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Original Research Article

A comparative study to assess drinking expectancy and functioning in alcohol dependent patients with and without co-morbid depression

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ABSTRACT

Background: Alcohol dependence syndrome (ADS) and major depressive disorder are highly prevalent. Much less is known about the expectancy of alcohol use in depressed patients with ADS. Few studies had compared the expectancy of alcohol use in ADS patients with and without co-morbid depression. Assessing the above factors may help to formulate effective prevention strategies. This study was designed to assess the difference in expectancy of alcohol use and functioning in patients with ADS with and without co-morbid depression.
Methods: The difference in expectancy of alcohol use in 96 alcohol dependent patients, of which 24 had co-morbid depression and 72 without co-morbid depression was studied using drinking expectancy questionnaire. In addition, we compared the difference in functioning between the two groups using GAF.
Results: Prevalence of depression in alcohol dependent patients was 25%. ADS patients with co-morbid depression had less expectancy about alcohol use for sexual enhancement and had lower level of functioning compared to ADS patients without depression.
Conclusions: Less expectancy on sexual enhancement in patients with ADS and co-morbid depression could be possibly due to reduced libido in depressed patients. The observed lower functioning in ADS patients with co-morbid depression despite no difference in severity of alcohol use may be possibly explained by the added burden of both the diseases.

Keywords: Alcohol dependence syndrome, Co-morbidity, Depression, Drinking expectancy

INTRODUCTION

The presence of co-morbid conditions, such as alcohol dependence (AD) and major depression (MD), has important implications for patient functioning and prognosis, including difficulties in case identification, treatment effectiveness, compliance, altered pharmacokinetics and increased chronicity of both conditions.[1] Depression and alcoholism are associated with considerable morbidity, disability, and mortality, and co-occur more commonly than expected by chance.[2-6]

Alcohol outcome expectancies can be defined as beliefs that people have about the affective, cognitive and behavioural effects of drinking alcohol.[7] Many studies have been done on assessment of outcome expectancies associated with alcohol use.[8,9] Researchers have found differences in expectations about alcohol between children of alcoholics and children of non alcoholics.[10] Even in preschool, children of alcoholics have more knowledge about alcohol than their peers. For example, they are better able to identify alcoholic beverages visually.[11] Recent studies continue to confirm earlier work showing that expectations about alcohol predict future alcohol use. From an expectancy perspective, the reason people begin drinking, maintain drinking, sometimes abuse alcohol, and even become alcohol dependent is because they expect to get a desired

outcome from alcohol consumption.[7] Much less is known about the expectancy of alcohol use in depressed patients with ADS. Few studies had compared the expectancy of alcohol use in ADS patients with and without co-morbid depression. Assessing the above factors may help to formulate effective prevention strategies. It will be helpful to prevent relapses among patients with ADS. Hence, this study was designed to assess the difference in expectancy of alcohol use and functioning in patients with ADS with and without co-morbid depression.

METHODS

Study design and sample size

A cross-sectional study with sample comprising of consecutive alcohol dependent patients admitted in Department of Psychiatry, St. John's Medical College, Bangalore for deaddiction treatment were approached for one year study period from September 2013 to September 2014. Male patients between the age of 18-65 years, fulfilling the diagnostic criteria of alcohol dependence syndrome alone or alcohol dependence syndrome with current or lifetime diagnosis of depression according to MINI PLUS. Informed consent was obtained from the patients. The study procedure was approved by institutional ethics committee. Patients with severe medical illness, mental retardation, co-morbid psychiatric illness like dementia, bipolar affective disorder, obsessive compulsive disorder, psychosis or substance use disorders other than alcohol and nicotine were excluded from the study.

Sample size was calculated as 84 with 80% power and 95% confidence interval based on the prevalence of depression of 30% in alcohol dependence patients.Ethical clearance was obtained from the institutional ethics review board (IERB) before starting the study.

