

Sexual Dysfunction in Women with Nonpsychotic Disorders: A Cross-sectional Hospital-based Study

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ABSTRACT

Background: Sexual dysfunction among female psychiatric patients is common and can be affected by various bio-psycho-social factors. The clinician's or patient's reluctance to actively inquire or spontaneously report these sexual difficulties creates a lacuna in our understanding of this association. This study aimed to assess the proportion of women with nonpsychotic psychiatric disorders reporting sexual dysfunction and evaluate its association with sociodemographic and clinical variables.

Methods: This cross-sectional study conducted over six months included 113 women attending the psychiatry outpatient department of a tertiary care hospital. Sociodemographic and clinical variables, including diagnosis based on International Classification of Diseases 10th version (ICD 10) criteria, were assessed using a specially designed proforma. Sexual functioning was measured by Female Sexual Functioning Index (FSFI) and the Change in Sexual Functioning Questionnaire-Female Version (CSFQ-FV).

Results: Sexual dysfunction was reported by 67.3% of patients. Among patients on psychotropics, 49% reported worsening of sexual dysfunction after treatment initiation. Sexual dysfunction was associated with increasing age ($\chi^2 = 7.86$, $P = 0.04$), lower educational qualification ($\chi^2 = 3.41$, $P = 0.04$), skilled occupation ($\chi^2 = 4.49$, $P = 0.03$), lower socioeconomic status ($\chi^2 = 4.27$, $P = 0.03$) and presence of ongoing psychosocial stressor ($\chi^2 = 4.49$, $P = 0.03$).

Conclusions: Difficulties in different domains of sexual functioning are prevalent among women with nonpsychotic disorders. Sociodemographic and relational factors, along with treatment status, can influence sexual dysfunction in these patients. Clinicians should be vigilant of this association and should plan treatment to enhance compliance and outcome.

Keywords: Female sexual functioning, Female sexual dysfunction, Psychiatric disorders, Psychotropics

Key Messages: Difficulties on various domains of sexual functioning are common in female psychiatric population, regardless of the diagnostic and treatment

status. Factors such as age, educational background, occupation, socioeconomic status, and relationship issues with spouse can influence these complaints.

Female sexuality is an intricate construct, and various bio-psycho-social determinants can influence the normal sexual functioning.¹ Apart from physical health, psychosocial and relational factors can also affect sexual functioning in women.² Cultural upbringing, educational background, current financial condition, unemployment or work-related stress, lack of privacy depending on housing conditions or having to share the room with children, and the burden of caregiving for parents are a few contextual circumstances that can precipitate or perpetuate sexual difficulties among women.³ Partner-related or relational factors and relationship dissatisfaction can predispose women to develop difficulties in various domains of sexual functioning.^{4,5}

Mental health issues are also known to be a significant risk factor for women

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to develop sexual dysfunction.^{6,7} These sexual difficulties can either be a comorbidity to psychiatric conditions or an integral clinical symptom and, sometimes, the presence of sexual dysfunction can lead to psychiatric manifestation.⁸ Furthermore, psychotropic medications are proposed to meddle with normal sexual functioning, aggravating the existing dysfunction, and thus affect treatment adherence.⁹ This eventually will impair the quality of life of patients.

The reported prevalence of sexual dysfunction in the female psychiatric population varies from study to study, partly because of methodological differences.¹⁰ Most studies evaluating sexual dysfunction in women with psychotic disorders have focused mainly on the effect of antipsychotics on the sexual response cycle.¹¹ The presence of psychotic symptoms (both positive and negative) can influence sexual functioning in women by affecting their ability to initiate and maintain intimate relationships.¹² Women with nonpsychotic affective disorders, anxiety disorders, or stress-related disorders are recognized to have difficulties in domains of desire, arousal, orgasm, and pain.¹³ Many researchers have elucidated that patients with depressive or anxiety disorder might have higher degrees of sexual difficulties, regardless of the severity of illness or the treatment status.¹⁴

Researchers or clinicians often ignore the influence of unique cultural-religious, sociodemographic, and relational factors on sexual dysfunction in female psychiatric patients. As a consequence, these sexual difficulties might be wrongly attributed exclusively to psychological symptoms or psychotropic medications. Adding to this, many women tend not to discuss these issues with clinicians, considering these as nonmedical complaints or because of feelings of awkwardness.¹⁵ There exists a paucity in studies investigating the effects of various sociodemographic and relational factors on sexual dysfunction among women with nonpsychotic psychiatric disorders, especially in the Indian context.

