Female sexual dysfunction in generalized anxiety disorder

Monica Shringirishi1, K C Gurnani2, Manish Kumar3,*

1 Dept. of Psychiatry, Chirayu Medical College & Hospital, Bhopal, Madhya Pradesh, India
2 Dept. of Psychiatry, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India
3 Sri Aurobindo Institute of Medical Sciences, Indore, Madhya Pradesh, India

ARTICLE INFO

Article history:
Received 31-07-2020
Accepted 05-08-2020
Available online 18-09-2020

Keywords:
Female sexual dysfunction
FSFI

ABSTRACT

A lot has been studied about male sexual dysfunction but only few studies have been conducted on female sexual dysfunction so far. Our study aimed to explore sexual dysfunction among female psychiatric patients suffering from Generalized Anxiety disorder (GAD) and among healthy controls we compared 27 GAD patients with 100 healthy matched controls using FSFI scale. Chi square and T test was used for statistical analysis. Prevalence of sexual dysfunction was significantly higher in GAD patients as compared to healthy controls. In conclusion, with such an alarmingly high prevalence of sexual dysfunction among psychiatry patients it is important to consider patient’s sexual life while investigating.

© 2020 Published by Innovative Publication. This is an open access article under the CC BY-NC license (https://creativecommons.org/licenses/by-nc/4.0/)

1. Introduction

Human Sexuality is the sum total of an individual’s biological constitution, knowledge, life experiences, behavior and attitudes. It is an important aspect of human lives.1 2

It can serve as a vehicle for emotional connection with another person; intimate sexual relationships may act as buffers against impact of life stress and contributes significantly to a sense of competence in an adult.3–6

A lot has been studied about male sexual dysfunction but only few studies have been conducted on female sexual dysfunction so far.

Our study aimed to explore sexual dysfunction among female psychiatric patients suffering from Generalized Anxiety disorder (GAD) and among healthy controls. Ascertaining and attending to sexual dysfunctions not only enhance the therapeutic bond between psychiatrist and patients but also will have several positive spinoffs out of which sense of wellness and competence in the patients can be considered as most important. An explorative study of this nature is likely to add impetus to research in this very important area.

2. Materials and Methods

The study was conducted in a tertiary care teaching hospital in Bhopal (M.P). For our study we took 27 patients with GAD and 100 matched controls. The study had a cross-sectional design and the samples were recruited by purposive sampling.

Psychiatric cases were taken both from OPD and IPD of People’s Hospital Bhopal, who were between the age group of 18–45 years, married, and those who were diagnosed as having Generalized anxiety disorder as per DSM 5. Data from control population was collected from the married females between age group of 18–45 years who came along as informant with the psychiatric patient to our hospital. Patients from both Urban and Rural areas are included in the study.

We excluded those subjects who were not in the required age range, those who had significant cognitive impairment, or a major medical conditions and those who were not willing to participate in the study were.
The purpose of the study was explained to every individual included in the study. They were given freedom of choice to accept or refuse to participate in the study. Those who provided written informed consent were included in the study. They were told that less objective information was available regarding sexual experiences of women. We wanted to collect reliable data in this area so that sexual and marital problems could be effectively treated. They were assured that the information will be kept confidential. We did not interview the husband because it was felt that if both partners are interviewed then the chances are that more subjects may give socially acceptable answers. Most of the subjects cooperated in this endeavor.

2.1. Instrument used

Sexual dysfunction was assessed using Female Sexual Function Index (FSFI) scale. The scale is a 19 item questionnaire, developed as multidimensional self-report instrument for the assessment of the key dimensions of sexual functioning in women in last 1 month. It is psychometrically sound, easy to administer. The items of the scale are divided into 6-domains which include desire (2 questions), subjective arousal (4 questions), lubrication (4 questions), orgasm (3 questions) and pain (3 questions). Overall test–retest reliability coefficients are high for each of the individual domains (r = 0.79 to 0.86) and the scale has been reported to have high degree of internal consistency (Cronbach’s alpha values of 0.82 and higher) and good construct validity. The questionnaire is designed and validated for assessment of female sexual function in clinical trials and epidemiological studies. FSFI score of less than 26.55 is taken as an indicator of sexual dysfunction. The questionnaire was translated from English to Hindi and was back translated. Subjects were personally interviewed and questions pertaining to individual domains were asked after rapport establishment.

