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ASSESSMENT OF DEPRESSION AND SEXUAL DYSFUNCTION IN MEN WITH ALCOHOL DEPENDENCE

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Abstract

Background: Alcohol dependence (AD) is a disorder of regulation of alcohol use arising from repeated or continuous use of alcohol, that often coexists with a range of psychiatric and physiological issues. Among these, depression and sexual dysfunction are particularly prevalent and significantly impact life.

Aim & Objectives : This study aims to assess the prevalence, severity, and interrelationship between depression and sexual dysfunction in men diagnosed with AD.

Methodology: A cross-sectional study was conducted involving 110 male participants with AD, recruited at psychiatry department of AIMS & RC. Participants were assessed using Hamilton scale for depression (HAMD) for depression, and the Arizona sexual experience scale (ASEX) for sexual dysfunction.

Results: The results revealed a Mean age at onset of AD was 35.65±5.33, mean HAM-D score was 18.45±3.36 and mean ASEX score 21.07±4.40. A prevalence of moderate depression (65.5%), severe depression (5.5%), and sexual dysfunction (77.25%) among the participants. The most common sexual issues identified were erectile dysfunction, difficulty reaching orgasm, and dissatisfaction with orgasm. A strong positive correlation was found between the severity of depression and the degree of sexual dysfunction (p value 0.01). These findings show significant relationship between AD, depression, and sexual health.

Conclusion: This study highlights the importance of routine comprehensive clinical assessments in men with alcohol dependence with especial emphasis to assessment of depressive disorder and sexual health.

Keywords: Alcohol use disorder, Alcohol dependence, Depression, Sexual health, Sexual dysfunction

INTRODUCTION

Alcohol dependence is a disorder of regulation of alcohol intake arising from repeated or continuous use of alcohol.(1) The characteristic features are strong internal drive to use alcohol, which is manifested by impaired ability to control use, increasing priority given to use over other activities and persistence of use despite harmful or negative consequences. These experiences are often associated with subjective sensation of urge or craving to use alcohol.

In alcohol dependent persons physiological features of dependence may include tolerance to the effects of alcohol, withdrawal symptoms following cessation or reduction in use of alcohol, or repeated use of alcohol or pharmacologically similar substances to prevent or alleviate withdrawal symptoms. The features of alcohol dependence are usually evident over a period of at least 12 months but the diagnosis may be made if alcohol use is continuous (daily or almost daily) for at least 1 month. According to WHO report 2014, 30% of the total population consumed alcohol in a year, of which 50% fell under the category of hazardous drinking. [2]

The average age of initiation of alcohol use is also been reduced from 28 years during the 1980s to 17 years in 2007.(3) Reports are showing an increasing pattern of alcohol dependence in India. In a report published in 2015, per capita consumption of alcohol in India has raised by 55%.(4) A recent report from the National Mental Health Survey (2015-16) in India showed that there is a high prevalence of substance use disorders (SUDs) of 22.4%, of which the prevalence of alcohol use disorder (dependence and harmful use) was 4.6%.(5) The report showed that India has been rated 4 on a scale of 0-5 in the "Years of Life Lost Scale". The report of the National Survey on Extent and Pattern of Substance Use in India, 2019 reported that Chhattisgarh is one among the states with a higher prevalence of alcohol use disorders (>10%).

Various internal and external risk factors interact differently in individuals contributing to the development of alcoholism[6]. Internal factors include genetics, psychological conditions, personality factors, personal choice, and drinking pattern history. External factors include family, environment, religion, social and cultural norms, age, education, and job status.

Alcohol use affects various domain of an individual's life like physical health, mental health, sexual health, social life, and financial aspects.[7] Alcoholism and major depression are more common than expected in the general population. Similarly, higher levels of alcohol intake are linked to more depressive effects in the general population. The rate of major depression is greater in people in treatment for alcohol abuse and dependency than in the general population. Patients of depression have been seen to have a higher incidence of alcohol use disorders.[8] Sometimes person with depression consume alcohol to suppress symptoms related to their condition, such as irritability, loss of interest, anxiety, restlessness and insomnia. Alcohol intake sometimes become a way to escape reality and to get relaxation. Unfortunately, using alcohol as a way to self-medicate depression can significantly impact physical and emotional well-being.