Hence, the current study attempted to assess the proportion of these women having sexual dysfunction and explore its association with various sociodemographic and clinical factors. We further wanted to *evaluate the risk factors for*

women to develop treatment-related sexual dysfunction.

Materials and Methods

This cross-sectional, descriptive, and exploratory study was conducted at the psychiatry outpatient department of JSS Hospital, Mysuru, from May 2017 to October 2017. Institutional ethical committee approval was obtained for the study. All female patients attending the psychiatry outpatient department were screened during these six months based on the following inclusion criteria: (a) aged 20 years to 60 years, (b) sexually active (either married or having a sexual partner), and (c) diagnosis of any nonpsychotic psychiatric disorder based on ICD 10 (International Classification of Diseases 10th revision, WHO)¹⁶ criteria with mild or moderate severity of symptoms based on Clinical Global Impression-Severity (CGI-S) scores. The exclusion criteria were as follows: (a) presence of psychotic symptoms (both current and past) either as schizophrenia/other psychotic disorders/mood disorders with psychotic symptoms; (b) history of substance use, organic disorders, or intellectual deficits; (c) on treatment with any antipsychotic or recent change in the dosage of ongoing medications; and (d) comorbid medical illnesses including diabetes mellitus, thyroid disorders or other endocrinal disorders, neurological disorders, hypertension, any other cardiovascular disorders, respiratory disorders, or genitourinary disorders, based on history and routine clinical examination.

Patients fulfilling the inclusion and exclusion criteria were recruited for the study after obtaining written, informed consent. Data, including sociodemographic and clinical details and information of sexual functioning, was collected by a female investigator, employing a specially designed proforma. All subjects were arbitrarily grouped into the following subgroups based on the diagnosis:

1. Depressive disorders: Mild to moderate depressive episodes, either first episode or recurrent depressive disorder, and dysthymia with depressive episode
2. Bipolar disorder: Current mild-moderate depressive episode with a past history of hypomania or mania without psychotic symptoms or cyclothymia

3. Obsessive-Compulsive disorder
4. Anxiety disorders: Panic disorder, social anxiety disorder, generalized anxiety disorder, and mixed anxiety disorders
5. Stress-related disorders: Adjustment disorders and dissociative disorders
6. Somatoform and related disorders: Somatization disorder, somatoform pain disorder, and persistent somatoform pain disorder, including psychasthenia

Treatment details of subjects were assessed and based on ongoing treatment status, categorization was done as follows:

1. Drug naïve or drug-free group: Patients attending the hospital for the first time or previously diagnosed and not on any treatment for at least six months.
2. On-treatment group: Patients already diagnosed and on treatment with a stable dose of selective serotonin reuptake inhibitor (SSRI) or mood stabilizers for a duration of at least three months.

Assessment Tools

1. Proforma for collecting sociodemographic and clinical details:
 - 1) Sociodemographic variables: Age, education, occupation, socioeconomic status (based on Kuppusswamy scale), domicile, religion, family structure, family size, and presence of stressors as elicited by a subjective report of marital discord or other life events affecting interpersonal relationship with the spouse or sexual partner.
 - 2) Clinical variables: Psychiatric diagnosis based on ICD 10 criteria, the severity of symptoms based on Clinical Global Impression-Severity (CGI-S) scale with scores of three and four being mild to moderately ill,¹⁷ and treatment details.
2. Sexual functioning questionnaires:
 - 1) Female Sexual Functioning Index (FSFI)¹⁸: A multidimensional self-report questionnaire with 19 items, each rated from zero to five. The measures of sexual functioning are on domains of desire, arousal, lubrication, orgasm, satisfaction, and pain. The cutoff value for the total score is 26.55. The cutoff scores for

the sub-domains desire, arousal, lubrication, orgasm, satisfaction, and pain are 4.28, 5.08, 5.45, 5.05, 5.04, 5.51, respectively. The scale has been validated and is widely used by clinicians and researchers, including Indian researchers.^{19,20,21}

