



## A COMPARATIVE STUDY OF FEMALE SEXUAL DYSFUNCTION IN A DRUG NAIVE NEWLY DIAGNOSED FEMALE DEPRESSIVE PATIENT IN A TERTIARY CARE HOSPITAL IN NORTH INDIA

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### Introduction

Human sexual functioning encompasses a wide range of biological, emotional, psychological, social, and spiritual components that contribute to intimate and sexual relationships. It plays a crucial role in physical and mental well-being, directly influencing quality of life. The prevalence of sexual dysfunction in women is reported to be as high as 43%, while the incidence in men is slightly lower at 31%. Among the different types of sexual dysfunction in women,<sup>1</sup> hypoactive sexual desire disorder (HSDD), sexual arousal disorder, orgasmic disorder,<sup>2</sup> and pain disorders are common. Of these, HSDD and sexual arousal disorder are the most frequently encountered.

Sexual dysfunction can be multifactorial, with various psychosocial, biological, and cultural influences affecting its presentation and progression. The International Classification of Diseases, Tenth Revision (ICD-10) and Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) offer diagnostic frameworks, though they may not adequately capture the diversity and complexity of sexual issues reported by patients. Aspects of sexual functioning often overlap and are influenced by factors such as generational shifts, cultural norms,<sup>3</sup> and societal expectations, making it essential to approach the diagnosis of sexual dysfunction with a broad perspective.

Depression, recognized as a leading cause of disability worldwide, is linked to significant disruptions in sexual functioning. Research, including the Zurich cohort study, has indicated that patients with depression experience sexual problems at a rate approximately double that of non-depressed individuals.<sup>4</sup> Furthermore, antidepressant medications, commonly prescribed to manage depressive symptoms, can induce sexual dysfunction across various stages of the sexual cycle,<sup>5</sup> leading to concerns about patient adherence to medication. Adverse effects related to sexual functioning may result in patients discontinuing treatment, ultimately impeding the therapeutic efficacy of antidepressants. While much of the research on antidepressant-induced sexual dysfunction has focused on male patients, there is a growing recognition of the need to address sexual dysfunction in women, particularly in relation to psychotropic medication.

Despite increased research on sexual dysfunction in recent decades, knowledge regarding female sexuality has lagged behind that of male sexuality.<sup>6,7</sup> This discrepancy is especially evident in the Indian context, where studies on sexual dysfunction in women are scarce. Moreover, cultural taboos and societal stigma surrounding open discussions of sexual issues often discourage women from seeking help or reporting sexual concerns. Few studies have specifically addressed female sexual dysfunction in the context of psychiatric conditions, particularly depression, and the impact of psychotropic medications on sexual health.<sup>8</sup>

Indian studies on sexual dysfunction have predominantly focused on male patients, with limited attention to the unique experiences of women.<sup>18-21</sup> Research conducted by Kar and Koola (2007)<sup>21</sup> and Avasthi et al. (2008)<sup>19</sup> found that women in India often face sexual difficulties such as orgasmic difficulties, pain during intercourse, and reduced lubrication, yet they seldom seek clinical assistance due to cultural constraints. In a study of women attending a tertiary care hospital, 17% of the participants reported sexual difficulties<sup>3,5</sup> with headache after sexual activity, difficulty reaching orgasm, painful intercourse, and vaginal dryness being common complaints. A more recent study by Singh et al. (2009) reported high levels of sexual dysfunction among Indian women, particularly in the areas of sexual desire, arousal, and orgasm.

Additionally, imaging studies suggest that brain regions involved in sexual arousal and response, such as the hypothalamus, anterior cingulate gyrus, and parahippocampal gyrus, exhibit lower activation in women with depression compared to healthy women. This neurological evidence highlights the complex interaction between depression and sexual functioning in women.<sup>24-26</sup>

DSM-5 has proposed a more nuanced understanding of female sexual dysfunction, including early-onset (lifelong) and late-onset (acquired) subtypes, with further specifications that consider partner factors, relationship dynamics, individual vulnerabilities, and cultural or religious influences. It is important to recognize that various factors, including psychiatric comorbidities (e.g., depression, anxiety), play a pivotal role in the manifestation of sexual dysfunction in women.

