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Sexual Dysfunction in Male Patients with Alcohol Dependence Syndrome - A Clinical Study

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Abstract

Background: Sexual dysfunctions are heterogeneous group of disorders that are typically characterized by a clinically significant disturbance in a person's ability to respond sexually or to experience sexual pleasure (DSM 5). Alcohol dependence syndrome is characterized by strong desire to take alcohol, impaired control over drinking behaviour, physiological withdrawal state, evidence of tolerance, preoccupation with substance use, harmful use of alcohol. The relationship between alcohol consumption and sexual dysfunction is complex. Virtually all aspects of the human sexual response are affected by alcohol. The aim is to assess prevalence and pattern of sexual dysfunction among patients with alcohol dependence syndrome, in comparison with non alcoholics. **Subjects and Methods**: Our study included 60 participants (30 Cases and 30 Controls). Cases were patients from De-addiction ward, and controls from relatives of patients. All 60 participants were subjected to Socio-demographic profile matching and assessed for the prevalence and pattern of sexual dysfunction among patients with alcohol dependence syndrome, in comparison with non alcoholics by administering different questionnaires and inventories. **Result:** It has been found the prevalence of sexual dysfunction in multiple domains is significantly higher in alcohol dependents compared to controls. **Conclusion :** As sexual functioning is significantly affected by alcohol, proper screening for sexual functioning of all patients with alcohol dependence syndrome can result in better prognosis and quality of life of those patients.

Keywords: Sexual Dysfunction, Alcohol Dependence Syndrome.

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Introduction

Sexual dysfunctions are heterogeneous group of disorders that are typically characterized by a clinically significant disturbance in a person's ability to respond sexually or to experience sexual pleasure (DSM 5). ICD 10 defines sexual dysfunction as when the subject is unable to participate in a sexual relationship as he or she should wish[1]. Sexual function involves a complex interaction among biological, socio-cultural and psychological factors. A sexual dysfunction diagnosis requires ruling out problems that are better explained by a nonsexual mental disorder, by the effect of a substance, by a medical condition, by severe relationship distress, partner violence or other stressors. Almost all the substances affect in one way or another sexual functioning of a person and alcohol has been frequently associated with it.

Alcohol dependence syndrome is one of the most common and most researched illnesses among psychiatric disorders and it is characterized by strong desire to take alcohol, impaired control over drinking behavior, physiological withdrawal state, evidence of tolerance, preoccupation with substance use, harmful use of alcohol.[1]

The relationship between alcohol consumption and sexual dysfunction is complex. Virtually all aspects of the human sexual response are affected by alcohol: 1. Desire is reduced.

Performance, as characterized by lack of erection and premature ejaculation 3 Dissatisfaction ensues.[2]

Possible mechanisms that leads to sexual dysfunction in alcoholics includes: altered metabolism of testosterone, hepatic dysfunction ,alteration of HPG axis function, direct depressant effect of alcohol, neuro-toxic effect, interpersonal factors due to alcohol consumption.[3]

Chronic alcohol abuse is a well known factor, which induce sexual dysfunction, which leads to marked distress and interpersonal problems between partners. This, in turn worsens the alcohol abuse as a vicious cycle. Chronic alcohol consumption has systemic effects that can lead to changes in

sexual function. These changes persist even after alcohol has been completely removed from system. In some cases sexual dysfunction may be due to reversible vagal neuropathy, and the dysfunction may be reversed with abstinence.

Several studies have been focused on the various physical and psychiatric complications of alcohol consumption till date. But only few studies have compared the direct effect of alcohol on sexual functioning. Among these studies erectile dysfunction was the main concern and other sexual dysfunctions was not taken in account. So in this study we tried to focus on various domains of sexual dysfunctions in alcohol dependent patients and compared it with non alcoholics. By identifying and reporting this sexual dysfunction awareness can be created among clinicians to focus on these problems to reduce the morbidity and enhance the quality of life.

Hypothesis

Prevalence of sexual dysfunction is higher among the persons with alcohol dependence compared to non alcoholics.

Aim and Objective

- To assess the prevalence and pattern of sexual dysfunction among patients with alcohol dependence syndrome, in comparison with non alcoholics.
- To assess the pattern of sexual dysfunction in relation to duration of alcohol consumption.

Subjects and Methods

Study Design: It was a mono-centric, cross sectional case control study.