- 2) Change Sexual Functioning Questionnaire (CSFQ) female version²²: A 14-item version of CSFQ was used. It is a self-report questionnaire measuring difficulties in sexual functioning in domains of desire/frequency, desire/interest, arousal/excitement, orgasm/completion, and pleasure, which is related to illness or medications. The cumulative cutoff value is 41, and cutoff scores for each domain have been validated.²³

Sexual functioning among all patients, regardless of the diagnostic or treatment status, was assessed using FSFI. The on-treatment group subjects were further evaluated by CSFQ for perceived difficulties in sexual functioning following treatment initiation. The scales were translated to the local language (Kannada) for uniform administration among all subjects.

Statistical Analysis

Descriptive and inferential statistics were computed using SPSS 20.0 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp. 2011). Descriptive statistics, including frequency, percentage, mean, and standard deviation (SD), were used to describe sociodemographic, clinical, and sexual functioning variables. Exploratory analyses were done employing chi-square/Fisher's exact test and odd's ratio to measure the association of various dichotomized sociodemographic, and clinical variables with sexual dysfunction or change in sexual functioning. The P-value of < 0.05 was considered statistically significant.

Results

The mean (\pm SD) age of subjects was 32.7 (\pm 8.1) years. Most of the subjects were from the third and fourth decades of life (80.5%), married (99.1%), educated above high school (63.8%), homemakers (70.8%), from a nuclear family (64.6%), Hindus (85%), and having at least one

child (77.9%). More than half of the subjects hailed from a rural background (54%) and belonged to lower-middle socioeconomic status (56.6%). Ongoing relationship issues with the spouse were reported by 29.2% (Table 1).

The primary psychiatric diagnosis was depressive disorders in 40.7%, followed by obsessive-compulsive disorders (23%). The majority were drug naïve (54.9%), and among on-treatment patients, the majority were on a combination of two SSRIs (37.3%; Table 1).

The mean score on FSFI was 21.0 (\pm 9.11), and 67.3% of patients reported sexual dysfunction. Most subjects had difficulties in the arousal domain (98.2%) and overall satisfaction (97.3%). Difficulties in domains of desire, lubrication, orgasm, and pain were reported by 77%, 86.7%, 91.2%, and 85.8%, respectively (Table 2).

Of the 51 patients on medications, 49% reported worsening of sexual dysfunction

because of treatment, with a mean CSFQ score of 38.49 (\pm 10.85). All patients on treatment reported difficulties in the domain of sexual pleasure. Difficulties in domains of desire/interest, desire/frequency, arousal, and orgasm were reported by 94.1%, 84.3%, 94.1%, and 88.2%, respectively (Table 2).

Sexual dysfunction was significantly associated with increasing age ($\chi^2 = 7.86$, $P = 0.04$), lower educational qualification ($\chi^2 = 3.41$, $P = 0.04$), skilled occupation ($\chi^2 = 4.49$, $P = 0.03$), lower socioeconomic status ($\chi^2 = 4.27$, $P = 0.03$), and presence of ongoing psychosocial stressor ($\chi^2 = 4.49$, $P = 0.03$). There was no statistically significant association between sexual dysfunction and other sociodemographic or clinical variables, including treatment status (Table 3).

Increasing age was a significant risk factor for developing sexual dysfunction (OR=1.07, $P = 0.04$). Women with semi-skilled or skilled occupations had

TABLE 1.
Sociodemographic and Clinical Variables

Variables	Frequency (n) and Percentage (%)
Age (in years)	
20–29	47 (41.6)
30–39	44 (38.9)
40–49	18 (15.9)
50–59	4 (3.5)
Marital status	
Unmarried	1 (0.9)
Married	112 (99.1)
Education	
No formal education	12 (10.6)
Primary and middle school	29 (25.6)
High school	41 (36.4)
Degree and postgraduation	31 (27.4)
Occupation	
Homemaker	80 (70.8)
Unskilled	2 (1.8)
Semi-skilled	12 (10.6)
Skilled	19 (16.8)
Socioeconomic status	
Lower	8 (7.1)
Upper lower	12 (10.6)
Lower middle	64 (56.6)
Upper middle	28 (24.8)
Upper	1 (0.9)

