Motivation to change and factors influencing motivation in alcohol dependence syndrome in a tertiary care hospital

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INTRODUCTION

Alcohol is the most commonly used psychoactive substance leading to significant disability and death globally. Alcohol contributes to nearly 3.2% of all deaths and 4% of total disability adjusted life years globally.[1] In India, the National Household Survey of drug use showed the prevalence of 21.4% for alcohol use and about 4% for alcohol dependence.[2] Motivation refers to the driving force that results in behavior directed toward particular goals. The process

ABBREVIATIONS: AM, Alcohol dependence questionnaire; KPS, Kuppuswamy's socioeconomic status scale; PSS-10, Perceived stress scale; WPAIQ, Wisconsin problem solving inventory.

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of motivation to change, also referred to as readiness to change, can be conceptualized as a differentiated personal pathway that individuals traverse to modify or stop a habitual pattern of behavior. Prochaska and DiClemente’s “transtheoretical model” proposed that motivation to change is a dynamic process consisting of five stages, namely, precontemplation (PC), contemplation, preparation, action, and maintenance.

DiClemente et al. found that readiness to change drinking behavior was predicted by baseline measures of perceived stress, drinking severity, psychiatric comorbidity, self-efficacy, craving, and positive treatment outcome expectancies. In a study of 125 males, participating in a 21-day inpatient treatment program, no relationship was found between the pretreatment readiness for change, and the quantity and frequency of alcohol consumed. A review indicated that treatment-related changes in readiness to change were not associated with drinks per week or alcohol-related problems.

However, some studies have found a significant correlation between stages of change and daily alcohol consumption, severity, and problems due to alcohol. Higher levels of motivation to change was found to be related to higher frequency and quantity of alcohol use and alcohol-related problems. Greater readiness to change has been significantly associated with greater alcohol misuse severity. Higher income and longer duration of inpatient treatment have been found to positively correlate with improved outcome at 3 months follow-up.

Pretreatment stage of motivation has been correlated with the type of intervention and its outcome in the treatment of alcohol dependence and is known to influence the patient to seek and comply with treatment as well as make successful long-term changes. Lower readiness to change has been identified as a predictor of nonabstinence goals such as controlled drinking. Readiness to change has been found to vary with prior as well as current help-seeking behaviors. The dynamic nature of motivation makes it essential to identify the factors related to each stage to facilitate the treatment process and improve outcome.

Our aim is to study the motivation for change in inpatients with alcohol dependence syndrome (ADS) and to evaluate the relationship between motivation and certain sociodemographic and clinical variables in an attempt to facilitate a better understanding of this dynamic process.

**MATERIALS AND METHODS**

This study was conducted at the Alcohol De-addiction and Treatment Center, Department of Psychiatry, at a tertiary care center in South India, from September 2011 to August 2012. The study was approved by the Institutional Ethical Committee. The study population consisted of all male patients aged 18–64 years with International Classification of Disease 10th Revision (ICD-10) Diagnostic Criteria for Research diagnosis of ADS, out of which 100 consecutive consenting patients were selected as the sample for the study. Patients with other substance use disorders (other than nicotine), other comorbid psychiatric disorders (other than personality disorders), and patients not willing to give an informed consent were excluded from the study.

**Materials**

1. Sociodemographic and clinical proforma designed by the authors to collect sociodemographic details and the clinical features of alcohol intake
2. ICD-10 - AM symptom checklist: Australian modification of the WHO ICD-10 symptom checklist for mental disorders was used to screen for the presence of psychiatric disorders
3. University of Rhode Island Change Assessment (URICA) scale: The URICA is a 32-item self-report scale developed by McConnaughy et al. in 1983 which includes four 8-item subscales measuring the stages of change: PC, contemplation (C), action (A), and maintenance (M). Total “readiness to change” score can be calculated (C + A + M – PC), to yield a continuous measure
4. Severity of Alcohol Dependence Dependence Questionnaire (SADQ): It is a 20-item self-completion questionnaire, where the respondents are asked to focus on a most recent month, typical of their heavy drinking. Out of a total score of 60, a score of 31 or higher indicates severe alcohol dependence; 16–30 indicates moderate, and below 16 indicates mild dependence
5. Kuppuswamy's socioeconomic status scale: The Kuppuswamy's socioeconomic status scale, proposed for the Indian population, revised in 2007, takes into account the education, occupation, and income. Based on the cumulative scores, five socioeconomic classes are proposed, i.e., upper (I), upper middle (II), lower middle (III), upper lower (IV), and lower (V).