Study Approval: The study was approved by the Institutional Ethical Committee of the Mental Health Institute, MHI, S.C.B Medical College and Hospital, Cuttack, Odisha. Informed written consent was mandatorily obtained from the participants before participating in the study.

Study Place: The study was conducted in only one center i.e., Department of Psychiatry, Mental Health Institute, MHI, S.C.B Medical College and Hospital, Cuttack, Odisha.

Study Duration: September, 2018 to August, 2019.

Sample Size: A total of 60 participants were included in this study. Study Group or Case Group consisted of 30 cases from patients admitted for De-addiction treatment Department of Psychiatry, Mental Health Institute, MHI, S.C.B Medical College and Hospital, Cuttack and Control Group consisted of 30 participants from relatives of patients admitted in both Psychiatry and De-addiction ward.

Inclusion Criteria

- Male Patients in the age group of 18-50 years.
- Patient meeting the criteria for Alcohol Dependence Syndrome as per ICD-10 research diagnostic criteria chosen as case for study group.
- Persons who have not been consuming alcohol for the past one year and no evidence of alcohol dependence before that are chosen as control for control group.

Exclusion Criteria

- Patients who has present and past history of medical illness and psychiatric illness or history of mental retardation and dementia.
- Substance use other than alcohol for Cases and any substance use for Controls.
- Patients with history of chronic drug intake which are known to cause sexual dysfunction for the past one year like -antipsychotics, antidepressants, anti- hypertensive, steroids, etc.

Study Procedure

Informed written consent was obtained from all the 60 participants (30 Cases and 30 Controls). All 30 Cases were needed to fulfill criteria for Alcohol Dependence Syndrome in ICD-10 Research Diagnostic Criteria (WHO). Socio-demographic profile of all 60 subjects was recorded in the semi-structured proforma. Alcohol use disorders and various domains of sexual dysfunctions were identified by administering different questionnaires and inventories. [Figure 1].

Instruments Used

- Proforma for socio-demographic data
- Modified Kuppusamy's socio-economic scale
- Alcohol use disorders identification test (AUDIT)
- International index for erectile function questionnaire (IIEF)
- Premature ejaculation diagnostic tool (PEDT)

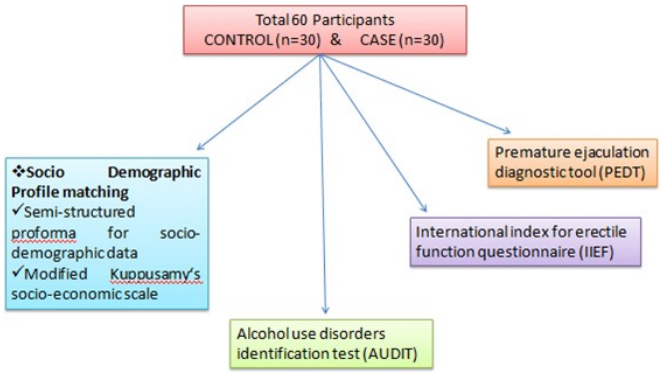

Figure 1: Schematic representation of Study Procedure

SOCIO-ECONOMIC SCALE (S. E. Gupat and B.P.Sethi 1978, Kuppusamy 1961):- This scale was devised by Kuppuswamy and consists of composite score, which includes the education and occupation of head of the family along with income per month of the family, which yields a score of 3-29. This scale classifies the study population into 5 SES: upper, upper middle, lower middle, upper lower, lower.

ALCOHOL USE DISORDERS IDENTIFICATION TEST (AUDIT):- The AUDIT (Babor et al. 2001) assesses three domains includes in ICD-10 for alcohol use disorders: Alcohol dependence; Harmful drinking; and Hazardous drinking.[4] The 10-item core self-report or clinician-administered covers three different aspects of drinking:

- Quantity and frequency of alcohol use indicative of hazardous alcohol use (item1-3)
- Indicators of dependence (item4-6); and
- Adverse consequences suggesting harmful use (item 7-10). The items are scored 0 (never) to 4 (daily or almost daily) for most items and are added together, with total scores ranging from 0-40.