A comprehensive approach to female sexual dysfunction is necessary, particularly for women with depression, as sexual intimacy can serve as an emotional and physical buffer against life stressors. Addressing sexual dysfunction as part of the broader management of depression is crucial for improving overall quality of life. Given the paucity of research on this subject in India, further studies are needed to examine the prevalence, predictors, and consequences of female sexual dysfunction, particularly in patients with recurrent depressive disorder. This research would provide valuable insights into effective treatment strategies and enhance the understanding of female sexuality in the context of psychiatric illness. female sexual dysfunction remains a significant but under-researched issue, particularly in the context of depression and psychotropic medication use. Indian studies are needed to further explore the complexities of female sexual health, identify cultural barriers to seeking help, and inform the development of more targeted interventions to improve the sexual well-being of women with depression.<sup>27</sup>

## Material and Methods

A cross-sectional study was done following institutional ethical committee clearance and written consent from the subjects. They were informed about the survey and were interviewed by lady doctor. Adequate privacy and confidentiality was ensured. Subjects both in study and control group were initially found to be hesitant and shy but once rapport was established they spoke freely about their sexual function. Subjects who were not comfortable were interviewed in subsequent sessions. They reported that no doctor had earlier enquired about their sexuality. It was not a self-reported scale as the dysfunction might have been over reported or under reported. The study group was diagnosed to have depressive disorder (mild, moderate or severe) for a duration of 6 months to 1-year according to ICD 10 criteria by a psychiatrist.

- Cases n = 50  
Control n = 50

**Inclusion criteria for the study group:**

- Married and completed 18 years
- Staying with husband for the past 1-year and sexually Active

**Exclusion criteria for the study group:**

Not giving consent  
Staying with husband, but sexually inactive in the past  
1-year due to cultural taboo or other reasons  
Psychotic symptoms, mental retardation  
Husband having male sexual dysfunction.  
Control n = 50

**Inclusion criteria for the control group:**

- (1) Female relatives or accompanying person who came to the hospital with the patient who had given written consent.
- (2) Married and above 18 years, staying with husband for the past 1-year and sexually active.

**Exclusion criteria for the control group:**

- (1) Not given written consent
- (2) Associated with medical co-morbidity like HTN, DM or other illness,
- (3) Sexually inactive in the past 1-year,
- (4) Husband having sexual dysfunction,
- (5) Subjects who had overlapped symptoms scored more than 7 HAM D scale.

**Data Collection Tools**

Sociodemographic and clinical pro forma: A semi-structured pro forma was used to enquire about sociodemographic details, details of psychopathology, presence of sexual dysfunctions, and questions pertaining to aims and objectives of the study.

**Tools**

- Hamilton Depression Rating Scale (HAMD – 17 item)[28,29]
- Female sexual functioning index(FSFI)[30-32]
- Arizona sexual experience scale for female.[33]

The Hamilton Rating Scale for Depression (HRSD/ HAM-D): This is a 17 item scale utilized to evaluate depression. It was developed by Max Hamilton in 1960.<sup>10</sup> It is administered by a clinician. If the result is between 0 and 7, then it is interpreted as normal, 8 to 13 is mild, between 14 and 18 is moderate, between 19 to 22 is severe, and very severe if score is more than or equal to 23. This measure offers reliability indexes with a Cronbach's coefficient alpha of 0.90 and correlation at periods of 1 and 2 weeks with  $r = 0.80$ .

