

Sexual Dysfunction in Women with Depression: A Hospital-Based Cross-sectional Comparative Study

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ABSTRACT


Background: There is a need to explore the sexual functioning of women with depression as one part of sexuality is that it helps in developing an intimate emotional and physical relationship with another person, and this relationship may serve as a buffer against life stresses. Our aim was to study the prevalence and types of sexual dysfunction in depressed women patients and to compare them with non-depressed women. **Materials and Methods:** A total of 270 participants who attended a teaching hospital were selected for the study – 135 cases and 135 controls. Sociodemographic and clinical details were collected. Mini International Neuropsychiatry Interview (M.I.N.I.), Hamilton Depression Rating Scale (HAM-D), Arizona Sexual Experiences (ASEX) scale, and Female Sexual Functioning Index (FSFI) scale were used. Sexual dysfunction was assessed in both groups. **Results:** Among the cases, 47.40% had mild depression, 44.44% had moderate depression, and 8.15% were severely depressed. On the ASEX, 46.66% of the cases had sexual dysfunction, while it was only 8.89% among the controls. The difference in sexual dysfunction among cases and controls was statistically significant. Using the FSFI, 40% of the cases had female sexual dysfunction (FSD), and it was only 11.1% in controls. **Conclusion:** Sexual dysfunction was more common in females with clinical depression than in those without depression. Numerous factors can operate in the causation of FSD. This study underlines the importance of screening females with depression for FSD, for its early diagnosis and management.

Key words: Depression, sexual dysfunction, women

Key messages: Sexual dysfunction is more commonly seen in women with clinical depression.

Depression is a common disorder and is mainly characterized by depressed mood, decreased energy, and loss of interest in previously pleasurable activities. Sexual dysfunctions are “impairments in the sexual response cycle or the presence of pain associated with

sexual intercourse.”^[1] The prevalence of female sexual dysfunction (FSD) in Western countries is reported to be between 17% and 55%. FSD is considered a

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multidimensional entity with various biological and psychosocial dimensions.^[2] FSDs can occur in the form of Hypoactive sexual desire disorder (HSDD), sexual aversion disorder, female sexual arousal disorder, female orgasmic disorder, dyspareunia, and vaginismus. Furthermore, there are newer disorders identified recently, such as persistent genital arousal disorder.

The risk factors for sexual dysfunction include age, education level, emotional ill health and stress, and sexual abuse.^[3] Pregnancy also plays a role in sexual dysfunction. The sexual functioning is considerably lower in the last trimester of pregnancy.^[4] In a study, middle-aged women of 40–65 years with a lower socioeconomic and lower level of education showed the highest rates of FSD.^[5] A study from Brazil reported that the prevalence of sexual dysfunction was 28% and 49%, respectively, in females across selected social groups. The prevalence rate was between 18% and 29.3% for female orgasmic disorder and 26.7% for HSDD.^[6,7] Furthermore, the study also showed that women seeking professional help for sexual disturbances were only 18.8%.^[8] FSD is physically disconcerting, emotionally distressing, and socially disruptive for those who suffer from it.^[9]

A few earlier studies have suggested that depression increases the risk for the development of FSD. In women who had depression, HSDD was reported to be the most common type of FSD.^[10] The chief complaint of patients with depression may include loss of sexual desire, and conversely, the presence of lower sexual desire may lead to depression. A few studies have shown that FSD was more common in depressed women than in patients with no depression.^[11] The loss of sexual desire was found to have greater prevalence than disorders of arousal or orgasm, and in other studies, HSDD was the most prevalent in depressed patients.^[12] The Study of Women's health Across the Nation (SWAN), in the United States, showed recurrent depression to be associated with reduced arousal and pleasure.^[13] Yet, depressed female patients are very reluctant to talk about sexual dysfunction even when they are in the hospital for the treatment of depression.