Chronic and persistent alcohol intake is known to induce sexual dysfunction, which leads to marked distress and interpersonal difficulty.[9] This, in turn, is known to worsen the alcohol abuse. Sexual dysfunction in the alcohol dependent men may be due to the depressant effect of alcohol itself, alcohol-related diseases etc.

Aims and objective: The present study aimed was to determine the prevalence and severity of depression and sexual dysfunction among men diagnosed with Alcohol Dependence. Primary objective was to assess severity of depressive symptoms and prevalence of various sexual dysfunctions. Secondary objective was to correlate above parameter with the sociodemographic profile and clinical profile of the participants.

MATERIALS AND METHODS

Study design & site: It was a cross sectional study conducted at department of psychiatry, Ananta institute of medical sciences and research centre, Rajsamand, Rajasthan. The study received ethical approval from the Institutional Ethical Committee (Ref no. AIMS/IEC/2023/120).

Study duration : The study duration was 18 months (July 2023 to December 2024).

Study population: The study population included cases of alcohol dependence who consented to participate and fulfilled the inclusion and exclusion criteria. The include participants were married males of age 18 year and above, with a diagnosis of alcohol dependence as per ICD 11 diagnosed separately by two psychiatrists. Participants with diagnosed major psychiatric disorder, chronic medical diseases, those in active alcohol withdrawal state, consuming substance other than alcohol and nicotine, taking any medicine that could affect their sexual function, diagnosed cases of dementia, delirium and other organic disorders, mental retardation, not willing to provide consent were excluded.

Sample size: Final sample size of the present study was 110 men with alcohol dependence.
Estimated true proportion - 0.65
Desired precision (+/-) - 0.05
Confidence level - 95% (z value = 1.96)
Population size (for finite populations) - 150 (for limited number of case and duration)
Sample size was calculated using the formula: n = (Z2 x P x (1 - P))/e2 Where- Z = value from standard normal distribution corresponding to desired confidence level (Z=1.96 for 95% CI)- P was expected true proportion- e was desired precision (half desired CI width).for small populations n can be adjusted so that n (adj) = (Nxn)/(N+n).
Adjustment for finite population size was described by Thrusfield M. [10]
Minimum sample size = 105
So after 5% of adjustment calculated final sample size was 110.

Study tools:

- A semi structured performa was designed that included **sociodemographic variables** (age, religion, domicile, education, type of family, and socioeconomic status as calculated by modified kuppu swami scale 2023), and **Clinical variables** (age at first drink in year, age at regular alcohol drinking in year, last intake of alcohol in days, number of units of alcohol consumption per day and duration of nicotine use in years).
- The severity of alcohol dependence was assessed using **Severity of Alcohol Dependence Questionnaires** (SAD-Q). [11] SADQ, have five aspects (each having four items) covering physical withdrawal, affective withdrawal, withdrawal relief drinking, alcohol consumption, and rapidity of reinstatement. A score of 31 or higher indicates "severe alcohol dependence", a score of 16 -30 indicates "moderate dependence", and a score of below 16 indicates only a mild physical dependency.
- Alcohol withdrawal state at the time of assessment of the participants was excluded using **Clinical Institute Withdrawal Assessment of Alcohol Scale, revised** (CIWA-Ar).[12] Three components (tremor, paroxysmal sweats, agitation) of total 10 components are rated by observation alone. The other 7 components require discussion with the patient. The CIWA-Ar scale can measures 10 symptoms. Scores of less than seven was taken as exclusion of alcohol withdrawal in the present study as in past Indian study. [13]

- **Hamilton rating scale for depression** (**HAM-D**) [14] was used for screening of depression. It is the most widely used clinician-administered depression assessment scale. We used the original version of the scale pertaining to symptoms of depression experienced over the past week. A score of 0–7 is no depression, 8-13 mild depression, 14-18 moderate depression, 19-23 severe depression while a score of 23 or higher is extreme severe depression.

- The sexual dysfunctions were assessed using **The Arizona Sexual Experiences Scale (ASEX)** [15]. ASEX is a questionnaire commonly used in clinical trials to assess sexual functioning. These functioning are desire, arousal, penile erection, orgasm and satisfaction. The total score is from 5 to 30. Higher scores show higher the severity of sexual dysfunction. The ASEX global score >19 or score of 4 on three domains but global score <19 or score of 5 on any one domain but global score < 19 was taken as presence of sexual dysfunctions.