2.2. Statistical test employed for obtaining data were

Chi square test was used to match the demographic data and for comparing the prevalence of sexual dysfunction among patients with GAD and healthy controls.

Student’s T test was used to compare the mean FSFI domain scores and total FSFI scores between GAD patients and Healthy controls.

Significance level was fixed at P ≤ 0.05

3. Results

In our study the mean age of patients with GAD is 34.3 years and the mean age of healthy controls is 32.5 years. There was no statistically significant difference in the distribution of patients with GAD and healthy controls. According to age and various other demographic data (locality, education, occupation, years of marriage and type of contraceptive method used).

The prevalence of sexual dysfunction (as per cutoff score of FSFI scale) in patients with GAD was 85.18% and 38% in healthy controls. The difference in the prevalence of sexual dysfunction in two groups was highly significant (P=0.001).

The mean values of all the domains of FSFI scores were less in patients with GAD than healthy controls (desire 2.51 ± 0.9 and 3.50 ± 0.6 P=0.001, arousal 3.48 ± 0.80 and 3.77 ± 0.61, lubrication 4.00 ± 0.87 and 4.45 ± 0.74, orgasm 3.44 ± 0.97 and 4.25 ± 0.63, satisfaction 3.88 ± 0.8 and 4.53 ± 0.59, pain 5.33 ± 0.83 and 5.74 ± 0.45, FSFI score 22.55 ± 3.37 and 26.26 ± 3.05 in patients with GAD and healthy controls respectively). This difference in all the mean values of all the domains was statistically significant.

4. Discussion

In our study 85.18% patients with Generalized Anxiety Disorder (GAD) had sexual dysfunction compared to 38% in the healthy controls. All six FSFI domain scores were significantly less among GAD cases as compared to healthy controls. There was statistically significant difference between anxiety cases and healthy controls for all the FSFI domain and total FSFI score (P=0.001, 0.040, 0.008, 0.001, 0.001, 0.001 for desire, arousal, orgasm, satisfaction, pain and total FSFI score respectively in comparison between Anxiety disorder and healthy controls).

Our study results confirm the results of previous studies on sexual dysfunction in patients of anxiety disorder.

The role of anxiety in arousal is a controversial topic. Some laboratory studies suggest that under certain conditions anxiety may actually facilitate genital sexual arousal. The possible explanation of this controversy may be that the state and trait anxiety are associated with sexual arousal.

Different studies have suggested that there is a curvilinear relation between state anxiety and physiological sexual arousal. State anxiety is uniquely associated with increase in sympathetic nervous system response which may independently affect sexual responses.

Most studies on role of sexual arousal in woman have focused primarily on anxiety from specific concern about sexual performance. Masters and Johnson gave the concept of spectatoring, a type of performance anxiety which is characterized by focusing ones attention outwards rather than inwards pleasurable sensation which increases the fear of performance and results in impairment in sexual functioning subsequently.

Barlow suggested that spectatoring interrupts sexual performance through cognitive interference. He speculated that these patients are not able to divert their mind from oneself and sexual performance and are not able to focus on sensory aspects of sexual experience.

