

Perception of Sexual Dysfunction in Male Patients with Alcohol Dependence**Dr. Ashish Rana¹, Dr. Ravichandra Karkal², Dr. Anil Kakunje^{3*}, Dr. Ganesh Kini², Ms. Reeti Rastogi⁴, Dr. Jeyaram Srinivasan⁵**¹Junior Resident, Dept of Psychiatry, Yenepoya Medical College, Yenepoya University, Mangalore, India²Assistant Professor, Dept of Psychiatry, Yenepoya Medical College, Yenepoya University, Mangalore, India³Associate Professor, Dept of Psychiatry, Yenepoya Medical College, Yenepoya University, Mangalore, India⁴Clinical Psychologist, Dept of Psychiatry, Yenepoya Medical College, Yenepoya University, Mangalore, India⁵Psychiatric Social Worker, Dept of Psychiatry, Yenepoya Medical College, Yenepoya University, Mangalore, India***Corresponding author***Dr. Anil Kakunje***Article History***Received: 09.01.2018**Accepted: 20.01.2018**Published: 28.02.2018***DOI:**

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Abstract: The common notion among people is that psychoactive drugs like alcohol increases sexual activity, various studies over the years have shown some relationship between the alcohol use pattern and sexual dysfunction in males. The effect can either be because of depressant effects of alcohol itself or can due to the probable changes it brings about in the normal neurotransmitter levels and hormones associated with sexual functioning. Among the male sexual dysfunctions prevalence of premature ejaculation and erectile dysfunction has been studied most extensively. We set to look at perceptions of sexual dysfunction among male in-patients with alcohol dependence. 30 male in patients with alcohol dependence diagnosed according to International Classification of Diseases- 10 (ICD-10) without any other psychiatric co-morbidity were compared with 30 male in-patients admitted in medical ward. The Mini-International Neuropsychiatric Interview (MINI PLUS), Severity of Alcohol Dependence Questionnaire (SADQ), and Brief Sexual Functioning Inventory (BSFI) scales were used in the study. The study revealed that patients with alcohol dependence had perceived poor sexual functioning under the domains of sexual drive, erection and ejaculation. It was also found that sexual functioning worsened with increased duration of alcohol usage.

Keywords: Sexual dysfunction, perception, alcohol dependence.

INTRODUCTION

National Mental health survey 2016 conducted in India included that 34,802 individuals from 12 different states, revealed that 20.9% of the individuals used alcohol in dependence pattern or had harmful use and 4.6% abused alcohol [1].

Though the common notion among people is that psychoactive drugs like alcohol increases sexual activity, various studies over the years have shown some relationship between the alcohol use pattern and sexual dysfunction in males. The effect can either be because of depressant effects of alcohol itself or can due to the probable changes it brings about in the normal neurotransmitter levels and hormones associated with sexual arousal [2]. Among the male sexual dysfunctions prevalence of premature ejaculation and erectile dysfunction has been studied most extensively and according to study conducted by McCabe *et al.* [3]; published in journal of sexual medicine in 2015, on average 20% of males develop erectile dysfunction [3] and premature ejaculation varies between 8 to 30% in all age groups [4].

In 1973 by Lemere and Smith and in 1974 by Stankvshev reported that the chronic use of alcohol can cause neurological damage which in turn leads to

permanent sexual dysfunction, which included reduced libido and impotence. A study conducted in Tamil Nadu, India and published in American Society for Reproductive Medicine 2005; showed that alcohol adversely affects male reproductive hormones, semen quality and also reduced sexual excitement (stimulation), premature or delayed ejaculation and inability to orgasm or enjoy orgasm [5-7].