Arizona sexual experience scale (ASEX): This is a short scale intended for both male and females. The measure is meant for the evaluation of sexual problems in patients suffering from mental illnesses and also patients with physical health issues. This self-report scale can be either carried out by a clinician or by the patient himself or herself. There are 5 items and each of them is scored from 1 to 6. Every question investigates a specific feature of sexual functions, that is, sexual drive, arousal, erection of penis/ vaginal lubrication, ability to reach orgasm, and satisfaction from orgasm. The final total score can range from 5 to 30. The following results give us an idea of sexual problems: total score of 19 or more, score on any one question of 5 or more, scores on any three individual questions of 4 or more. This scale has good internal consistency and scale reliability with  $\alpha = 0.9055$ . It showed strong test-retest reliability with  $r = 0.801$ ,  $P < .01$  for patients and  $r = 0.892$ ,  $P < .01$  for controls. This scale was used in our study to screen patients with sexual dysfunction.<sup>11</sup>

Female sexual functioning index (FSFI): It is a brief self-report scale. It was created for evaluating the main elements of sexual function in females. It consists of 19 questions. It delivers outcomes on six areas of sexual functions, that is, desire, arousal, lubrication, orgasm, satisfaction, and pain. It also

provides a total score. An overall score of 26.55 is the ideal cutoff score for distinguishing females with or without sexual problems.<sup>12</sup>

This scale was used to evaluate the dimensions of various aspects of sexual dysfunction. patients were re-administered the HAM-D, ASEX, and FSFI at the end of 6 weeks of treatment to assess their depression and sexual functioning. The scales were scored as per the test manual and data entered in an Excel sheet.

### Statistical Analysis

The SPSS software package for Windows, version 20.0, was used for statistical analysis. Descriptive statistics: Data summarization was carried out with the help of percentages and summary statistics will be with mean, range, and standard deviation. Inferential statistics: The frequency data was compared using the chi-square test/Fisher's exact test, and ordinal data using the Mann-Whitney and Wilcoxon test at 5% significance.

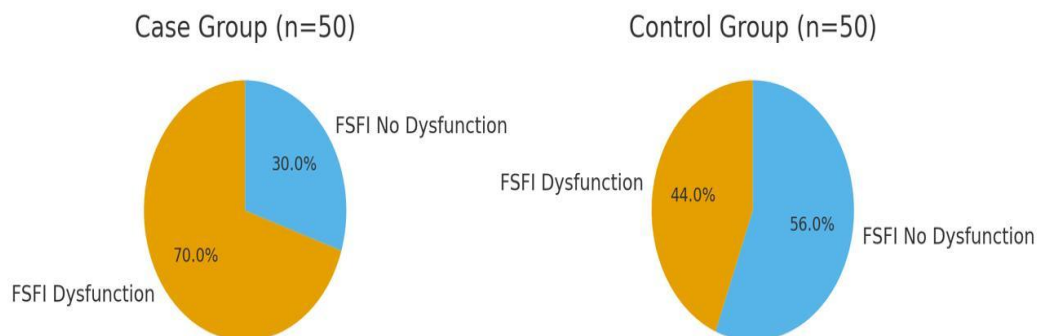
### Results

The mean ( $\pm$ SD) age of the sample in Case group was 29 years and in control group was 28 years. The age range in the Case group was 18 to 45 years and in control group was 18 to 44 years. The commonest age group was 26 to 30 years in the Case and control groups. Majority of the subjects had completed up to 10th standard in the Case group and most of the subjects were graduates in the control group. The commonest occupations were service in the control group and most of the females in the Case group were housewives.

**Table 1: FSFI\*Group Cross Tabulation**

| Group              | FSFI Dysfunction | FSFI No Dysfunction | Total  |
|--------------------|------------------|---------------------|--------|
| Case               |                  |                     |        |
| Count              | 35               | 15                  | 50     |
| % within the group | 70.0%            | 30.0%               | 100.0% |
| Control            |                  |                     |        |
| Count              | 22               | 28                  | 50     |
| % within the group | 43.3%            | 56.7%               | 100.0% |
| Total              |                  |                     |        |
| Count              | 57               | 43                  | 100    |
| % within the group | 56.7%            | 43.3%               | 100.0% |
| P = 0.05. (S)      |                  |                     |        |