**Procedure**

The participants were explained about the nature of the study, and written informed consent was obtained. The sociodemographic and clinical information were recorded. All the patients were screened with the ICD-10-AM symptom checklist for mental disorders screener, applying the respective modules to establish ADS and rule out comorbid psychiatric disorders other than personality disorders. The severity of alcohol dependence was assessed using the SADQ. The socioeconomic status was assessed using the Kuppuswam’s Socioeconomic Status Scale. The assessment of motivation was done using the URICA scale on two occasions: first, at the end of 1st week of inpatient care when withdrawal symptoms had subsided, representing baseline assessment; and second, after 2 weeks of inpatient stay. The
URICA was applied verbatim by the first author; however, it was translated into the local language by the first author for some of the patients not well versed in English.

**Statistical analysis**

Statistical analysis was done using Statistical Package for Social Sciences (SPSS) V.17.0 (Chicago, IL). Descriptive statistics was used to analyze the stages of motivation, clinical, and sociodemographic variables. Comparison between groups was done using paired and unpaired t-test. Chi-square test and Fisher’s exact test were used to analyze the significance of association. Wilcoxon signed-rank test was used to analyze the significance of change in motivation levels from baseline to 2nd week.

**RESULTS**

**Sociodemographic data**

This study was conducted on 100 patients, all of whom were male. Forty percent of the patients were aged between 31 and 40 years, 62% being married. Seventy-one percent were Hindus, 3% Muslims, and 26% Christians; 34% had high school education, while only 4% were illiterate. 99% were employed before admission to the de-addiction facility. Most of the patients had a monthly income between 5000 and 10,000 Indian rupees (39%). The assessment of socioeconomic status showed that 9% of patients belonged to Class I, 39% to Class II, 33% to Class III, and 19% to Class IV. Forty percent of the patients resided in urban areas, 15% in semi-urban, and 45% in rural areas. A major part of the sample had been referred for treatment by family, constituting 69% of patients; 29% had sought treatment on their own; others (2%) included referral by religious leaders and employers.

**Clinical data**

Analysis of clinical data showed that 92% of the patients had initiated alcohol use below 25 years of age. A majority of patients had late onset of alcohol dependence, i.e., onset of dependence after the age of 25 years (n = 70, 70%). Thirty-four percent of the sample consumed 6–12 standard units, 24% consumed 13–18 standard units, 11% consumed 19–24 standard units, and 28% consumed more than 24 standard units of alcohol daily. The duration of alcohol dependence was < 1 year in 5%, 1–5 years in 42%, 6–10 years in 32%, 11–15 years in 9%, 15–20 years in 7%, and more than 20 years in 5% of the sample. Eighty-three percent had experienced at least once for 1 month. The severity of alcohol dependence was mild in 25%, moderate in 50%, and severe in 25% of the patients. Fifty-seven percent had experienced some complication of alcohol use, gastritis and liver disease being the most common; 32% had a medical comorbidity such as hypertension or diabetes.

**Assessment of motivation**

Figure 1 shows the stages of motivation assessed using the URICA scale. At baseline, 60% of the patients (n = 60) were in PC stage, 38% in contemplation stage (n = 38), and 2% in action stage (n = 2). The second assessment showed that 34% of the patients were in PC stage (n = 34), 57% in contemplation stage (n = 57), and 9% in action stage (n = 9). There was a highly significant change in the stage of motivation toward contemplation and action stage after 2 weeks of inpatient stay (Wilcoxon signed-ranks test Z = 5.745, P ≤ 0.001).