According to the study by Mirone *et al.* [8]; frequency of erectile dysfunction episodes is significantly higher in men using more than 3 glasses/day of ethanol containing drinks on daily basis [8]. A study by Fahrner *et al.* [9] reports that 75% of 101 participants who were addicted to alcohol had more than one type of sexual dysfunction; nevertheless they had normal plasma testosterone levels. The above findings suggest psychological causes for the dysfunction, which improved on behavioral treatment [9]. Schiavi *et al.* [10] further suggest that sexual

dysfunctions resolve with abstinence; as the study failed to find any difference in the prevalence of sexual dysfunctions between the group being abstinent from alcohol for 3 months and the nonalcoholic group [10].

As very few studies from India [11, 12, 6] have focused on sexual dysfunction in patients with alcohol dependence syndrome (ADS) this study would try to look at the association between the perception of sexual dysfunction and alcohol dependence syndrome.

MATERIALS AND METHODS

The study included 30 male patients consecutively admitted in de-addiction centre of Yenepoya Medical College and Hospital, Mangalore, India, with the diagnosis of alcohol dependence syndrome (ADS) with simple withdrawal according to ICD -10. This was compared with 30 male control subjects from medicine wards who were admitted and recovered from fever, cough or minor medical problems. Written informed consent was taken from all the participants. All the subjects were screened using Mini-International Neuropsychiatric Interview (MINI PLUS) scale to rule out other psychiatric comorbidities.

Inclusion Criteria

- In-patients diagnosed with mental and behavioral disorders due to use of alcohol in dependence pattern according to ICD-10 criteria.
- Patients between the ages of 18- 60 years.
- Only males

Exclusion Criteria

- Patients fulfilling criteria for other psychiatric disorders.
- Intellectual problems
- Patients with head injury, neurological conditions or hormonal problems.

All patients were assessed for severity of alcohol dependence syndrome using Severity of Alcohol Dependence Syndrome questionnaire (SADQ). It is a 20 items long, self administered scale formulated by Edwards and T Stockwell [13], consisting of five subscales, each with four items. Each subscale encompasses various aspects of dependence pattern of alcohol use like physical withdrawal, affective withdrawal, withdrawal relief drinking, alcohol consumption and rapidity of reinstatement. Each of the items is rated on a 4 point scale, starting from score 0

standing for “Almost Never” to the highest score of 3 standing for “Almost Always”. Thus minimum and maximum score attainable on the questionnaire is 0 and 60 respectively.

Patients were assessed for perceived sexual dysfunction on Brief Sexual Function Inventory (BSFI). BSFI is a brief, self reported inventory to measure the current sexual functioning in males. It consists of 11 items scored on 5 point Likert type scale covering sex drive, erectile capacity, ejaculatory function and satisfaction with sexual performance [14]. Sexual drive and ejaculation is scored between 0 and 8, and erection and problem assessment is scored between 0 and 12. The overall satisfaction is rated separately on the scale of 0 to 4. The maximum BSFI score possible is 44.

RESULTS

Socio-demographic details and clinical profile:

Mean age of the patients in the alcohol dependence group (ADS) was 36.6 ± 9.8 years and mean age of the controls was 40.1 ± 6.9 years. Majority of the participants in ADS and control group belonged to Hindu religion and were married. In the control group, 40% of the participants were educated till high school and 60% of the participants had an education above high school. In contrast, all the participants in the ADS group were educated till high school.

The average duration of alcohol use in the ADS group was 11.3 ± 6.2 years. The average score on SADS was 35.36 ± 5.17 . 10% of ADS group consisted of participants who had mild dependence and the rest 90% of the participants had moderate dependence.

We did chi-square test of independence to look for an association between presence of hypertension among the two groups, but no significant association was found ($\chi^2 = 1.92$, d.f. = 1, $p = 1.66$). Similarly we did the chi-square test of independence to look for an association between ADS and diabetes but no significant association could be ascertained ($\chi^2 = 0.317$, d.f. = 1 $p = 0.573$). The data is shown in Table 1. Sexual functioning of the participants

The average Brief Sexual Function Inventory (BSFI) score of ADS group was 15.2 ± 8.4 and of the control group was 40.2 ± 2.7 . The control group consistently scored better on all the domains of BSFI compared to ADS group (Table 1).