(Table 1 continued)

(Table 1 continued)

Variables	Frequency (n) and Percentage (%)
Domicile	
Rural	61 (54)
Urban	52 (46)
Family structure	
Nuclear	73 (64.6)
Extended nuclear	32 (28.3)
Joint	8 (7.1)
Family size	
No children	13 (11.5)
1–2 children	88 (77.9)
More than 2 children	12 (10.6)
Religion	
Hinduism	96 (85)
Islam	11 (9.7)
Christianity	6 (5.3)
Psychosocial stressors	
Absent	80 (70.8)
Present	33 (29.2)
Diagnosis	
Depressive disorders	46 (40.7)
Bipolar disorder—current depressive episode	15 (13.3)
Obsessive-compulsive disorder	26 (23)
Anxiety disorders	11 (9.7)
Stress-related disorders	9 (8)
Somatoform disorders	6 (5.3)
Treatment status	
Drug naïve/free	62 (54.9)
On treatment	51 (45.1)
Medication group (n = 51)	
One SSRI	18 (35.3)
Two SSRI's	19 (37.3)
SSRI with mood stabilizer	14 (27.5)

SSRI: Selective serotonin reuptake inhibitor.

India range from 65% to 75%, as reported by a few recent studies, and women diagnosed with medical illness were noted to have higher levels of sexual dysfunction.^{20,25} Sexual dysfunction was reported by 68.3% of asymptomatic female patients attending the psychiatry outpatient department of a tertiary hospital.²⁰

Age, educational qualification, occupation, and socioeconomic status were the demographic variables that had a significant association with sexual dysfunction in the current study. The distribution of sociodemographic variables in our sample was comparable with the region's general population's characteristics, as reported in an epidemiological survey conducted in the district.²⁶ Approximately 81% of the study subjects were from the third and fourth decade of life, considered the sexually most active period in human life, especially in the Indian context.²⁷ In our study, older age was noted to be a significant risk factor for sexual dysfunction. Women with semi-skilled or skilled jobs were at higher risk of sexual dysfunction than homemakers and unskilled workers. This finding contradicts a general population survey conducted in this district, where daily wage laborers and homemakers reported significant sexual difficulties.²⁶ A recent review of predictors of sexual dysfunction in women indicated that illiteracy, low partner education, unemployment of self and partner, low socioeconomic status, strict cultural upbringing, and lack of privacy were factors predisposing women to develop sexual difficulties. Age, domicile, marital status, and use of contraceptives were reported to have an unclear influence on sexual dysfunction.⁴ Berman et al. reported that female sexual dysfunction would progress with increasing age.²⁸ Hormonal and physiological changes associated with aging can affect sexual functioning in women. Nevertheless, a decline in sexual functioning with increasing age was observed to not corroborate with increasing sexual difficulties among older women as the distress associated with poor sexual performance might reduce with aging.²⁹ An Indian study on depressed women also suggested no significant correlation of age with sexual dysfunction, unlike the present study.²¹

a higher risk of sexual dysfunction (OR-1.59, $P = 0.04$). Similarly, women with ongoing marital discord or relationship issues were at greater risk of experiencing sexual dysfunction than women who did not report any stressors (OR-2.01, $P = 0.04$).

Treatment-related sexual dysfunction was noted to be associated significantly with increasing age ($\chi^2 = 7.41$, $P = 0.04$) and medication group ($\chi^2 = 11.65$, $P < 0.001$, **Table 4**). The risk of worsening of sexual dysfunction among women on treatment with a combination of psychotropics (two SSRIs or SSRI with mood stabilizer) was more significant than in women on one SSRI (OR-9.11, $P = 0.004$).

Discussion

The current study included women diagnosed with nonpsychotic psychiatric disorders and, regardless of the diagnosis or treatment status, 67.3% of women reported sexual dysfunction. Most subjects had difficulties in arousal, orgasm, and overall satisfaction. Sexual difficulties among women with psychiatric disorders have been increasingly researched in the recent decade, without many confirmatory findings, because of variations in patient-related factors and methodological approaches.²⁴ The prevalence of sexual difficulties among women attending tertiary hospitals in

TABLE 2.