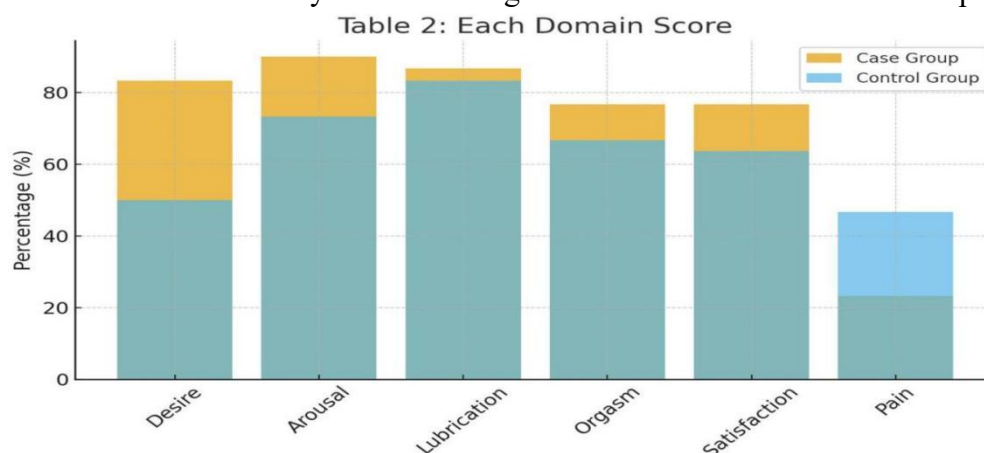
Tables 1 shows sexual dysfunction was significant with 70% in study group compared to 30 % in control.



**Table 2: Each Domain Score**

| Domain       | Case Group (%) | Control Group (%) | P-value |
|--------------|----------------|-------------------|---------|
| Desire       | 83.3% (42)     | 50% (25)          | 0.005   |
| Arousal      | 90% (45)       | 73.3% (37)        | 0.090   |
| Lubrication  | 86.7% (43)     | 83.3% (42)        | 0.710   |
| Orgasm       | 76.7% (38)     | 66.7% (33)        | 0.383   |
| Satisfaction | 76.7% (38)     | 63.7% (32)        | 0.257   |
| Pain         | 23.3% (12)     | 46.7% (23)        | 0.054   |

The Table 2 shows female sexual dysfunction is significant in individual domain except desire.

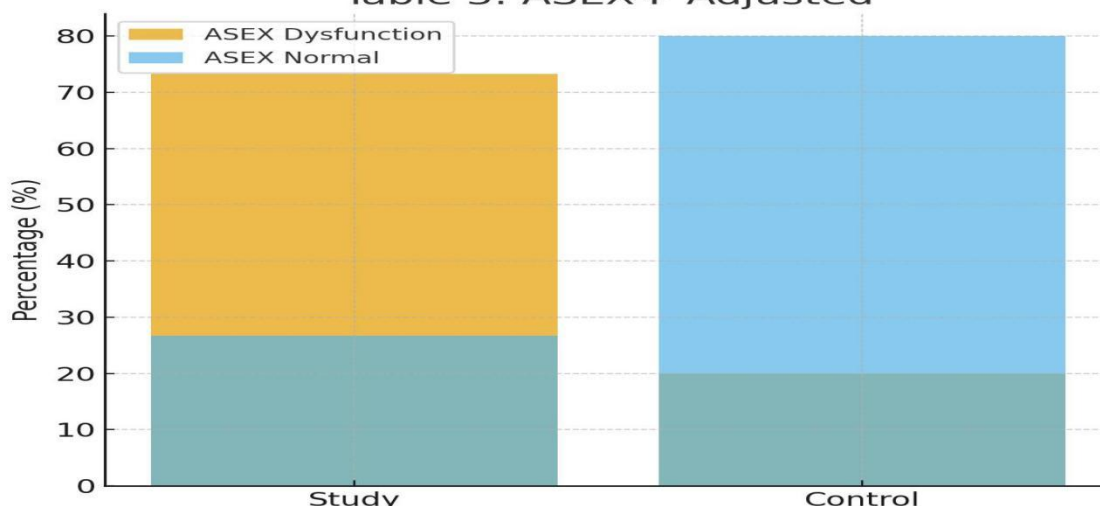


**Table 3: ASEX-F Adjusted**

| Group   | ASEX Dysfunction | ASEX Normal | Total (N = 50) | P-value |
|---------|------------------|-------------|----------------|---------|
| Study   | 37 (73.3%)       | 13 (26.7%)  | 50             | 0.0001  |
| Control | 10 (20.0%)       | 40 (80.0%)  | 50             |         |
| Total   | 47 (46.7%)       | 43 (53.3%)  | 100            |         |

Tables 3 shows ASEX-F was significant in determining sexual dysfunction 73.3% in study group compared to 26.7 % in control.