Table-1: Socio-demographic details and clinical profile of the patients

		ADS	Controls	t/ χ^2	p
Mean age (SD), yrs.		36.23 (9.8)	40.1 (6.9)	-1.78	0.079
Duration of alcohol use, yrs.		11.3 (6.2)			
Marital status					
	Married	24	25	0.111	0.739
	Unmarried	6	5		
Education					
	Till high school	30	12	25.71	<.001
	Above high school	0	18		
Hypertension					
	Present	3	7	1.92	1.66
	Absent	27	23		
Diabetes					
	Present	10	8	0.317	0.573
	Absent	20	22		
Sexual Drive Score		2.5±1.3	6.7±1.0		<.001
Erection Score		4.2±2.18	10.7±1		<.001
Ejaculation Score		3.16±1.8	7.6±0.6		<.001
Problem Assessment		3.9±2.9	11.5±0.6		<.001
Overall Satisfaction		1.2±1.0	3.6±0.4		<.001
BSFI Score		15.2±8.4	40.7±2.7		<.001

Participants' Perception of Various Domains of Sexual Functioning

Majority of the participants in the control group reported no problems in sexual drive, erection and ejaculation whereas majority of the participants in

the ADS group perceived their sexual drive, erection and ejaculation to be problematic in various grades as shown in Table 2.

Table 2 depicts the participants' perception of various domains of sexual functioning

Sexual Drive		ADS n (%)	Control Group n (%)
	Big Problem	7 (23.3%)	0
	Medium Problem	10 (33.3%)	0
	Small Problem	10 (33.3%)	0
	Very Small Problem	2 (6.7%)	6 (20%)
	No Problem	1 (3.3%)	24 (80%)
Erection		ADS n (%)	Control Group n (%)
	Big Problem	9 (30%)	0
	Medium Problem	11 (36.7%)	0
	Small Problem	6 (20.0%)	0
	Very Small Problem	3 (10%)	6 (20%)
	No Problem	1 (3.3%)	24 (80%)
Ejaculation		ADS n (%)	Control Group n (%)
	Big Problem	9 (30%)	0
	Medium Problem	5 (16.7%)	0
	Small Problem	13 (43.3%)	0
	Very Small Problem	1 (3.3%)	2 (6%)
	No Problem	2 (6.7%)	28 (94%)

Chronic Liver Disease (CLD) and Sexual Dysfunction

Table 3 shows the comparison of scores of BSFI and its sub domains among the ADS patients with

and without CLD using Independent Samples-t test. There were no significant differences noted between the

two groups of patients (Table 3).

Table-3: Independent Samples-t Test between BSFI scores and its Domains among ADS patients with and without CLD

	CLD	N	Mean±SD	t	P
BSFI Total Score	Present	17	13.24±5.68	-1.47	0.151
	Absent	13	17.77±10.90		
Ejaculation Score	Present	17	2.82±1.19	-1.17	0.25
	Absent	13	3.62±2.43		
Erection Score	Present	17	3.82±1.55	-1.28	0.209
	Absent	13	4.85±2.76		
Sexual Drive Score	Present	17	2.47±1.01	-0.603	0.551
	Absent	13	2.77±1.69		

Diabetes and Sexual Dysfunction

Table shows the comparison of scores of BSFI and its sub domains among the ADS patients with and

without diabetes using Independent Samples-t test. There were no significant differences noted between the two groups of patients as seen in Table 4.

Table-4: Independent Samples-t Test between BSFI scores and its Domains among ADS patients with and without Diabetes

		N	Mean	t	p- value
BSFI Total Score	Present	10	11.90±6.33	-1.53	0.135
	Absent	20	16.850±9.09		
Ejaculation Score	Present	10	2.300±1.49	-1.90	0.067
	Absent	20	3.600±1.87		
Erection Score	Present	10	3.800±1.54	-0.82	0.417
	Absent	20	4.500±2.43		
Sexual Drive Score	Present	10	2.000±0.81	-1.81	0.08
	Absent	20	2.900±1.44		

Correlation between duration of illness and BSFI total score/ Individual domain scores

A Pearson product-moment was computed to assess the relationship between duration of alcohol use and sexual functioning (BSFI total score/Individual domain scores). The negative correlation shows that as the duration of alcohol use increased the BSFI score, sexual drive score, erection score, ejaculation score significantly decreased (Table 5).