There is a paucity of studies in India on FSD. FSD is also one of the grossly underreported health conditions in India due to various social and cultural taboos. There is a further reduction in the interest and desire for sexual activities with the partner when clinically depressed. Increase in depression is leading to increased prevalence of HSDD as part of depressive symptomatology.^[14] Yet, like the women from the United States who were part of SWAN study, this dual malady is probably silently suffered by Indian women too. We undertook the study to determine whether sexual dysfunction in those

with depression was more when compared with those without depression, using ASEX and FSFI.

MATERIALS AND METHODS

This hospital-based, cross-sectional comparative study was conducted at a Medical College Hospital between January 2017 and December 2018. Female patients who attended the Psychiatry outpatient (OP) of the tertiary care teaching hospital were approached for the study.

Sample

Using a previous Indian study by Roy *et al.*, the expected proportion of women with FSD was considered as 70.3% among people with depression and 43.3% among women without depression.^[15] Power of study at 90% and two-sided alpha error of 5% yielded a sample size of 119. Allowing for an additional 10% excess, a final sample size of 135 in each group was arrived at.

Purposive sampling was used to select patients who received a diagnosis of mild, moderate, or severe depressive episode as per International Classification of Diseases, Tenth Revision (ICD-10). Both new and follow-up cases were included. The inclusion criteria for cases included women age 18–45 years who are sexually active, attended the psychiatric OP department, are diagnosed with depression, are with or without anti-depressant medications, and are willing to give consent to participate in the study. The exclusion criteria included reporting menopausal symptoms and having serious medical comorbid conditions that required hospitalization more than once in the past.

The control group consisted of females who accompanied patients to our hospital and those who came for work in the institution. Females, matched for age in 1:1 ratio to that of cases, were approached. Subjects who did not have depression or any major mental illness, never had any history of psychotropic medication use, and consented to participate in the study were included in the control group.

The participants were approached and briefed about the study and written informed consent was obtained. The interview and assessment were conducted by a female psychiatrist in the privacy of her office room.

Tools

Sociodemographic and clinical details were collected. The following tools were used: Mini International Neuropsychiatry Interview (M.I.N.I),^[16] Hamilton Depression Rating Scale (HAM-D-17 item),^[17] Arizona Sexual Experiences (ASEX) Scale,^[18] and Female Sexual

Functioning Index (FSFI) scale.^[19] The overall time taken was an hour for each participant.

MINI is a short, structured diagnostic interview schedule for ICD-10 and Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) psychiatric disorders. It has a short administration time of 15 min. The structured questions are answered in yes or no format. It is widely used in many clinical trials and epidemiological studies in psychiatry. Its validity and reliability varied between good and very good when compared with Composite International Diagnostic Interview and the Structured Clinical Interview for DSM-IV.^[20,21] MINI was used because of its brevity and accuracy.

HAM-D or HDRS is a 17-item depression assessment scale. It is clinician-rated and takes about 20 min to administer. Eight items have a 0 (not present) to 4 (severe) score, and nine items have a 0–2 score. It has a sensitivity of 90% and specificity of 63% at a cut-off score of 7. It is one of the most widely used scales for assessment of severity and change of the depressive symptoms in adult patients.^[22]

ASEX is a five-item, easy-to-use, rating scale designed to screen for sexual dysfunction. It quantifies the five domains of sex drive, arousal, vaginal lubrication, ability to reach orgasm, and satisfaction from orgasm. The questions are short, easy to understand, and less intrusive. The total scores range from 5 to 30, with the higher scores indicating more sexual dysfunction. Studies have shown that it is a reliable, valid, and sensitive tool to measure sexual dysfunction in both males and females.^[18]

FSFI is a 19-item, self-reported questionnaire for assessing the key dimensions of sexual function in women. It is easy to administer and psychometrically sound. The FSFI rating scale was based on clinical interpretations of a principal components analysis, which gave a six-domain structure identified as desire, subjective arousal, lubrication, orgasm, satisfaction, and pain.