**Table 3: ASEX-F Adjusted**

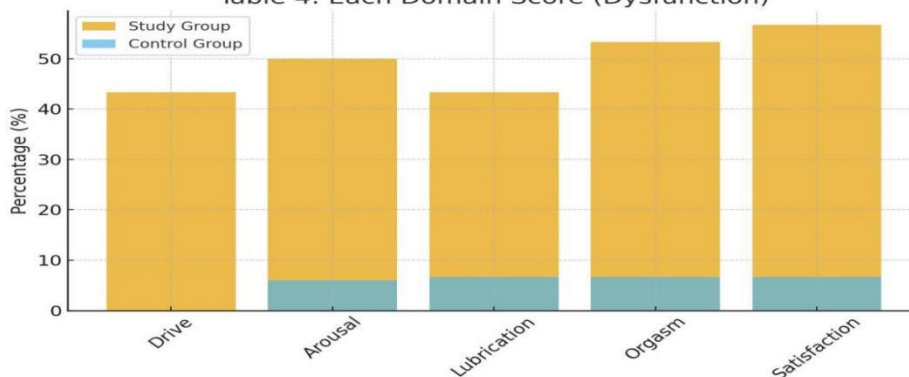


**Table : 4 Each domain score**

| Domain       | Study Group (Dysfunction) | Control Group (Dysfunction) | P-value |
|--------------|---------------------------|-----------------------------|---------|
| Drive        | 22 (43.3%)                | 0 (0%)                      | 0.000   |
| Arousal      | 25 (50%)                  | 3 (6%)                      | 0.000   |
| Lubrication  | 22 (43.3%)                | 3 (6.7%)                    | 0.001   |
| Orgasm       | 27 (53.3%)                | 3 (6.7%)                    | 0.000   |
| Satisfaction | 28 (56.7%)                | 3 (6.7%)                    | 0.000   |

The Table 4 shows significant dysfunction in all domains as compared to control. 43.3% in sex drive, 50% compared to 6% in arousal, 43.3% compared to 6.7% in lubrication, 53.3% compared to 6.7% in orgasm and 56.7% compared to 6.7% in the study group and control group respectively.

**Table 4: Each Domain Score (Dysfunction)**



**Table : 5 Combined Table of FSFI Dysfunction by Group and HAMD Severity**

| HAMD Severity    | FSFI Dysfunction in Study (Count) | FSFI Dysfunction in Control (Count) | Total FSFI Dysfunction (Count) | P-value  |
|------------------|-----------------------------------|-------------------------------------|--------------------------------|----------|
| Mild (8-13)      | 25                                | 12                                  | 37                             | 0.015    |
| Moderate 14-18() | 17                                | 13                                  | 30                             | 0.135    |
| Severe (19-22)   | 46                                | 11                                  | 57                             | 0.001    |
| Total            | 88                                | 36                                  | 124                            | 0.05 (S) |

The FSFI Dysfunction in the study and control groups is now shown for each level of depression severity (mild, moderate, severe). The total number of dysfunction Cases is computed for each level

of depression severity. The P-value for the group comparison across depression severities is included, showing that certain areas (severe depression) exhibit a significant difference in FSFI dysfunction.