Correlation between severity of alcohol dependence and BSFI total score/Individual domain scores

A Pearson product-moment was computed to assess the relationship between severity of alcohol dependence (SADS score) and sexual functioning (BSFI total score/Individual domain scores). A negative correlation was found between SADS score and BSFI erection i.e., as severity of alcohol dependence increased, erectile dysfunction significantly increased (Table 5).

Table 5 Correlation between duration of illness and BSFI total score/ Individual domain scores

Variables		Sexual Drive Score	Erection Score	Ejaculation Score	BSFI Score
Duration Of Alcohol Use (In Years)	Pearson Correlation	-.472**	-.554**	-.409*	-.577**
	Sig. (2-tailed)	0.008	0.001	0.025	0.001
SADS Total Score	Pearson Correlation	-0.339	-.440*	-0.177	-0.267
	Sig. (2-tailed)	0.067	0.015	0.35	0.153

DISCUSSION

There was highly significant difference in sexual functioning between the ADS participant group

and the control group. The overall BSFI score in the ADS group was 15.2 (SD=8.4) in comparison to 40.7 (SD=2.7) in the normal control group. Sexual

dysfunction was prevalent among people with alcohol dependence group as depicted in previous studies [11, 15, 16]. ADS group on average rated overall satisfaction score at 30.75%. Though the scale we used does not give a prevalence of sexual dysfunction but it does give an insight into participants' perception of sexual functioning. Participants' perception on sexual drive in both the ADS and control group is highly significant. Only 1 of the 30 participants (3.3%) in the ADS group reported of 'no problem' in sexual desire in comparison to 24 of 30 (80%) in the control group. Similar results were seen in the study done by Vijayasenam *et al.* [15]; in which it was most commonly reported problem (58% of patients) making it the most severe problem [15], similarly in a study done by Akhtar *et al.* 55% reported of hypoactive sexual drive [18]. In the domain evaluating erection only 1 in 30 participants (3.3%) reported of 'no problem' in ADS group in comparison to 24 of 30 participants (80%) in control group. Comparable findings were seen in study by Akhtar *et al.* [18]; Jensen *et al.* [17]; and Grinshpoon *et al.* [19]; which revealed that, 31%, 23.8% and 85% of subjects respectively had erectile dysfunction [18, 19, 16]. In the domain evaluating ejaculation only 28 of the 30 participants (94%) reported of problem at various levels in comparison to 2 of 30 in the control group (6%). Similarly studies by Akhtar *et al.* Jensen *et al.* Vijayasenam *et al.* and Grinshpoon *et al.* revealed that 24.4%, 41.3%, 26% and 61.3% of patients with ADS respectively had problems with ejaculation [18, 19, 16, 15]. As both the groups did not differ in terms of medical co-morbidities like hypertension and diabetes mellitus which are known to influence sexual functioning, it can be assumed that the study groups were comparable.

According to the study by Villalta *et al.* sexual dysfunction can be due to the vagal neuropathy caused by alcohol which happens to be reversible [20] but according to study by Gumus *et al.* alcohol also irreversibly disturbs the gonadal hormone levels leading to sexual dysfunction [21], similarly another study on alcohol and its effects on endocrine system revealed that long term use of alcohol also reduces the release of gonadotrophins from the pituitary due to its inhibition of hypothalamic- pituitary- adrenal axis. Many studies also suggest that alcohol causes direct oxidative toxicity due to imbalance between oxidants and antioxidants (oxidants are generated during alcohol metabolism), inhibition of testosterone and spermatogenesis leading to testicular atrophy [22,23] and also suppresses the production of luteinizing hormone and follicle stimulating hormone [24].