Both the ASEX and FSFI scales were translated into Tamil language by the first and second authors independently. A consensus questionnaire was arrived at after comparing the translations. An independent language expert back-translated this consensus questionnaire into the English version, which was compared with the original and found to be satisfactory. In case of discrepancy, the fourth author's suggestion was accepted. The final vernacular version was used. As sexual dysfunction is a sensitive problem with added stigma, some of the questions were tempered based on

the cultural context. The briefer ASEX was given first to check the sexual activity/functioning of each individual, and later, FSFI was used for assessing the domains of sexual functioning. MINI was used as a screening tool to rule out other comorbid mental illness in the study group and to screen the control group for mental illness.

Statistical analysis

The ASEX and the FSFI total scores were considered as the primary outcome variables. Other scores and computed results from the study were secondary outcome variables. The study group was the primary explanatory (dependent) variable. Demographic variables such as age, gender, and marital status were considered as other explanatory (independent) variables. Descriptive analysis was done and presented as mean and standard deviation (SD) for continuous variables and frequency and proportions for categorical variables. Independent sample *t*-test and Chi-square tests were carried out to test for significance. IBM SPSS version 16 was used for statistical analysis.

Ethics approval

The Institutional Ethical Committee approved the study. Written informed consent was obtained from all the participants after providing detailed information about the study and voluntary nature of participation. The confidentiality of the study participants was maintained throughout the study.

RESULTS

A total of 281 females were approached for the study purpose. Eleven females were excluded from the study as they had menopausal symptoms. Four out of these 11 perimenopausal females had reported to be sexually inactive. Finally, a total of 135 females with depression and 135 females in the control group were studied. The mean age \pm SD was 32.09 ± 5.68 years in the cases and 32.04 ± 5.58 years in the control group. The majority were housewives, were from middle socioeconomic status, had completed schooling, were Hindu by religion, and were from semi-urban domicile [Table 1]. The case and control groups did not show any statistically significant difference in the above-mentioned demographic data.

We assessed severity of depression using the HAM-D. Severe depression was seen in 8.15% of the cases. The proportion of cases with mild depression was 47.40%, while 44.44% had moderate depression. The mean ASEX score was 19.6 ± 4.65 in the cases, while it was 15.27 ± 4.13 in the controls. This mean difference was statistically significant ($t = 4.33$, 95% CI, $P < 0.001$).

Poor sex drive was reported in 64.8% ($n = 87$) of cases. Difficulty in sexual arousal and lubrication difficulty was reported by 54.8% ($n = 74$) and 68.9% ($n = 93$), respectively. Difficulty in reaching orgasm was seen in 71.9% ($n = 97$) of the cases, and 69.7% ($n = 94$) reported unsatisfying orgasms. The severity of depression was associated with sexual dysfunction, which was statistically significant ($\chi^2 = 68.03$, $df = 24$, $P = 0.000$).

The mean FSFI rating scale score was 27.79 ± 3.38 in cases, and it was 31.09 ± 3.65 in controls. The difference was statistically significant ($t = 3.30$, 95% CI, $P < 0.001$). In our study, according to the FSFI rating scale, 40% of the cases had FSD and it was only 11.1% in controls [Table 2].

In this study, 22.22% of the cases had a positive history of antidepressant medication, while only 7.4% among

the controls had a positive history of any medication use. This difference in proportions among cases and controls was statistically significant. There was a statistically significant difference between the cases and the control group with respect to the use of medicines and FSD ($\chi^2 = 11.73$, $df = 1$; $P = 0.001$). In cases who had positive current medication history ($n = 30$), FSD was reported in 20%.