Study procedure

Patients were interviewed by the primary investigator and a self-designed semi-structured proforma was used to record the socio-demographic details. Diagnosis of alcohol dependence and major depressive episode was made according to MINI PLUS, The Mini-International Neuropsychiatric Interview (M.I.N.I.) a structured diagnostic interview used to assess Axis I psychiatric illness. HMSE, Hindi mental state examination, an Indian version of the MMSE developed by Indo-US cross National dementia epidemiology study was used to screen subjects for cognitive impairment functioning. The Clinical Institute Withdrawal Assessment – Alcohol revised (CIWA - Ar) was used to assess withdrawal symptoms.

Severity of dependence on alcohol was assessed using Alcohol Use Disorders Identification Test and severity of depressive symptoms was rated on Hamilton Rating Scale for Depression (HDRS). Expectancy of alcohol use was measured using Drinking Expectancy Questionnaire (DEQ). A sixth factor, dependence, is more general and relates to perceived level of alcohol involvement. Global assessment of functioning (GAF) was used to assess the difference in functioning of alcohol dependent patient with and without co-morbid depression. They were administered HMSE to rule out cognitive impairment and CIWA Ar to quantify withdrawal on day 3 of the admission. Patient's having an HMSE score of >19 and CIWA score of <15 were included in the study. If patient had HMSE<19 or CIWA score of >15 or if he coded >1 for orientation and sensorium item, he was reassessed after 72-96hours for the same. Later patients were interviewed with MINI PLUS. After applying diagnostic criteria patients were grouped into three groups. Group A, alcohol dependence only; Group B, alcohol dependence with life time diagnosis of major depression and Group C, alcohol dependence with current depression.

All patients were administered with drinking expectancy questionnaire (DEQ), Alcohol use disorders identification test (AUDIT) and Global assessment of functioning (GAF). Group B and C patients were, in addition, administered the Hamilton rating scale for depression (HAM D). Group C patients were reassessed on day 14 with HAM D. Those who continued to have depression (i.e., HAM D score on day 14 of at least half of day 3 score) were grouped under group B and those who no longer reported depression (i.e., HAM D score of less than half of day 3 score) were recategorized under group A. The groups were renamed as group 1 having ADS with depression (Group B and Group C who continued to have depression on Day 14) and group 2 with ADS only (Group A and Group C who did not have depression on Day 14).

Statistical analysis

Data collected was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Data distributions were examined for normality. Categorical variables are expressed as numbers and percentages. The non-normal data were reported using median and inter-quartile range. Categorical variables were compared using Pearson chi-square/Fishers exact test. To test the difference between each group t tests and Mann-Whitney U Test were used. Statistical significance was assumed for $p \leq 0.05$.

RESULTS

A total number of 96 subjects were included in the study. We clubbed subjects with lifetime and current depression in one group. They were hence divided into group 1 (45.38±9.18 years) i.e. ADS with depression (n=24), which included ADS with lifetime depression (n=10) and current depressive episode (n=14) and group 2 (40.96±10.96 years) that included ADS only (n=72) (Figure 1). Prevalence of depression in alcohol dependence patients was hence 25%. There was no significant difference (p>0.05) between the mean age in

alcohol dependent patients with and without co-morbid depression.

Majority of subjects were married, Hindus had education at intermediate level or more in both the groups Majority of the subjects in both the groups had monthly income of more than Rs.16,020. There was no significant difference between two groups in socio-demographic profile in terms of marital status, religion, education and income except for Group 1 having more farmers and subjects having clerical work and Group 2 with more Skilled and Semiskilled workers within the group (Table 1). Socioeconomic status was compared after classifying according to Kuppuswamy's classificatory system. Majority of Group 1 subjects (54.17%) and Group 2 subjects (56.94%) belonged to upper and upper middle socioeconomic status and no significant difference observed between groups.

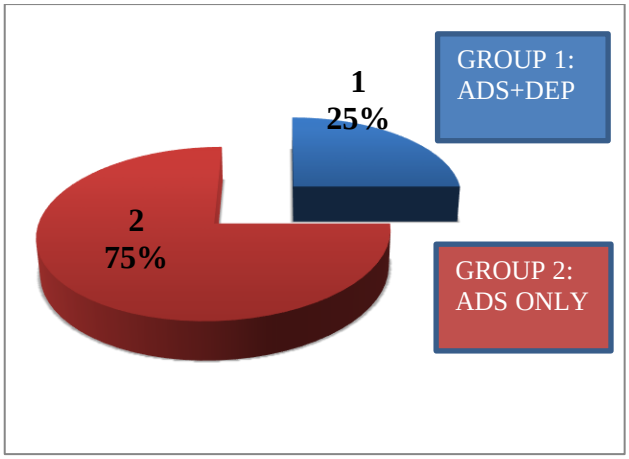

Figure 1: Distribution of percentage of subjects in Group 1 and 2.