INTERNATIONAL INDEX OF ERETILE FUNCTIONING (IIEF):- The IIEF is a 15- item self-report inventory designed to provide a brief, reliable, and valid measure of erectile function and capacity. The five major measurement domains of the IIEF are Erectile Function, Orgasmic Function, Sexual Desire, Intercourses Satisfaction and Overall Satisfaction. Screening studies for erectile dysfunction using the Erectile Function domain established a score of 25 as a cut-off for erectile dysfunction, with sensitivity of 0.97 and specificity of 0.88.[5]

PREMATURE EJACULATION DIAGNOSTIC TOOL (PEDT)[6]:- It is a simple and widely accepted tool developed to standardise the diagnosis of premature ejaculation in studies. It was designed to find out the main components of DSM IV-TR includes: Control, frequency, minimal sexual stimulation, distress, and interpersonal difficulty. The cut off point for premature ejaculation was set at 11, so that 11 and above score is interpreted as definite PE and score of 9 and 10 was agreed as borderline PE. A score of 8 and below indicate low likelihood of PE.[7]

Statistical Analysis: The two groups were matched in respect of socio-demographic profile to identify the confounding variables using chi-square test and student t-test. The prevalence of sexual dysfunction was identified by comparing the two groups in respect of their alcohol dependence by respective tests of significance. Statistical analysis was performed by using SPSS software (version 20). The p-value of less than 0.05 ($p<0.5$) was treated as statistically significant.

Result

Socio-Demographic profiles of the Case and Control Groups were matched for age, education, locality, occupation, income and religion (Table-1). There was no statistically significant difference between the Case and Control Groups with regard to Socio-Demographic profile matching.

It has been found that the prevalence of at least one sexual dysfunction among case is higher (76.6%) than control (36.6%). The prevalence of more than one sexual dysfunction in case (63.3%) is also higher than control (23.3%). [Table 2 & Figure 2]

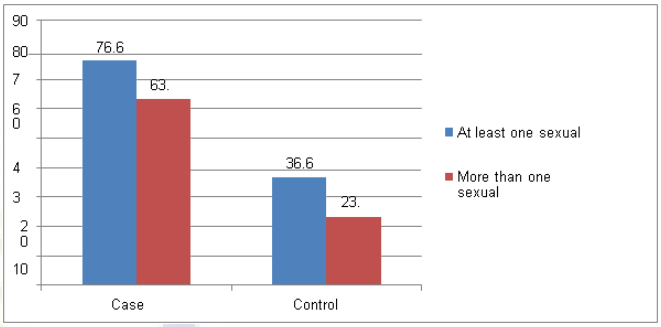

Figure 2: Bar Diagram comparing Overall Prevalence of Sexual Dysfunctions in Case and Control

Comparison of five major measurement domains of the IIEF (Erectile Function EF, Intercourse Satisfaction IS, Orgasmic Function OF, Sexual Desire SD and Overall Satisfaction) was done between the Case and Control Groups [Table 3]. There is no statistically significant difference between case and control with regard to Erectile Function EF domain of IIEF. However, there was a statstically significant difference with regard to Intercourse Satisfaction IS, Orgasmic Function OF, Sexual Desire SD and Overall Satisfaction OS domains of IIEF between the Case and Control Groups.

It is found that majority of cases [63.3%] and controls [73.5%] had no premature ejaculation [Table 3]. There is no statistically significant difference between case and control with regard to premature ejaculation.

Based on the above findings [Table 4], it is observed that Intercourse Satisfaction, Orgasmic Function, Sexual Desire, Overall Satisfaction has been significantly lower in patients with alcohol dependence syndrome compared with non-alcoholics.

Correlation between Duration of Alcohol Consumption and IIEF Domains and Premature Ejaculation Score [Table 5 & Table 6]

It has been found that there exist a Negative association between Duration of alcohol consumption and Erectile func-

Table 1: Table Showing Socio-Demographic Profile of Casesand Controls

S. No.	Variables	Case (=30)		Control (N=30)		Statistical
			%		%	
1	Age Below 32 32-42 43 and above	6 18 6	20 60 20	7 17 6	23.3 56.7 20	X2 - 0.0185 df - 2
2	Education Below primary High school and above	17 13	73.3 26.7	18 12	60 40	X2 - 0.069
3	Locality Urban Rural	22 8	73.3 26.7	15 15	50 50	X2 - 3.455
4	Occupation Semiskilled Skilled Business	8 14 8	26.7 46.7 26.7	10 9 11	33.3 30 36.7	X2 – 01.783 df - 2
5	Income					
	Below 5000 5000-10000 Above 10000	5 18 7	16.7 60 23.3	5 17 8	16.7 56.7 26.7	X2 – 0.095 df – 2
6	Religion Hindu Non Hindu	26 4	86.7 13.3	27 3	90 10	X2 – 0.162