DISCUSSION

FSD is one of the underdiagnosed disorders across the world and especially in developing countries like in India with complex cultural barriers and taboo regarding an open discussion about sexual health. Across the world, it is often underreported or underdiagnosed compared with male sexual dysfunction.^[23] The prevalence of FSD in non-depressed women reported in Indian studies varies from 33.3% to 73.2%.^[24,25] The varying rates were reported to be due to vastly different study samples, methodological differences, and cultural variations in sexual practice in India.^[25] Even fewer studies have been done on FSD in women who are depressed.

This study was done to assess sexual dysfunction in females with depression. A total of 135 cases of depression and 135 age-matched controls were studied. A statistically significant difference was observed in sexual dysfunction between cases and controls.

The mean age of the study population was 32 years in both groups. Sexually active married women formed the majority (77.03%) of the study sample. The baseline parameters of our study sample were comparable with that of Sreelakshmy *et al.*,^[26] Roy *et al.*,^[17] and Kendurkar *et al.*^[27]

In our study, the mean ASEX score was more in cases than in controls, and the difference was statistically significant. As per ASEX, 46.66% of our cases had SD, while only 8.89% of controls had SD. This difference in SD among the cases and controls was statistically significant. Our finding was consistent with the study done by Roy *et al.*,^[17] who observed that on ASEX

Table 1: Sociodemographic comparison of cases and controls

Variables		Cases $n=135$		Controls $n=135$	
		Frequency	%	Frequency	%
Education	Up to secondary school	41	30.37	43	31.85
	Graduate	89	65.92	87	64.44
	Postgraduate	5	3.70	5	3.70
Occupation	Employed	47	34.81	49	36.29
	Student	14	10.37	14	10.37
	Housewife	74	54.81	71	52.59
	Unemployed	0	0	1	0.74
Socioeconomic status	Lower	33	24.44	35	25.92
	Middle	82	60.74	76	56.29
	High	20	14.81	24	17.77
Domicile	Rural	44	32.59	39	28.88
	Semi Urban	63	46.66	64	47.40
	Urban	28	20.74	32	23.70
Religion	Hindu	74	54.81	74	54.81
	Christian	32	23.70	31	22.96
	Muslim	29	21.48	30	22.22
Marital status	Single	25	18.51	24	17.77
	Married	104	77.03	104	77.03
	Divorced	5	3.70	5	3.70
	Widow	1	0.74	2	1.48
Family type	Nuclear	79	58.51	74	54.81
	Extended	45	33.33	45	33.33
	Joint	11	8.14	16	11.85

Table 2: Comparison of the female sexual dysfunction using ASEX scale and FSFI rating scale in the two study groups ($n=270$)

Sexual dysfunction		Group		Chi-square	P
		Cases ($n=135$)	Control ($n=135$)		
ASEX scale	No SD (<14)	21 (15.55%)	50 (37.03%)	50.42 (df=3)	<0.001
	Probable (14-21)	51 (37.77%)	73 (54.07%)		
	SD (>21)	63 (46.66%)	12 (8.89%)		
FSFI rating scale	FSD (below 26)	54 (40%)	15 (11.1%)	29.61 (df=2)	<0.001
	No FSD (score 26 and above)	81 (60%)	120 (88.9%)		

ASEX – Arizona Sexual Experiences; FSFI – Female Sexual functioning Index; SD – Sexual dysfunction; FSD – Female sexual dysfunction

scale, 73.3% of participants were showing sexual dysfunction in the study group, but it was only 20% in the controls. As in our study, the difference in proportion between cases and controls was statistically significant.

Our study showed that there is a significant association between depression and FSD. The psychomotor and cognitive symptoms of depression, along with low self-esteem, depressive cognitions like hopelessness and helplessness, contribute significantly to this outcome.^[2] Apart from neuro-humoral changes that affect the hormonal levels, the antidepressant medications themselves also significantly contribute to FSD, making it worse.^[28]

In our study, the mean HAMD score was 14.60. This is because the majority of the cases were from the OP department and had mild to moderate depression. Similar to our study, Roy *et al.*, in their study done at a medical college hospital in Mysuru, Karnataka, reported a mean HAMD score of 19.13, which is comparable. However, a study done at France in a community setting showed that 52% of their subjects had moderate depression, while 34% had severe depression. They had used the Montgomery and Åsberg Depression Rating Scale (MADRS), and the majority were on antidepressants for a longer time.^[29] That study did show a clear relationship between the prevalence of sexual dysfunction and severity of depression, independent of antidepressant drug treatment.