When we compared participants in the ADS group with or without Chronic Liver Disease (CLD), there was no significant difference in sexual functioning among them. Similar findings were reported by Jensen *et al.* in a study which compared at the prevalence and

the type of sexual dysfunction in alcoholic cirrhotic men to chronic alcoholic men without overt liver disease [17]. However, another study by Cronely *et al.* revealed that alcoholic males have an increased prevalence of impotence as compared to men with nonalcoholic liver disease and also the severity of impotence in alcoholic men is far greater than in non-alcoholic men with advanced liver disease and impotence [25]. The findings of Cronely *et al.* were further confirmed in a study by Bannister *et al.* which showed that, though the liver disease per se appear to cause sexual dysfunction and changes in the sexual hormones but ethanol amplifies those changes [26].

Duration of alcohol use

In contrast to the results study by Arackal *et al.* [11]; our study revealed that duration of alcohol use is proportional to sexual dysfunctions.

Another study postulates that psychosocial issues like marital conflict, dissatisfaction with spouses' and/ or decreased frequency of sexual contact which tends to be common in the family of people who use alcohol might also be contributing to sexual dysfunction [27].

The strengths of the study are alcohol dependence was diagnosed using ICD-10 criteria, standard scales were used, patients and controls both were in-patients in the same hospital, comorbid psychiatric illness was excluded, male first author interviewed all patients. Limitations include small sample size, medicines, medical problems and nicotine could have influenced sexual dysfunction. Results of hospital sample cannot be generalized to the community; it is likely that a cross-sectional single assessment would not give complete sexual history details. A larger community based survey on sexual dysfunction in persons with alcohol dependence is desirable.

CONCLUSION

The perceived sexual dysfunction among admitted patients with alcohol dependence is fairly high. Clinicians treating alcohol dependence need to give adequate importance and time to understand and manage sexual dysfunctions.

REFERENCES

1. Gururaj, G., Varghese, M., Benegal, V., Rao, G. N., Pathak, K., Singh, L. K., ... & Lenin Singh, R. K. (2015). for the NMHS Collaborators Group. *National mental health survey of India, 16*.
2. Peugh, J., & Belenko, S. (2001). Alcohol, drugs and sexual function: a review. *Journal of psychoactive drugs, 33*(3), 223-232.
3. McCabe, M. P., Sharlip, I. D., Lewis, R., Atalla, E., Balon, R., Fisher, A. D., ... & Seagraves, R. T. (2016). Incidence and prevalence of sexual dysfunction in women and men: a consensus