**Factors associated with baseline motivation**

The stages of motivation at the baseline showed significant association with complications of alcohol use (P = 0.025) and medical comorbidity (P = 0.03). Liver disease, peripheral neuropathy, and the presence of comorbidities such as hypertension and neurological disorders were associated with higher stages of motivation. There was a significant association of religion (P = 0.022), income (P = 0.04) and socioeconomic class (P = 0.004) with the stages of motivation. Majority of the Hindus and Christians were in PC stage, whereas Muslims were in contemplation or action stage. Higher income and higher socioeconomic class were associated with higher stages of motivation. A significant association was seen between mode of referral and stages of motivation at baseline. The patients who referred themselves for treatment had better motivation to change compared to those referred by family and others at baseline (P = 0.001).

**Factors associated with motivation at second assessment**

The severity of alcohol dependence showed highly significant association with the stages of motivation at second assessment (P = 0.006). Fifty-six percent of patients with mild dependence were in PC stage compared to 22% with moderate and 36% with severe dependence. Most of the patients with moderate (70%) and severe (60%) dependence were in contemplation stage. There was a significant association of the stage of motivation at the second assessment with onset of alcohol dependence (P = 0.022).
Most of the patients in contemplation stage (71.9%) and action stage (77.7%) had late onset of dependence. The patients who sought treatment willingly had better motivation to change compared to those admitted by family and others, after 2 weeks of inpatient stay \( (P < 0.001) \). On comparison of URICA score, change in motivation levels from baseline to 2\(^{nd} \) week was found to be significant \( (P < 0.001, t = 10.601) \).

At the second assessment, no significant association was found between the stages of motivation and complications of alcohol use, medical comorbidity, religion, income, and socioeconomic class. No significant association was found between the stages of motivation and age of initiation of alcohol use, duration of alcohol dependence, quantity of daily drinking, number of previous abstinence, age, marital status and education at baseline or second assessment.

**DISCUSSION**

The present investigation was an observational, descriptive clinical study, carried out on 100 consecutive male patients admitted for the treatment of ADS in a deaddiction unit for 2–3 weeks. This deaddiction unit is a sixty-bedded ward in a private tertiary care center where treatment is available at subsidized rates, paid by patients themselves. Patients with alcohol or substance dependence are admitted alone and treated for 2–3 weeks routinely. The patients receive pharmacotherapy along with group discussions, education about effects of alcohol, family meetings, and individual therapy whenever required. Motivation was assessed on two occasions to observe changes in the motivation levels. A highly significant change was observed in the stage of motivation toward contemplation and action after 2 weeks of admission in the deaddiction center. Pretreatment motivation levels were low in the present inpatient sample. However, after a short duration of hospital stay, their motivation levels improved significantly. The patients received treatment as usual including pharmacotherapy and psychoeducation, had no access to alcohol and no exposure to cues during their stay. This could account for the improvement in motivation levels during the hospital stay. A positive therapeutic relationship has been found to be important for patients with low motivation, improving their outcome.\(^{23} \) A previous study reported that readiness to change was significantly higher in alcohol-dependent persons in the general hospital compared to the general population.\(^{24} \) The findings of our study indicate that even a short duration of inpatient stay leads to significant improvement in the level of motivation to change in patients with alcohol dependence.

The presence of complications of alcohol use and medical comorbidity showed significant association with the stages of motivation at baseline as found in the previous studies.\(^{8,25} \) A majority of patients with liver disease, peripheral neuropathy, hypertension, and neurological disorders had higher motivation. Most of the patients with diabetes and absence of comorbidity were in PC stage. Motivation to change has been found to be higher among inpatients with alcohol-attributable diseases than among inpatients without them.\(^{25} \) Alcohol has been reported to have a protective effect against diabetes and cardiovascular disorders,\(^{26} \) which may influence the promotion of alcohol use in these disorders, and in such cases, alcohol use may not be recognized as a problem behavior.

A conservative, cultural attitude and religious forbiddance for the use of alcohol may explain better motivation among Muslims found in this study. Personal devotion and institutional conservatism have been significantly and inversely associated with current levels of drinking and lifetime risk for alcohol dependence.\(^{27} \) Religion has been recognized as a facilitator of change in a selected population of alcohol users.\(^{28} \) Majority of patients in the lower class were in PC stage, and higher income and upper socioeconomic class were associated with better stages of motivation, similar to the findings of a previous study.\(^{29} \) Promoting involvement in religious activities where applicable and addressing socioeconomic condition of the patients could have a beneficial influence on motivation and treatment seeking.