Though all components of sexual functioning were affected in our study, in the depressed group, the majority reported lubrication dysfunction, pain, and orgasmic dysfunction. Low desire, low arousal, and low satisfaction were also reported more in the cases

than in the controls; however, this was not statistically significant.

The other area studied was the use of medications and their association with FSD, which showed significant difference between the women with depression and the healthy control group. The existing literature also confirms sexual dysfunction as a possible adverse event of all antidepressants.^[30] Strategies to mitigate this include reducing the antidepressant dose, switching to a different antidepressant with lower sexual side effect, and addition of hormones and/or antidotes.^[28] When compared with other Indian studies [Table 3], the overrepresentation of the mild and moderate depressive cases in our study sample is perhaps the reason for the slightly lower FSD in ASEX and FSFI.

Limitations

Our study was a cross-sectional descriptive study and the causal association could not be established. Furthermore, the selection of purposive samples of cases and controls from the institution precludes the generalization of the findings. Lack of validation of the translated ASEX and FSFI is another limitation. A more detailed clinical information of the cases in terms of onset, number of episodes, and duration would have added more strength to the analysis and to the generalizability of the results. We could not analyze and compare the effect of classes of antidepressants upon FSD because of the small sample.

CONCLUSION

Our study is an attempt to address the often-neglected area of FSD in depressed females, done at a tertiary care teaching hospital. Even though the study sample contained mostly of patients with mild and moderate depression, women with depression had significantly higher sexual dysfunction.

Table 3: Comparison of Indian studies on FSD

Study	Location	Study sample	Instrument used	Remarks	Prevalence of FSD
Kar and Koola ^[31]	South India	61 women	Sexual Function Questionnaire	Postal questionnaire to English-speaking women	OD 28%
Avasthi <i>et al.</i> ^[32]	Chandigarh, North India	100 women	Brief Index of Sexual Functioning for Women; Sex Knowledge and Attitude Questionnaire II	Women attending pediatric unit	OD 9%, LD 5%, PD 7%
Singh <i>et al.</i> ^[25]	Tamil Nadu, South India	149 women	FSFI	Women attending medical OP clinic	73.2% FSD
Abhivant and Sawant ^[2]	Solapur, North India	49 women with depression	ASEX, FSFI	Psychiatric OPD	67.34%
Roy <i>et al.</i> ^[15]	Karnataka, South India	30 cases 30 controls	ASEX, FSFI, HAM-D	Psychiatric OPD	73.3% (ASEX); 70% (FSFI)
Sreelakshmy <i>et al.</i> ^[26]	South India	40 patients	FSFI, HAM-D	Obstetrics and gynecology OPD	90% FSD
This study	Tamil Nadu, South India	135 cases; 135 controls	ASEX, FSFI, HAM-D	Psychiatry OPD	46.6% (ASEX); 40% (FSFI)

FSD – Female sexual dysfunction; OD – Orgasmic disorder; LD – Lubrication disorder; PD – Pain disorder; ASEX – Arizona Sexual Experiences; FSFI – Female Sexual functioning Index; HAM-D – Hamilton Depression Rating Scale

Sexual functioning and dysfunction are still a sensitive and stigmatized area, even among educated adult females. Though they seek treatment for somatic and psychological symptoms of depression, adult females are hesitant to seek out help for sexual dysfunction. This study underlines the importance of screening depressed female patients for sexual dysfunction.

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Conflicts of interest

There are no conflicts of interest.

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