Sexual Dysfunction and Treatment-related Sexual Dysfunction

Domains	Dysfunction Present n(%)	Mean (SD)
FSFI (n = 113)		
Total score	76 (67.3)	21.01 (9.11)
Desire	87 (77)	3.19 (1.21)
Arousal	111 (98.2)	3.14 (1.61)
Lubrication	98 (86.7)	3.87 (1.83)
Orgasm	103 (91.2)	3.54 (1.78)
Satisfaction	110 (97.3)	3.39 (1.36)
Pain	97 (85.8)	3.85 (1.88)
CSFQ (n=51)		
Total score	25 (49)	38.49 (10.85)
Sexual desire/interest	48 (94.1)	5.59 (2.26)
Sexual desire/frequency	43 (84.3)	5.06 (1.70)
Sexual pleasure	51 (100)	2.67 (1.14)
Arousal/excitement	48 (94.1)	9.10 (2.67)
Orgasm	45 (88.2)	8.29 (2.91)

SD: Standard Deviation, FSFI: Female Sexual Functioning Index, CSFQ: Change in Sexual Functioning Questionnaire.

Approximately 30% of the current study's subjects reported ongoing marital discord or significant relationship issues with their spouse. Also, the presence of psychological stressors was a significant risk factor for sexual difficulties. It is well documented that psychological stress will have ill effects on sexual relationships. A recent review on the interpersonal components of female sexuality suggested that psychological variables are major determinants of sexual dysfunction among women than men.³ Poor communication between the couple has been observed to affect the quality of the relationship and sexual functioning.³⁰ Difficulty in effectively expressing affection or sexual desire and discrepancies in sexual needs are expected to be more common among couples with one partner having mood or anxiety disorders. Complaints of pelvic pain, decreased arousal and pleasure, and sexual avoidance were noted among females with depression or higher levels of stress.³¹

The literature also suggests that partners of women with depressive or anxiety disorders have higher levels of depressed mood than controls.³² Higher anxiety levels among women were associated with a reduction in the husband's perception of a positive marital relationship as the anxious spouse was considered emotionally unavailable and nonsupportive.³³ The association of the perceived intimacy and sexual functioning among women can be influenced by cultural-religious background.³⁴ Owing to the scarcity of Indian literature, there is a need to explore further these relational issues' influence on psychiatric symptoms and sexual difficulties among women.

Diagnostic status did not have a significant association with sexual dysfunction in the current study. At least half of the patients from each diagnostic sub-group reported sexual difficulties. Segraves reviewed the psychiatric aspects of female sexual dysfunction and found that desire or libido was mainly affected by psychiatric disorders such as schizophrenia, depression, and anxiety.³⁵ Thus, we can imply that the broad spectrum of nonpsychotic psychiatric disorders might have a similar pattern of impact on sexual functioning. Similarly, treatment status was not observed to influence sexual difficulties in our study; the

TABLE 3.

Association of Sexual Dysfunction (FSFI) with Sociodemographic Variables

Variables	Sexual Dysfunction-n (%)	No sexual Dysfunction-n (%)	χ^2 (df) [§]	OR (95% CI)	P-Value
Age (in years)					
20-29	27 (57.4)	20 (42.6)	7.86 (3)	1.07 (1.00-1.14)	0.04*
30-39	29 (65.9)	15 (34.1)			
40-49	16 (88.8)	2 (11.2)			
50-59	4 (100)	0			
Education					
Below high school	32 (78.1)	9 (21.9)	3.41 (1)	1.13 (0.38-3.35)	0.82
High school and above	44 (61.1)	28 (38.9)			
Occupation					
Homemaker or unskilled	51 (62.2)	31 (37.8)	4.49 (1)	1.59 (1.07-2.36)	0.04*
Semiskilled or skilled	25 (80.6)	6 (19.4)			
Socioeconomic status					
Lower or lower-middle	61 (72.6)	23 (27.4)	4.27 (1)	2.613 (0.89-7.66)	0.08
Upper-middle or upper	15 (51.7)	14 (48.3)			
Psychosocial stressor					
Absent	49 (61.2)	31 (38.8)	4.49 (1)	2.01 (1.09-3.68)	0.04*
Present	27 (81.8)	6 (18.2)			

Note: N=113, [§]P-value < 0.05 (unadjusted), * P-value < 0.05, χ^2 : Chi-square, df: degrees of freedom, OR: Odd's Ratio, CI: Confidence Interval.

