result, it can be inferred that motivational intervention to patients with alcohol dependence increased the motivational level of the patients.

Discussion of the significant difference between mean pre-test and post-test motivational score

To test statistical difference, the following null hypothesis (H_{01}) was stated in reference to the research hypothesis (H_1):

“There will be no significant difference between mean pre-test motivational score and mean post-test motivational score of patients with alcohol dependence syndrome after implementation of motivational intervention.”

The data showed that the mean post-test motivational score (92.47) was higher than mean pre-test motivational score (85.6). The calculated paired ‘t’ value ($t=4.791$) was greater than the tabulated value ($t=2.045$ at $df\ 2$, $p<0.05$).

Hence the null hypothesis (H_{01}) can be rejected, inferring that motivational intervention was highly effective for patients with alcohol dependence syndrome. The findings of the study is consistent with the study findings of Jung *et al.* in the year 2011 which evaluated the effects of five sessions of brief intervention among a total of 41 alcohol dependent patients, which changed significantly ($p<0.05$, $\chi^2=7.141$). [15] The study is consistent with Freyer-Adam *et al.* in the year 2008, where after brief alcohol intervention on clients’ motivation, longitudinal analyses revealed significant interaction effects of time and intervention ($p<0.05$), indicating a stronger increase of readiness to change drinking and a less profound drop of readiness to seek help among those who received intervention compared to the controls. [16]

The study also showed that the mean score of all the dimensions of the tool had increased in the post-test score. The calculated value of ‘t’ for pre-test and post-test score in all the three dimensions are higher than the tabulated value (table value of ‘t’ = 2.045 at $df\ 29$, $p<0.05$). The paired ‘t’ value for Recognition dimension is ‘t’=4.007; for Ambivalence, paired ‘t’ value is 3.040, and the paired ‘t’ value for Taking Steps is ‘t’=2.959.

Discussion of association between motivational level and selected variables

To test the association between the variables, the null hypothesis (H_{02}) was stated in reference to the research hypothesis H_2 that, “there will be no significant association between level of motivation and various socio-demographic variables like age, educational qualification, religion, occupation, family income, type of family.”

Based on the findings of the study, it can be concluded

that the motivational level of patients with alcohol dependence syndrome are not affected by the educational level, habitant, type of family, and occupation. The study showed that the variable family income at $df\ 1$ with χ^2 value 8.438, $p<0.05$ was found significant when compared with the tabulated value ($\chi^2=3.841$). The motivational level is associated with the family income of the patient. Majority of the patients (46.6%, $n=14$) have family income less than Rs 5000 and their motivational level is very high at the post-test after motivational intervention. One of the reasons may be that even with low family income, the family have brought the patient to avail the services for change. The health services are expensive and cannot be afforded by all patients due to the transportation expense, hospital charges, cost of medications, and daily stay of patient and attendants in the hospital. The fact that the patients’ families have brought the patient may be one reason that affected the motivational level of the patient. The other 20% ($n=six$) of the patients have Rs 5001 to Rs 10000 family income, 16.7% of the patients belong to the family income group Rs 10001 to Rs 15000, and 16.7% of the patients belong to the family income group of more than Rs 15000. All the patients in the study at the post-test score too, have very high scores of motivational level. Majority of the patients have been brought by their family members and by their own consent for change. The high family income and the easy ability to access health services may be the other reason for high motivational level.

Limitations of the study

The sample size of the present study was very small. The duration of the data collection and the time period of the intervention were very short. A control group was not present to assess the effect of the motivational intervention, and follow up of patients to be done for better determination of motivational level.

Conclusion

Behavioural change is a learning process. The motivational intervention module prepared by the researchers was implemented to the patients with alcohol dependence syndrome in order to enhance their level of motivation to change their pattern of drinking and abstain from alcohol intake. The results of the study supported and showed evidence that the motivational intervention on patients with alcohol dependence enhances the motivational level of the patients. Individuals from high level of motivation in the pre-test benefited and progressed to the very high level of motivation in the post-test findings.

The study is an evidence based finding, stating the efficacy of motivational intervention among patients with alcohol dependence syndrome.

Source of support: Nil. **Declaration of interest:** None.

References

1. Murthy P, Manjunatha N, Subodh BN, Chand PK, Benegal V. Substance use and addiction research in India. *Indian J Psychiatry*. 2010 Jan;52(Suppl 1):S189-99.
2. Ahmad N, Bano R, Agarwal VK, Kalakoti P. Substance abuse in India. *Pravara Med Rev [Internet]*. 2009;1(4):4-6 [cited 2014 Jan 31]. Available from: <http://www.pravara.com/pmr/pmr-1-4-2.pdf>
3. Baron RA. *Psychology*. 5th ed. New Delhi: Pearson Education; 2004.
4. Miller WR, editor. Enhancing motivation for change in substance abuse treatment. DHHS publication: Volume 35 of Treatment improvement protocol (TIP) series. Center for Substance Abuse Treatment (U.S.): DIANE Publishing; 1999.
5. Bhagabati D, Das B, Das S. Pattern of alcohol consumption in underage population in an Indian city. *Dysphrenia*. 2013;4:36-41.
6. World Health Organization. The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. Geneva: World Health Organization; 1992.
7. Sadock BJ, Sadock VA, Ruiz P, editors. *Kaplan & Sadock's comprehensive textbook of psychiatry*. 9th ed. Philadelphia: Lippincott Williams & Wilkins; 2009.
8. Miller WR, Tonigan JS. Assessing drinker's motivation for change: the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychol Addict Behav*. 1996;10:81-9.
9. Wutzke SE, Conigrave KM, Saunders JB, Hall WD. The long-term effectiveness of brief interventions for unsafe alcohol consumption: a 10-year follow-up. *Addiction*. 2002;97:665-75.
10. Allsop S, Saunders B, Phillips M, Carr A. A trial of relapse prevention with severely dependent male problem drinkers. *Addiction*. 1997;92:61-73.
11. Holloway AS, Watson HE, Arthur AJ, Starr G, McFadyen AK, McIntosh J. The effect of brief interventions on alcohol consumption among heavy drinkers in a general hospital setting. *Addiction*. 2007;102:1762-70.
12. Medhi GK, Hazarika NC, Mahanta J. Correlates of alcohol consumption and tobacco use among tea industry workers of Assam. *Subst Use Misuse*. 2006;41:691-706.
13. Hazarika M, Bhagabati D. The role of personality correlates in the pathogenesis of alcoholism: an intergenerational study among alcohol dependent and nondependent population. *Dysphrenia*. 2014;5:32-48.
14. Hazarika NC, Biswas D, Phukan RK, Hazarika D, Mahanta J. Prevalence and pattern of substance abuse at Bandardewa, a border area of Assam and Arunachal Pradesh. *Indian J Psychiatry*. 2000;42:262-6.
15. Jung JG, Kim JS, Kim GJ, Oh MK, Kim SS. Brief insight-enhancement intervention among patients with alcohol dependence. *J Korean Med Sci*. 2011;26:11-6.
16. Freyer-Adam J, Coder B, Baumeister SE, Bischof G, Riedel J, Paatsch K, *et al*. Brief alcohol intervention for general hospital inpatients: a randomized controlled trial. *Drug Alcohol Depend*. 2008;93:233-43.