Table 1: Comparison of demographics of the study groups.

Variable	Category	Group 1 ADS+DEP N (%)	Group 2 ADS N (%)	p value
Marital status	Single and separated	5 (20.83)	11 (15.28)	0.364
	Married	19 (79.17)	61 (84.72)	
Religion	Hindu	17 (70.83)	49 (68.06)	0.507
	Others	7 (29.17)	23 (31.94)	
Education	Above intermediate	11 (45.83)	31 (43.06)	0.879
	High school	6 (25)	16 (22.22)	
	Middle school	7 (29.17)	25 (34.72)	
Income	>16,020	11 (45.83)	36 (50)	0.920
	8010-16019	8 (33.33)	21 (29.17)	
	<8009	5 (20.84)	15 (20.83)	
Occupation	Professional, Semi professional	6 (25)	14 (19.44)	0.008*
	Clerical, Farmer	13 (54.17)	18 (25)	
	Skilled, Semiskilled	5 (20.83)	40 (55.56)	
SES	Upper, Upper middle	13 (54.17)	41 (56.94)	0.498
	Lower, Lower middle	11 (45.83)	31(43.06)	

Table 2: Comparison of family type and residence of the study groups.

Variable	Category	Group 1 ADS+DEP N (%)	Group 2 ADS N (%)	p value
Family type	Nuclear	20(83.4)	47(65.28)	0.316
	Extended	3(12.5)	22(30.56)	
	Joint	0(0)	2(2.78)	
	Living alone	1(4.1)	1(1.38)	
Residence	Rural	2 (8.3)	13(18.06)	0.234
	Suburban	6 (25)	9(12.5)	
	Urban	16(66.7)	50(69.44)	

Majority of Group 1 subjects (83.4%) and Group 2 subjects (65.28%) lived in nuclear family and belonged predominantly to urban back ground with Group 1, 66.7% against 69.44 in Group 2 (Table 2). There was no significant difference between the two groups in terms of socioeconomic status, type of family and residence.

When comparing the expectancies of alcohol use among alcohol dependent patients with and without co-morbid depression, there was no significant difference between the two groups in terms of assertion, affective change, dependence, cognitive change and tension reduction. But there was a significant difference in the expectancy of sexual enhancement in both the groups with median score of 12 in Group 1 and 16 in Group 2 (Table 3).

Table 3: Comparison of drinking expectancy of the study groups.

	Group	Median (inter quartile range)	p value
Assertion	ADS+DEP	36 (30-38)	0.740
	ADS	35 (32-38)	
Affective change	ADS+DEP	39.5 (36-46)	0.209
	ADS	40 (20.25-26.75)	
Dependence	ADS+DEP	24.5 (20.25-26.75)	0.066
	ADS	26 (23-28)	
Sexual enhancement	ADS+DEP	12 (10-16)	0.032*
	ADS	16 (12-20)	
Cognitive change	ADS+DEP	10 (9-12.75)	0.141
	ADS	16 (10-14)	
Tension reduction	ADS+DEP	12 (10.25-13.75)	0.391
	ADS	12 (10.25-14)	

Comparison of Global assessment of functioning showed a significant difference between the two groups. Patients with alcohol dependence with co-morbid depression were had poorer overall functioning compared to patients with alcohol dependence syndrome (Table 4).

Table 4: Comparison of global assessment of functioning.

	Group	Median	1st quartile	2nd quartile	p value
GAF scores	ADS+DEP	66	60	69	0.034
	ADS	68	65	70	

There were no significant differences in AUDIT scores between alcohol dependence only group and alcohol dependence with co-morbid depression group.

Table 5: Comparison of audit scores of the study groups.