Table 5: FSFI Dysfunction by Group and HAMD Severity

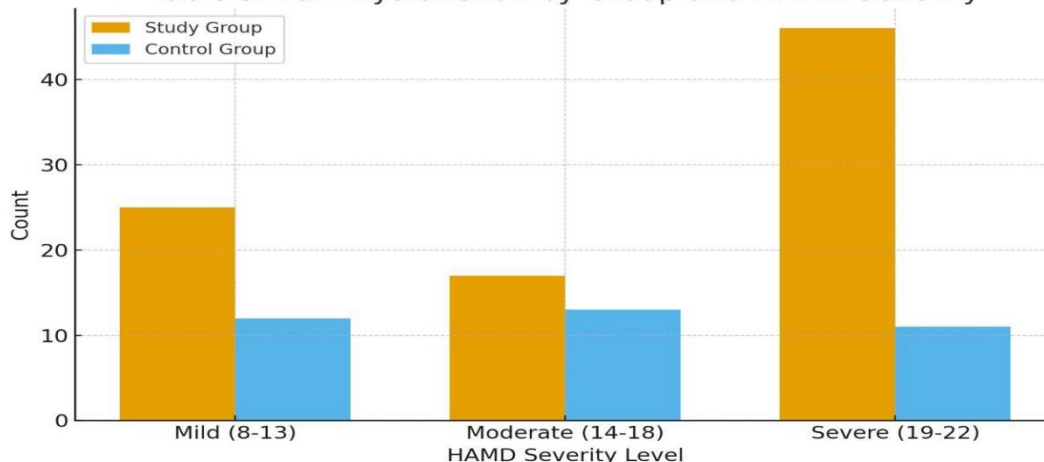
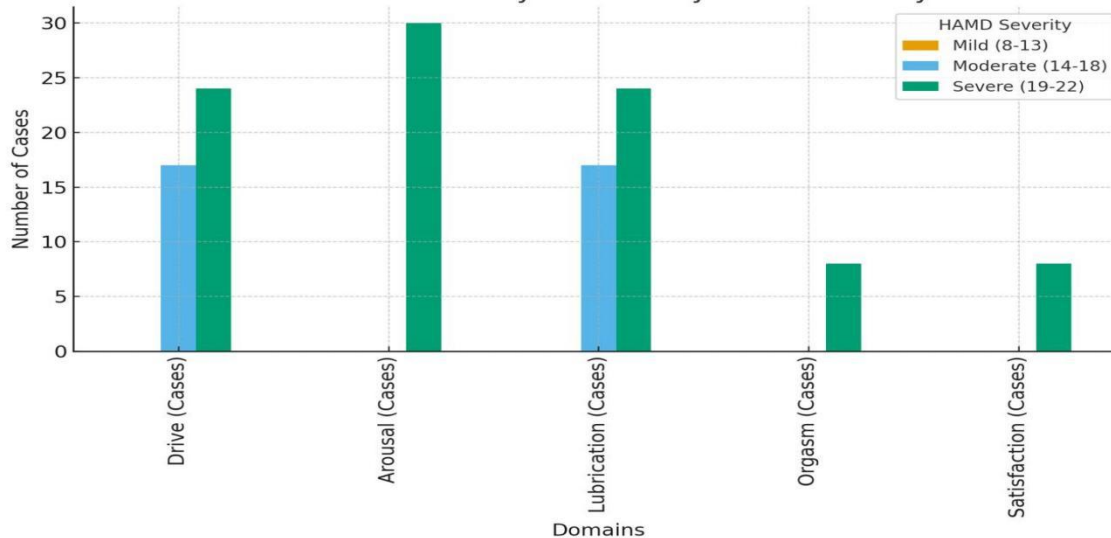


Table : 6 Final Combined Table: ASEX-F to HAMD

| HAMD Severity    | Drive (Cases) | Arousal (Cases) | Lubrication (Cases) | Orgasm (Cases) | Satisfaction (Cases) | Total ASEX Dysfunction (Cases) | P-value |
|------------------|---------------|-----------------|---------------------|----------------|----------------------|--------------------------------|---------|
| Mild (8-13)      | 0             | 0               | 0                   | 0              | 0                    | 0                              | 0.392   |
| Moderate (14-18) | 17            | 0               | 17                  | 0              | 0                    | 34                             | 0.050   |
| Severe (19-22)   | 24            | 30              | 24                  | 8              | 8                    | 40                             | 0.047   |