*P < 0.05

Table 2: Table showing Overall Prevalence of Sexual dysfunctions among Case and Control

S. No.	Prevalence	Case (%)	Control (%)
1.	At least one sexual dysfunction	76.6	36.6
2.	More than one sexual dysfunction	63.3	23.3

Table 3: Showing Sexual Dysfunctions in various Domains among Case and Control

S.	Variables		Case (N=30)		Control (N=30)		Statistical
			N	%	N	%	
1	IIEF: EF	Dysfunction	12	40	6	20	X^2 =2.857 df =1
		No dysfunction	18	60	24	80	
2	IIEF: IS	Dysfunction	19	63.3	5	16.7	X^2=13.611* df =
		No Dysfunction	11	36.7	25	83.3	
3	IIEF: OF	Dysfunction	9	30	2	6.7	X^2 = 5.455* df
		No Dysfunction	21	70	28	93.3	
4	IIEF: SD	Dysfunction	13	43.3	2	6.7	X^2=10.756* df =
		No Dysfunction	17	56.7	28	93.3	
5	IIEF: OS	Dysfunction	15	50	5	16.7	X^2 = 7.500* df =
		No Dysfunction	15	50	25	833	
6	PEDT	Present	11	36.7	8	26.7	X^2 = 0.693 df –
		Absent	19	63.3	22	73.3	

Table 4: Showing Comparison of Sexual Dysfunction invarious Domains between Case and Control

S. No.	Variables	Case (N=30)		Control (N=30)		-tz
		Mean	SD	Mean	SD	
1	IIEF: EF	24.17	6.35	26.53	4.46	-1.644
2	IIEF: IS	10.40	3.11	13.13	2.04	-4.018*
3	IIEF: OF	8.40	2.19	9.83	0.53	-3.483*
4	IIEF: SD	8.33	1.62	9.43	1.04	-3.122*
5	IIEF : OS	7.70	2.27	9.17	1.39	-3.011*
6	Premature ejaculation	6.63	5.95	4.45	3.04	1.802

Table 5: Showing comparison of erectile function, intercourse satisfaction, orgasmic function, sexual desire, overallsatisfaction and premature ejaculation in relation to audit score among cases

S. No.	Variable			Audit Score
1.	Erectile Function	Dysfunction (N=12)	Mean	30.92
			SD	4.11
		Non Dysfunction (N=18)	Mean	28.06
			SD	4.58
		_t' value		-1.702
2.	Intercourse Satisfaction	dysfunction (n=19)	Mean	30.68
			SD	3.84
		Non dysfunction (n=11)	Mean	26.64
			SD	4.98
		_t' value		2.492*
3.	Orgasmic Function	Dysfunction (n=9)	Mean	30.89
			SD	4.86
		Non dysfunction (n=21)	Mean	28.48
			SD	4.49
		_t' value		-0.310
4.	Sexual Desire	Dysfunction (n=12)	Mean	32.23
			SD	3.37
		Non dysfunction (n=18)	Mean	26.88
			SD	4.19
		_t' value		-3.757*
5.		Dysfunction (n=15)	Mean	29.67
	Overall Satisfaction		SD	4.68
		Non Dysfunction (n=15)	Mean	28.73
			SD	4.62
		_t' value		-0.542
6.	PREMATURE	present (n=11)	Mean	30.91
			SD	4.68
		absent (n=18)	Mean	28.21
			SD	4.47
		_t' value		1.568

*P < 0.05

Table 6: Table Showing Correlation Matrix For The Selected Subject Variable

VARIABLES	DURATION OF ALCOHOL CONSUMPTION
IIEF : EF	-0.011
IIEF :IS	-0.164
IIEF :OF	0.072
IIEF :SD	-0.287
IIEF :OS	-0.02
PEDT	0.052

tion, Intercourse satisfaction, Sexual desire, overall satisfaction domains of IIEF [r = - 0.011,- 0.164,- 0.287,- 0.02respectively] which means as the duration of alcohol consumption increases the scores of erectile function, intercourse satisfaction, sexual desire and overall satisfaction decreases. This indicates higher the duration of alcohol consumption, higher will be the erectile dysfunction, intercourse dissatisfaction, impaired sexual desire and overall dissatisfaction. However, there exists no significant relationship. [Table 5 & Table 6]