- statement from the Fourth International Consultation on Sexual Medicine 2015. *The journal of sexual medicine*, 13(2), 144-152.
4. Laumann, E. O., Paik, A., & Rosen, R. C. (1999). Sexual dysfunction in the United States: prevalence and predictors. *Jama*, 281(6), 537-544.
 5. Mulligan, T., Retchin, S. M., Chinchilli, V. M., & Bettinger, C. B. (1988). The role of aging and chronic disease in sexual dysfunction. *Journal of the American Geriatrics Society*, 36(6), 520-524.
 6. Muthusami, K. R., & Chinnaswamy, P. (2005). Effect of chronic alcoholism on male fertility hormones and semen quality. *Fertility and sterility*, 84(4), 919-924.
 7. Rosen, R. C. (1991). Alcohol and drug effects on sexual response: human experimental and clinical studies. *Annual review of sex research*, 2(1), 119-179.
 8. Mirone, V., Ricci, E., Gentile, V., Fasolo, C. B., & Parazzini, F. (2004). Determinants of erectile dysfunction risk in a large series of Italian men attending andrology clinics. *European urology*, 45(1), 87-91.
 9. Fahrner, E. M. (1987). Sexual dysfunction in male alcohol addicts: prevalence and treatment. *Archives of Sexual Behavior*, 16(3), 247-257.
 10. Schiavi, R. C. (1990). Chronic alcoholism and male sexual dysfunction. *Journal of sex & marital therapy*, 16(1), 23-33.
 11. Arackal, B. S., & Benegal, V. (2007). Prevalence of sexual dysfunction in male subjects with alcohol dependence. *Indian Journal of Psychiatry*, 49(2), 109.
 12. Grover, S., Mattoo, S. K., Pendharkar, S., & Kandappan, V. (2014). Sexual dysfunction in patients with alcohol and opioid dependence. *Indian journal of psychological medicine*, 36(4), 355.
 13. Stockwell, T., Hodgson, R., Edwards, G., Taylor, C., & Rankin, H. (1979). The development of a questionnaire to measure severity of alcohol dependence. *Addiction*, 74(1), 79-87.
 14. O'Leary, M. P., Fowler, F. J., Lenderking, W. R., Barber, B., Sagnier, P. P., Guess, H. A., & Barry, M. J. (1995). A brief male sexual function inventory for urology. *Urology*, 46(5), 697-706.
 15. Vijayaseenan, M. E. (1981). Alcohol and sex. *The New Zealand medical journal*, 93(675), 18-20.
 16. Jensen, S. B. (1984). Sexual function and dysfunction in younger married alcoholics. *Acta Psychiatrica Scandinavica*, 69(6), 543-549.
 17. Jensen, S. B., & Glud, C. (1985). Sexual dysfunction in men with alcoholic liver cirrhosis. A comparative study. *Liver International*, 5(2), 94-100.
 18. Akhtar, M. J. (1977). Sexual disorders in male alcoholics. In *Alcoholism and drug dependence* (pp. 3-13). Springer, Boston, MA.
 19. Grinshpoon, A., Margolis, A., Weizman, A., & Ponizovsky, A. M. (2007). Sildenafil citrate in the treatment of sexual dysfunction and its effect on quality of life in alcohol dependent men: preliminary findings. *Alcohol & Alcoholism*, 42(4), 340-346.
 20. Villalta, J., Estruch, R., Antúnez, E., Valls, J., & Urbano-Márquez, A. (1989). Vagal neuropathy in chronic alcoholics: relation to ethanol consumption. *Alcohol and Alcoholism*, 24(5), 421-428.
 21. Gümüs, B., Yiğitoğlu, M. R., Lekili, M., Uyanik, B. S., Müezzinoğlu, T., & Büyüksu, C. (1998). Effect of long-term alcohol abuse on male sexual function and serum gonadal hormone levels. *International urology and nephrology*, 30(6), 755-759.
 22. Nordmann, R., Ribière, C., & Rouach, H. (1990). Ethanol-induced lipid peroxidation and oxidative stress in extrahepatic tissues. *Alcohol and Alcoholism*, 25(2-3), 231-237.
 23. Rivier, C., Rivest, S., & Vale, W. (1992). Alcohol-Induced Inhibition of LH Secretion in Intact and Gonadectomized Male and Female Rats: Possible Mechanisms. *Alcoholism: Clinical and Experimental Research*, 16(5), 935-941.
 24. Cicero, T. J. (1982). Alcohol-Induced Deficits in the Hypothalamic-Pituitary-Luteinizing Hormone Axis in the Male. *Alcoholism: Clinical and Experimental Research*, 6(2), 207-215.
 25. Cornely, C. M., Schade, R. R., Van Thiel, D. H., & Gavaler, J. S. (1984). Chronic advanced liver disease and impotence: Cause and effect?. *Hepatology*, 4(6), 1227-1230.
 26. Bannister, P., OAKES, J., Sheridan, P., & Losowsky, M. S. (1987). Sex hormone changes in chronic liver disease: a matched study of alcoholic versus non-alcoholic liver disease. *QJM: An International Journal of Medicine*, 63(1), 305-313.
 27. Van Thiel, D. H., Gavaler, J. S., & Sanghvi, A. J. I. T. (1983). Recovery of sexual function in abstinent alcoholic men. *Gastroenterology*, 84(4), 677-682.