In our study, majority of patients with moderate and severe dependence had a higher level of motivation compared to those with mild dependence as found in certain previous studies.\(^{7,9,11} \) This is in contrast to the findings by Barnett et al.\(^{30} \) that lower baseline level of drinking and drinking problems predicted greater intention to change drinking behavior. Patients with mild alcohol dependence may not recognize their alcohol use as problematic, thus resulting in lower motivation levels. This observation can help us tailor treatment according to the severity of dependence for optimal outcome; using approaches such as motivation enhancement therapy for patients with mild dependence, which has been reported to result in a better outcome in patients with lower motivation levels.\(^{13} \)

Patients with early-onset dependence had lower motivation levels, and those with late-onset dependence had higher motivation levels. It has been found that both maladaptive motivational structure and novelty seeking predict alcohol-related problems.\(^{21} \) Patients with early-onset dependence exhibit spontaneous alcohol-seeking behavior, lack harm avoidance, have novelty seeking and a stronger association with personality disorders.\(^{32} \) Factors such as impulsivity, low harm avoidance, and novelty seeking may influence motivation adversely in patients with early onset of dependence.

Self-referral for the treatment was associated with higher stages of motivation at baseline and after 2 weeks of
admission. The present study indicates that patients who sought treatment willingly had higher levels of motivation compared to those admitted by family or others, and their high level of motivation was sustained till the end of treatment. This implies that motivating patients to seek treatment willingly before admission may promote better outcomes than forcible admissions. However, considering that only 29% sought treatment willingly, but at the end of 2 weeks, 57% were in contemplation and 9% in the action stage, we can infer that even forcible admissions by the family members may help the treatment process in some way. In the Indian context, the family plays a crucial role, particularly in cases where patients are unwilling for treatment, by means of forcing the patient to seek treatment, decision-making regarding choice of medication, monitoring adherence to treatment, etc. It can be concluded from the present study that certain patients with ADS have low pretreatment levels of motivation. However, since the present study was conducted in a single center, the results need to be replicated in different setups among varied population before generalizing the results. Definite and significant improvement in the motivation level is seen after a short duration of inpatient treatment. The level of motivation has a significant association with onset and severity of alcohol dependence, complications of alcohol use, medical comorbidity, religion, income, socioeconomic status, and mode of referral. Focusing on appropriate clinical and social factors, improving the socioeconomic conditions and encouraging the patient to seek inpatient treatment willingly rather than forcibly may lead to better motivation and outcome.

CONCLUSIONS

At baseline, motivation levels had a significant association with complications of alcohol, medical comorbidity, and external factors such as religion and socioeconomic conditions. However, after 2 weeks of admission, these factors were no longer significant and drinking-related factors such as severity and onset of dependence became significant. This implies that factors such as complications of alcohol, medical comorbidity, and external factors are important initially, in motivating the patient to seek treatment, but other factors come into play in sustaining the motivation. The findings of this study emphasize the importance of a multidimensional approach addressing appropriate clinical and social factors in motivating patients at different stages of treatment seeking for an optimal outcome.

The sample of the present study may not be representative of the general population as the population of this study is a selected group of inpatients. The patients have been recruited by consecutive sampling which eliminates sampling bias, with specific inclusion and exclusion criteria, thus ensuring a homogenous group. A larger sample size would be required to enhance the reliability and validity of the results. The tools have established reliability and are less time-consuming. Rater bias is possible as the assessment was not blind. The assessment of motivation was carried out on two occasions during inpatient stay though over a short period which is a conspicuous merit of this study. In our study, baseline assessment representing motivation level at admission was done 1 week after admission since most patients experienced withdrawal symptoms in the 1st week. Hence, it may not represent an accurate assessment of motivation level at admission. The relation of motivation levels to treatment and outcome was not assessed in this study. This is one of the few studies on motivation levels and associated factors, with a substantial sample size and assessment of motivation on two occasions in inpatients with ADS. Further research could address issues such as selection of larger sample representative of general population, longer follow-up period with multiple blind assessments, and explore association of motivation levels with treatment outcome.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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