It has been found out that there exist a positive association between Duration of alcohol consumption and Orgasmic function domain of IIEF and PEDT [r = 0.072, r=0.052 respectively] which means that as the duration of alcohol consumption increases, the orgasmic function and premature ejaculation scores increases. This indicates higher the duration of

alcohol consumption lower the orgasmic dysfunction and higher the premature ejaculation. However, there exists no significant relationship. [Table 6]

Discussion

To our knowledge few number of international studies and very few number of Indian studies have compared sexual dysfunction due to alcohol consumption with non alcoholics. Among those studies, most of the studies focused on the erectile function only, and very few studies have incorporated other domains of sexual functioning like satisfaction in sex, sexual desire, orgasmic function, and ejaculatory function.

In this study, the samples in case and control are matched well in all aspects of Socio- demographic profile.

In the present study, 76.6% of alcohol dependents had at least one type of sexual dysfunction which is significantly higher than control (36.6%). Jenson et al (1984) also replicated the similar significance in sexual dysfunction between alcoholics (63%) and controls (10%).[8] In their study Bijil Simon et al (2007) and Vijayasenan (1981) reported the prevalence of at least one type of sexual dysfunction in alcoholics were 72% and 71% respectively which is similar to our study findings.[9,10]

The present study is comparable with the 75% prevalence of sexual dysfunction in alcoholics as reported by Fahrner (1987) but Mandel et al (1983) also reported 84% prevalence of some sexual dysfunction related to alcohol abuse which is slightly more than the prevalence of our study.[11,12] These findings indicate alcoholics are having high proportion of sexual dysfunction in comparison to non alcoholics.

In our study, more than one sexual dysfunction in a same person was found in 63.3% of alcoholics and 23.3% of non alcoholics which indicates alcoholics are having more risk of developing multiple sexual dysfunctions than non alcoholics. This is comparable with the study of Bijil Simon (2007) who reported 48% have more than one sexual dysfunction in alcoholics and 44% prevalence of two or more sexual dysfunction in alcoholics as reported by Fahrner (1984).[11]

The most common sexual dysfunction among alcoholics in present study is dissatisfaction in intercourse (63.3%). In our study, the least common one is orgasmic dysfunction (30%) in alcoholics which is similar to the findings of Bijil Simon (2007).[9]

Premature ejaculation (26.7%) is found to be the most common sexual dysfunction among non-alcoholics in our study which is similar to the study of Carson et al (2006),[13] who reported that premature ejaculation is the most common sexual dysfunction worldwide among general population. The least commonly reported sexual dysfunction among non-alcoholics in our study is low sexual desire and orgasmic dysfunction (6.7% each).[14]

When comparing the erectile dysfunction between alcoholics and non alcoholics in the present study, alcohol dependents have more prevalence of Erectile Dysfunction ED (40%) than control (20%) group. However this difference is not statistically significant. The findings of Bijil Simon et al (2007) and Fahrner (1987) are comparable to our study,[9,11] who found the prevalence of Erectile dysfunction in alcoholics around 33.3% and 22% respectively, but they did not compared it with non alcoholics. Several other studies including Chen et al (2004) and Verma et al (1998),[15] reported prevalence of erectile dysfunction in general population varied from 12% to 26%.

In our study the prevalence of intercourse dissatisfaction in alcohol dependents (63.3%) is higher than control group (16.7%). This observed difference is statistically significant which means alcohol is having adverse effect on intercourse satisfaction. This significance is comparable to the study by Boer et al (2004) who found significant association between alcohol consumption and sexual dissatisfaction.[16]

Significant difference in the prevalence of orgasmic dysfunction is found between alcohol dependents (30%) and control (6.7%) in this present study. This finding is comparable to the findings that there exist a significant association between alcohol consumption and orgasmic function by Boer et al (2004).[16]