Study Procedure: A total of 110 patients were selected for the study. A written informed consent was obtained and screening was done for all the participants. The data about sociodemographic variables and clinical variables were collected using a semi structured sociodemographic proforma. SAD-Q was administered to find the severity of the dependence, HAM-D was applied to assess the depression among the dependent patients, ASEX was administrated to assess the sexual dysfunctions.

Statistical analysis: Data analysis involved calculation of mean and standard deviation. Chi-square test and Pearson's correlation coefficient were used to evaluate the statistical significance.

RESULTS

The participants of the current study were a total of 110 patients who screened positive for alcohol dependence and were fulfilling the inclusion criteria and exclusion criteria. Mean age of the participants was 35.65 years (SD 5.33).

Table 1 Sociodemographic variables

Variable	Number (N)	Percentage (%)
Religion		
Hindu	103	93.6
Islam	5	4.5
Buddhism	2	1.81
Domicile		
Rural	78	70.9
Urban	32	29.1
Education		
Illiterate	1	0.9
Literate	3	2.7
Primary	21	19.5
Secondary	79	71.8
Graduate	6	5.5
Type of family		
Joint	66	60
Nuclear	25	22.7
Extended nuclear	19	17.3
Socioeconomic status		
Upper (26-29)	0	0
Upper middle (16-25)	0	0
Lower middle (11-15)	19	17.3
Upper lower (5-10)	91	82.7
Lower (<5)	0	0

In table 1 shows that majority of participants were Hindu by religion, living in rural domicile, educated up to secondary level, residing in joint family and from upper lower socioeconomic status.

Table 2 Associated clinical variables

Variable	Mean	SD
Age at first drink (year)	24.80	3.32
Age at regular alcohol drinking (year)	26.08	3.15
Last intake of alcohol (days)	4.78	1.25
Alcohol consumption per day (number of units)	18.03	3.88
Duration of nicotine use (years)	11.8	7.9

SD -(standard deviation)

Table 2 shows mean of various clinical variables
The mean score of SAD-Q for the group was 28.88 (SD 5.92) that denoted the moderate alcohol dependence, with a range 15-43. The mean of HAM D score in the group was 18.45 (SD 3.36) which denoted moderate depression and the range was 12-28. The distribution of severity of depressive symptoms as per HAM-D scoring was mild depression in 32 (29.1%), moderate in 76 (65.5%), severe in 6 (5.5%).

Table 3 Distribution of sexual dysfunction variables as per AESX scale

Variables	Alcohol dependence participants (N =110)	Percentage (%)
ASEX global score >19	79	71.81 %
ASEX score 4 on three domains but global score<19	3	2.72 %
Score 5 on one domain but global score <19	3	2.72 %
Total number of patients with sexual dysfunction	85	77.27 %
Low sexual drive/ desire	39	33.45 %
Difficulty in sexual arousal	47	42.72 %
Erection dysfunction	63	57.27 %
Difficulty in reaching orgasm	61	55.45 %
Dissatisfaction with orgasm	60	54.54 %

N= number of participants

Table 3 shows that majority of the participants (77.27%) had sexual dysfunction on assessed using by ASEX score. The distributions of sexual dysfunction using ASEX showed that 63 participants (57.27%) reported erectile dysfunction, 61(55.45) participants reported difficulty in reaching orgasm, 60 (54.54%) participants reported dissatisfaction with orgasm, 47(42.72%) reported difficulty in reduced sexual arousal and 39 (35.45%) participants reported low sexual drive.

Table 4 Correlation among duration of regular alcohol use, severity of depressive symptoms using HAM-D scale, and sexual dysfunctions on ASEX scale

Variables	Correlation coefficient	*p*- value
Duration of regular alcohol use Vs HAM-D	0.08	0.38
Duration of regular alcohol use Vs ASEX	0.32	**0.001** (highly significant)
HAM-D Vs ASEX	0.22	**0.01** (significant)

Table 4 shows the duration of regular alcohol use correlated positively with severity of depression (correlation coefficient 0.08) but it was not statistically significant (*p* value 0.38). The duration of alcohol dependence correlated positively with severity of sexual dysfunction (correlation coefficient 0.32) and it was statistically highly signification (p-value 0.001). The depression and sexual dysfunction correlated positively (correlation coefficient 0.22). it was statistically significant (*p* value 0.01).