The P-values represent the significance of the association between HAMD severity and sexual dysfunction across different domains (Drive, Arousal, Lubrication, Orgasm, Satisfaction, Total ASEX Dysfunction). We see significant associations between HAMD severity and sexual dysfunction in some domains such as Arousal ( $p = 0.050$ ) and Total ASEX Dysfunction ( $p = 0.047$ ), with Major depression showing the highest dysfunction. Mild severity (0% HAMD) shows no dysfunction (0 Cases), while the Less than moderate group has moderate dysfunction, and the severe group has higher dysfunction across multiple areas. ASEX Dysfunction is more prevalent in the Study Group (73.3%) compared to the Control Group (20%). HAM-D severity correlates with ASEX Dysfunction, with the severe depression group showing the highest dysfunction in domains such as Arousal, Lubrication, and Total ASEX Dysfunction.

Table 6: ASEX-F Dysfunction by HAMD Severity



## DISCUSSION

This study aimed to investigate the prevalence and symptom profile of sexual dysfunction in women with drug-naive depression, involving a total of 100 female subjects. The study revealed a significant difference in the prevalence of sexual dysfunction between the study and control groups. Specifically, 70% of the women in the study group exhibited sexual dysfunction, as measured by the Female Sexual Function index (FSFI), compared to 43.3% in the control group. In the Arizona Sexual Experience Scale (ASEX-F), the prevalence of sexual dysfunction was 73.3% in the study group, compared to 20% in the control group. These findings underscore a considerably higher prevalence of sexual dysfunction in women with depression compared to the control group.

This study highlights the early onset and pervasive nature of sexual dysfunction in women with depression, underscoring the need for greater awareness and targeted interventions to address this often-overlooked issue.

This study investigates the relationship between depression severity and sexual dysfunction in women, employing a case-control design. The primary aim was to assess the prevalence of sexual dysfunction in women with depression and explore how it correlates with the severity of depression. The study's findings provide valuable insights into how depression impacts sexual health, particularly in individuals experiencing varying degrees of depressive severity.

The demographic characteristics of the study groups were comparable, with the mean age of the participants being 29 years in the Case group and 28 years in the Control group. The age range in both groups spanned from 18 to 45 years, with the most common age group being 26 to 30 years. In terms of educational background, the Case group predominantly consisted of individuals who had completed up to the 10th standard, whereas the Control group had a higher proportion of individuals who were graduates. Occupational differences were also notable; the majority of the females in the Case group were housewives, while most of the females in the Control group were employed in service-related jobs. These demographic variables were important to control for, as they may impact both the risk of depression and the perception of sexual dysfunction.

Sexual dysfunction was a significant finding in the study, with 70% of the individuals in the Case group reporting some form of sexual dysfunction, compared to only 30% in the Control group. This substantial difference points to a clear relationship between depression and sexual dysfunction, indicating that individuals with depression are more likely to experience issues related to sexual health. Table 2 of the study highlighted that sexual dysfunction was particularly prominent in all domains of sexual health except sexual desire in the Case group. This suggests that while depressive symptoms may influence multiple aspects of sexual functioning, desire may not be as profoundly impacted by depression as other domains such as arousal, lubrication, and orgasm.

To assess the relationship between depression severity and sexual dysfunction more rigorously, the study employed the ASEX-F scale, a tool widely used to measure sexual dysfunction in women. Table 3 demonstrated that 73.3% of participants in the Case group experienced sexual dysfunction, compared to only 26.7% in the Control group. These findings confirm that depression is strongly associated with sexual dysfunction, and the ASEX-F scale appears to be an effective tool in identifying these issues. Table 4 further dissects the prevalence of dysfunction in specific sexual domains. Dysfunction in sex drive, arousal, lubrication, orgasm, and satisfaction were significantly higher in the Case group compared to the Control group. Specifically, 43.3% of participants in the Case group reported dysfunction in sex drive, 50% in arousal, 43.3% in lubrication, 53.3% in orgasm, and 56.7% in sexual satisfaction. These findings provide further evidence that depression severely impacts various aspects of sexual functioning, with arousal, orgasm, and overall satisfaction showing particularly high dysfunction rates among depressed women.