TABLE 4.

Association of Treatment-related Sexual Dysfunction (CSFQ) with Sociodemographic and Clinical Variables

Variables	Treatment-related Sexual Dysfunction-n (%)	No Treatment-related Sexual Dysfunction-n (%)	χ^2 (df) [§]	OR (95% CI)	P-Value
Age (in years)*					
20–29	10 (50)	10 (50)	7.41 (3)	1.03 (0.94–1.12)	0.49
30–39	5 (27.7)	13 (72.3)			
40–49	8 (80)	2 (20)			
50–59	2 (66.6)	1 (33.4)			
Medication group					
One SSRI	3 (16.6)	15 (83.4)	11.65 (1)	9.11 (2.01–41.1)	0.04*
Two SSRI's or SSRI and mood stabilizers	22 (66.7)	11 (33.3)			

Note: N = 51, [§]P-value < 0.05 (unadjusted), * P-value < 0.05, χ^2 : Chi-square, df: degrees of freedom, OR: Odd's Ratio, CI: Confidence Interval.

contraceptive status, perceived intimacy, and partner-related factors (duration of marriage; age, education, occupation, and physical health of partner; and presence of sexual dysfunction in partner). A cross-sectional design might not provide better insights into the perplexing construct like sexuality, as the causal relationship between psychiatric disorders and sexual dysfunction cannot be appraised. Subjective reports are prone to under/over-reporting and recall bias.

Conclusion

Sexual dysfunction and difficulties in various domains of sexual functioning are highly prevalent among women with nonpsychotic disorders. In this study, sexual dysfunction was associated with age, education, occupation, and relational issues. Treatment-related worsening of sexual dysfunction was reported more by women on a combination of psychotropics. The current study reflects the need for clinicians to scrutinize sexual difficulties in women with psychiatric illness, both on initial and follow-up consultations.

Declaration of Conflicting Interests

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prevalence of sexual dysfunction among women in both subgroups, drug naïve/free and on-treatment, was comparable (64.5% and 70.5%, respectively).

A majority of women from the on-treatment subgroup were on a combination of psychotropics. Furthermore, 49% of women reported worsening sexual dysfunction following treatment initiation regardless of the medication group. All women on treatment reported difficulties in the domain of sexual pleasure. This treatment-related sexual dysfunction can be compared to a recent exploratory study where 42.5% of married women taking antidepressants reported sexual dysfunction, and lubrication was the domain that was most affected.³⁶ Serotonergic drugs are commonly observed to cause decreased libido, difficulty experiencing arousal, and delay or inability to reach orgasm.⁹ However, the number of patients in this sub-group was too small to assess for the effect of individual psychotropics.

In the current study, it was also noted that antidepressant-induced sexual dysfunction was significantly associated with age. Age-related changes in the metabolism of antidepressants can be a probable explanation of this association, similar to other reported adverse effects of antidepressants.³⁷ Also, women who were on two psychotropic medications had more risk of experiencing sexual difficulties than women on a single

antidepressant. There is inadequate evidence for superior efficacy of a combination of antidepressants over monotherapy with individual SSRIs in the management of depressive disorders. Furthermore, as noted in our study, polypharmacy can increase the risk of side effects including sexual dysfunction among patients.³⁸

With the findings mentioned earlier, we can speculate the possibility that during the initial consultations, women might not spontaneously report sexual difficulties as their priority will be the more troubling psychological symptoms. Clinicians might also forgo evaluating the sexual dysfunction and the potential negative influence of various sociodemographic or relational factors on sexual functioning in these women. As the psychological symptoms recede with treatment, reports of sexual dysfunction on later follow-ups can be misattributed solely to psychotropic medications.

Limitations

The major drawback of the study is its low sample size because of the stringent inclusion criteria, which were set to control the effect of severity of symptoms, frequent change in psychotropic medications, and medical comorbidities on sexual functioning. We did not evaluate the effect of variables such as premorbid sexuality, fertility or

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