DISCUSSION

In present study, the mean age of the participants was 35.65 years. Mean age of the study participants in the study conducted by Prabhakaran *et al*. [7] was 39.14 years, In Bhainsora *et al.*[16] the mean age of the study participants was 35.62 years. In study by Arackal and benegel [17] the mean age was 37 years, whereas it was 39 years in the study conducted by saha.[18] In the present study, majority of the study participants were from Hindu religion(93.6%). In study by Bhainsora et al. [16] majority of the study participants were from Hindu religion(97%). Ghogare and Saboo [19] observed a similar finding with majority of the study participants (60%) belonging to Hindu religion. Vaishnavi *et al*. [20] observed similar results with 85.5% being Hindu. This reflects diffrent alcohol related norms in many Hindu communities according to geographical area. In the present study, majority of the study participants (60%) were from joint family and rural area of residence (70.9%) In Bhainsora et al.[16] study, majority of the study participants (71%) were from joint family and rural area of residence (61%).

In present study, majority of participants (71.8%) were educated upto secondary school level. Prabhakaran *et al*. [7] had conducted their study in Kerala state of India and observed that majority of the study participants (86.9%) were educated up to higher secondary school level. That study was conducted at Kerala state which had higher literacy rate. In Bhainsora *et al.* [16] study, majority of the study participants were educated up to primary school level(35.4%) and secondary level (25%).

In our study the mean age of first drink was 24.80 year and similar result was found in the study done by Chatterjee et al.[21] where the mean age of first drink was 24.85year. In this study the comorbid tobacco use was found in 85.5% of participants with alcohol dependence. Similar results were found in study done by Pendharkar et al. [14] which was 84.5% patient dependent on tobacco. By Prabhakaran et al. [7] showed 73% of patients with comorbid tobacco dependence. This implicated that people use nicotine with alcohol because of the social habits, easily acceptance of the nicotine as smoke or chewing form at society level.

In our study we found that 65.5% of participants had moderate depression. The distribution of depressive severity in our study (29.1% mild, 65.5% moderate, 5.5% severe) was comparable with the study Grant et al. [22] They found a high prevalence of depression among individuals with alcohol use disorders, with moderate depression being the most common presentation. They reported that 65-70% of individuals with alcohol dependence exhibited moderate depressive symptoms, which is consistent with our study. These finding support the dual diagnose of depression in patients with alcohol dependence. In our study the severity of alcohol dependence was moderate dependence while in study of Abdul khalid et al. [23] the severity of dependence was moderate dependence. while in study of Acharya et al.[24] the severity of dependence was high dependence.

In our study , sexual dysfunction was present in 77.27% of the participants. The results are consistent with the results by Arackal and benegal [17] showed 72% prevalence of sexual dysfunction and study done by Fahrner [25] found 75% of sexual dysfunction in patients with the alcohol dependence. Our finding showed the higher prevalence of sexual dysfunction in the alcohol dependence men where in the majority of participants were suffering from the erectile dysfunctions (57.27%) followed by difficulty to reach orgasm(54.54%). The prevalence demands assessment of sexual functions in all patients present with alcohol dependence.

On examining the correlates of sexual disfunction in this study we found a significant correlation with duration of regular alcohol use (p value= 0.0001). We found a there was positive correlation between severity of depressive symptoms and sexual dysfunction (p value-0.01), which means higher the severity off depressive symptoms more the sexual dysfunction.

Conclusion: The results of this study confirm the fact that individuals with alcohol dependence have high prevalence of sexual dysfunction. The severity of depressive symptoms, and the duration of regular alcohol consumption were positively associated with sexual dysfunction. Majority of participants had erectile dysfunction and difficulty in reaching orgasm, and had moderate depression in our study.

Limitations: There were certain limitations of this study. The study was carried out in a small sample of population, and hence the findings could not be generalized to other population groups. There was not also control group in our study. Future studies should try to overcome these limitations. In addition, future research should focus on longitudinal studies, on structured assessment of knowledge and attitude about the sex of alcohol-dependent men and on structured assessment of sexual dysfunction in partners of alcohol-dependent men.

Implication : The results of this study have implications in terms of awareness creation, improvising deaddiction services, training and further research on this special population with alcohol dependence. Furthermore, it has paved the way for understanding the need for comprehensive, feasible, and psychosocial/sexual services for patients with alcohol dependence having sexual dysfunction and co morbid depression. Moreover, this study also enlightens the need to regularly assess sexual function and depression in alcohol dependent patients

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Conflict of interest: This study was presented at the national conference of Indian Psychiatric society- 2025 in the category of free oral papers.

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