The study also examined the association between depression severity and sexual dysfunction across different levels of depression severity, categorized as Mild, moderate, and severe. The analysis revealed that sexual dysfunction increased significantly with the severity of depression. Participants with Major depression exhibited the highest levels of sexual dysfunction in all sexual domains,



including arousal, lubrication, and overall ASEX dysfunction. These findings are consistent with previous research indicating that more severe forms of depression are associated with greater sexual dysfunction. In contrast, the Minor depression group did not show any dysfunction, and the Less than Major depression group displayed moderate dysfunction levels across several domains. These results underscore the importance of considering depression severity when evaluating sexual health issues in depressed individuals.

A key aspect of the study was the use of the Hamilton Depression Rating Scale (HAMD) to measure the severity of depression and its correlation with sexual dysfunction. The study found significant associations between the severity of depression and sexual dysfunction in specific domains such as arousal ( $p = 0.050$ ) and overall ASEX dysfunction ( $p = 0.047$ ). These results suggest that the more severe the depression, the greater the dysfunction observed in sexual domains, reinforcing the need for clinicians to consider sexual health as an integral part of managing depression, particularly in patients with higher levels of depressive severity.

One of the most significant findings of this study was the prevalence of sexual dysfunction in the Case group (73.3%) compared to the Control group (26.7%), suggesting that depression is a major contributing factor to sexual health problems in women. The relationship between depression severity and sexual dysfunction was further underscored by the significant dysfunction observed across various domains in individuals with Major depression. The study highlights the crucial role that depression plays in sexual health, with severe depression correlating with dysfunction in multiple sexual domains, such as sex drive, arousal, lubrication, and orgasm.

The results of this study have important clinical implications. They suggest that clinicians treating women with depression should be proactive in addressing sexual health concerns, particularly in patients with more severe forms of depression. By recognizing the association between depression severity and sexual dysfunction, healthcare providers can offer more comprehensive care, including discussing sexual health openly with patients and exploring treatment options that address both mental health and sexual well-being. Additionally, using tools such as the ASEX and FSFI scales can aid in the early identification of sexual dysfunction, leading to more targeted interventions.

In this study underscores the significant impact of depression on sexual health, particularly in individuals with more severe depressive symptoms. The high prevalence of sexual dysfunction in the Case group compared to the Control group, along with the significant associations between depression severity and dysfunction in various sexual domains, highlights the importance of addressing sexual dysfunction in the treatment of depression. Given the complex nature of this relationship, further research is necessary to explore potential mechanisms and effective treatments that can improve sexual functioning in women with depression. Clinicians should consider incorporating sexual health assessments into routine mental health care, especially for individuals with severe depression.

### **Limitation**

The sample size was small. However, with small sample we had compared the Cases and the control and used observer-rater scale. Sexual functioning in relation to mood changes during menstrual cycle was not taken into account.

### **CONCLUSION**

Our study found that there was a severe sexual dysfunction of sexual activity in depression in all domains of female sexual cycle. The study showed sexual dysfunction was 73.3% in study with ASEX-F compared to 26.27% in control and 70% in study to 30% in control group according to FSFI. The study found that there was an early age of onset of sexual dysfunction 18-25 years on the setting of depression. ASEX-F was found a better tool than FSFI in determining the female sexual dysfunction in depression. It also co-related with HAMD for depression. Sexual dysfunction was found very high with HAM D score of 16 and above (76% in FSFI and 80% in ASEX-F). On taking into account all three scales HAMD, FSFI and ASEX-F significant dysfunction was found in

orgasm and satisfaction domain of female sexual dysfunction with depression. The study found women with difficulty in sexual functioning in the areas of drive, arousal, lubrication, orgasm, satisfaction and pain both in Cases and control when enquired upon in a reassuring manner. Hence, every doctor should dutifully and empathetically assess the female sexual needs and functions ensuring privacy and confidentiality using rating scales which can aid in treatment and drug selection. If asked, assessed and addressed regularly, women will feel less hesitant and report more freely.

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