In our study the prevalence of reduced sexual desire among alcohol dependents is 43.3%, and 6.7% among controls. There existed a significant difference between case and control with regard to sexual desire. This finding is comparable to the study of Vijayasenan (1981) who found a 58% prevalence of diminished sexual desire among alcoholics.[10] Jensen et al (1984) identified sexual desire disorder was the second common sexual dysfunction among alcoholics which was statistically significant when comparing with controls and similar prevalence (36%) obtained by Bijil Simon et al (2007).[8,9]

About 50% of alcohol dependents and 16.7% of control group have dissatisfaction in overall sexual life in our study. This higher prevalence of dissatisfaction in overall sexual life among alcoholics compared with control is statistically significant. In contrast, Bijil Simon et al (2007) found only 20% prevalence of dissatisfaction in overall sexual life among alcoholics.[9] Although the alcohol dependents have more prevalence of premature ejaculation (36.7%) in our study comparing with control (26.7%), no significant difference existed statistically. This finding is contradictory with the findings of Fahrner (1984) and Vijayasenan (1981), both of them reported premature ejaculation was the least common sexual dysfunction among alcoholics with the prevalence of 18% and 4% respectively.[9,10] Additionally, Fahrner (1984) found that the prevalence of premature ejaculation was increased after one year follow up of alcohol dependents.[11]

The International Index of Erectile Function (IIEF) scales measures the functioning of various domains of sexual dysfunction, in which lower the score higher will be the sexual dysfunction. In our study the mean score of erectile function in alcoholics (24.17) is lower than the controls (26.53) but this difference is not significant. This means alcoholics have higher erectile dysfunction than controls which is not significant statistically. The mean scores of alcohol dependents with regard to intercourse satisfaction (10.40), orgasmic function (8.40), sexual desire (8.33) and overall satisfaction (7.70) are significantly lower than controls (13.13, 9.83, 9.43, and 9.17 respectively). This indicates alcohol dependents have significantly higher dissatisfaction in intercourse, orgasmic dysfunction, impaired sexual desire and overall dissatisfaction in sex comparing with controls.

In Premature Ejaculation Diagnostic Tool (PEDT), higher the score, higher will be the dysfunction. In our study the mean score of case (6.63) is higher than control (4.43) which indicates alcohol dependents have higher premature ejaculation than controls, but this difference is not significant.

Audit: In our study although all the cases selected are having significant dependence score (>15) in AUDIT, the higher the score higher will be the chance of frequent, hazardous, quantity of drinking and dependence. The present study shows higher AUDIT score in alcohol dependents with erectile function than alcoholics without ED, but no significance is found in statistics. Our study is similar to the findings of Rosen et al (2003) who observed that the greater quantity,[17] frequency and duration of drinking were associated with erectile dysfunction. Among all sexual dysfunction in alcohol dependents, persons with intercourse dissatisfaction and low sexual desire have significantly higher score in AUDIT comparing with alcohol dependents without the relevant sexual dysfunctions. In the present study alcohol dependents with orgasmic dysfunction, overall dissatisfaction and premature ejaculation have higher score in AUDIT than alcoholics without relevant sexual dysfunction. However the difference is not significant. Rosen et al (2003) found that greater quantity and frequency was associated with low sexual desire and premature ejaculation which is comparable to our study.[17,18]

Our study population was derived from general hospital setting and the number of samples was low. So our findings could not be comparable to general population.

Measurement of Blood level of alcohol and endocrinological factors related to sexual dysfunctions could provide more relevant data regarding this study which was not possible in our setting.

Conclusion

Based on the above findings, it is concluded that the prevalence of sexual dysfunction in multiple domains is significantly higher in alcohol dependents compared to controls. Most common sexual dysfunction among alcoholics is intercourse dissatisfaction and most common sexual dysfunction in non alcoholics is premature ejaculation. Intercourse dissatisfaction, orgasmic dysfunction, low sexual desire and overall dissatisfaction are significantly higher in alcoholics and there is no difference noted in erectile dysfunction and premature ejaculation. Severity of alcoholism increases dissatisfaction and low sexual desire but does not affect other domains.

As sexual functioning is significantly affected by alcohol, proper screening for sexual functioning of all the patients with alcohol dependence syndrome can result in better prognosis and quality of life of those patients. Emphasis needs to be laid upon the history of sexual functioning of a patient with alcohol dependence syndrome, which many at times gets overlooked in a busy OPD.

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