	Group	Median (inter quartile range)	p value
Audit total scores	ADS+DEP	32 (27.25- 34.75)	0.124
	ADS	30 (25.00 -33.00)	

DISCUSSION

Results of this study found that comparing expectancy of alcohol use in ADS patients with and without co-morbid depression has found a significant difference in that patients with co-morbid depression are less likely to use alcohol for sexual enhancement. There were no significant differences observed in any of the other parameters linked to expectancy of assertion, affective change, dependence, cognitive change and tension reduction in this study. Amy et al.[12] among undergraduate students using drinking expectancy questionnaire to compare the difference in alcohol expectancies between depression only group, social anxiety group and a control group showed that in depression only group there was a greater tension reduction expectancy than control group and greater sexual enhancement expectancies than both control group and social anxiety group. This study findings are different from the above study where in there was no difference in expectancies of tension reduction between both the groups and that there was a lower expectancy for sexual enhancement in depressed group. Lower sexual enhancement expectancy in the depressed group is possibly linked to reduced libido, which is a core biological symptom of depression.[13] In addition, it is possible that the negative cognitions of helplessness, hopelessness, personal inadequacy etc. in patients with depression may play a role in impacting positive expectancy linked to alcohol use and should be addressed in future studies. A 3 year follow-up study done among college students by Werner et al, showed students who became problem drinkers during college had significantly higher positive outcome expectation scores at college entry and end of their junior year and developed less concern for negative outcomes by the end of their junior year.[14] Study done by Werner et al, among college students showed that students' expectations of positive outcomes and their subjective evaluations of both positive and negative outcomes from drinking were significantly correlated with drinking and alcohol-related health problems indices.[15] Heavier-drinking students and those reporting more health problems expected more positive effects on their sociability and sexuality and were less concerned about cognitive and behavioural impairment as a result of drinking. Students with more health problems were less concerned that drinking would lead to risk-taking or aggressive behaviour. Thus positive and negative outcome expectancies and their subjective evaluations accounted for a significant portion of the variability in drinking and alcohol-related health problems.[15]

In this study there was no significant difference observed in terms of drinking severity as per AUDIT scores. The Task Force on College Drinking, commissioned by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), designated alcohol expectancy challenges (ECs) as a recommended treatment strategy to reduce alcohol use among college students (NIAAA).[16] Thus modifying alcohol expectancies should be an important component of a successful relapse prevention program.

Comparison of global assessment of functioning showed a significant difference in GAF scores where in depressed group scored less (median score-66) than the non-depressed group (median score-68). This may be due to more absenteeism from work, poor productivity, poor interaction, poor communication and quality of relationships due to added burden of both the diseases. At 3-month follow-up both groups of participants (i.e. those

with and without DSM-IV co-morbid anxiety and/or depression) were significantly less disabled and also drank significantly less alcohol on an average drinking occasion than at baseline. Despite this, the co-morbidity group remained more disabled and drank more heavily than the non-co-morbid group at follow-up.[17] In this study the lower functioning in the depressed group may be due to added burden of both the diseases rather than due to increased severity of drinking as there was no significant difference in severity of alcohol use observed among our study groups.

There are some limitations of this study. The study is done on a clinical sample. Hence, authors cannot generalize the above findings to general population. Additional information about the age of onset of alcohol use in dependence pattern and family history of alcohol dependence and depression or any other psychiatric illness among the two groups would have helped to compare and understand the above factors between both the groups.

Strengths of the study includes various points. This study although limited to alcohol dependent patients admitted to a tertiary care center has important findings that fill lacunae in research linked to expectancy of alcohol use in patients with major depression compared to patients of ADS without co-morbid depression. In addition, we carefully categorized and established a diagnosis of depression in patients with alcohol dependence syndrome. We specifically included only those subjects in the co-morbid group where depressive symptoms persisted beyond the period of withdrawal symptoms. Specifically focusing on the expectancy of alcohol use in both the groups may help identify factors linked to relapse prevention in both the groups and better treatment outcomes

CONCLUSION

ADS patients with co-morbid depression had lower alcohol expectancy on sexual enhancement compared to ADS only patients whereas no difference in expectancy was observed in terms of tension reduction, affective change, cognitive change and assertion. They also had lower functioning despite no difference in severity of alcohol use, could be due to added burden of both the diseases.

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