Eysenck and Eysenck correlated sexual variables with three factor PEN (Psychoticism, Extraversion,
### Table 1: Demographic Distribution of GAD cases and healthy controls.

| Demographic     | Anxiety cases (N=27) | Healthy controls (N=100) | Total | X² Value | P Value |
|-----------------|----------------------|--------------------------|-------|----------|---------|
| Age             |                      |                          |       |          |         |
| 18-23           | 2                    | 10                       | 12    |          |         |
| 24-29           | 1                    | 18                       | 19    |          |         |
| 30-35           | 13                   | 36                       | 49    | 6.09     | 0.193   |
| 36-40           | 7                    | 30                       | 37    |          |         |
| 41-45           | 4                    | 6                        | 10    |          |         |
| Mean age        | 34.3 years           | 32.5 years               | 37    | 0.171    | 0.679   |
| Locality        |                      |                          |       |          |         |
| Rural           | 7                    | 30                       | 37    |          |         |
| Urban           | 20                   | 70                       | 90    |          |         |
| Illiterate      | 8                    | 20                       | 28    |          |         |
| Primary education | 3              | 10                       | 13    |          |         |
| Education       |                      |                          |       |          |         |
| Secondary       | 3                    | 15                       | 18    | 2.25     | 0.896   |
| High school     | 3                    | 18                       | 21    |          |         |
| Higher secondary | 5              | 14                       | 19    |          |         |
| Graduate        | 4                    | 18                       | 22    |          |         |
| Post graduate   | 1                    | 5                        | 6     |          |         |
| Occupation      |                      |                          |       |          |         |
| Working         | 4                    | 20                       | 24    | 0.373    | 0.541   |
| Non-working     | 23                   | 80                       | 103   |          |         |
| Years of marriage |                 |                          |       |          |         |
| 0-10            | 8                    | 32                       | 40    |          |         |
| 11-20           | 12                   | 45                       | 57    | 0.116    | 0.943   |
| 21-30           | 7                    | 23                       | 30    |          |         |
| Nil             | 3                    | 11                       | 14    |          |         |
| Condom          | 10                   | 48                       | 58    |          |         |
| Type of Contraception |        |                          |       |          |         |
| Tubectomy       | 12                   | 25                       | 37    |          |         |
| Coitus interruptus | 1           | 5                        | 6     | 5.09     | 0.532   |
| OC Pills        | 0                    | 4                        | 4     |          |         |
| IUD             | 1                    | 5                        | 6     |          |         |
| Hysterectomy    | 0                    | 2                        | 2     |          |         |

### Table 2: Comparison of Prevalence of Sexual Dysfunction among patients with GAD and Healthy Controls.

| Groups                      | N   | Present Number | Present % | Absent Number | Absent % | Chi Square | P Value |
|-----------------------------|-----|----------------|-----------|---------------|----------|------------|---------|
| Generalized Anxiety Disorder| 27  | 23             | 85.18%    | 04            | 14.82%   | 19.0       | 0.001   (HS) |
| Healthy Control              | 100 | 38             | 38%       | 62            | 62%      |            |         |

### Table 3: Comparison of Mean FSFI Domain scores and Total FSFI Scale Scores between GAD patients and Healthy Controls

| Groups            | N   | Desire Mean±SD | Arousal Mean±SD | Lubrication Mean±SD | Orgasm Mean±SD | Satisfaction Mean±SD | Pain Mean±SD | FSFI Score Mean±SD |
|-------------------|-----|----------------|-----------------|---------------------|----------------|----------------------|--------------|--------------------|
| Anxiety Disorder  | 27  | 2.51±0.97      | 3.48±0.80       | 4.00±0.87           | 3.44±0.97      | 3.88±0.80            | 5.33±0.83    | 22.55±3.37         |
| Healthy Control   | 100 | 3.50±0.67      | 3.77±0.61       | 4.45±0.74           | 4.25±0.63      | 4.53±0.59            | 5.74±0.45    | 26.26±3.05         |
| Student ‘t Test   |     | 6.076          | 2.073           | 2.677               | 5.194          | 4.610                | 3.451        | 5.473              |
| Significance ‘P   |     | 0.001(HS)      | 0.040(S)        | 0.008(S)            | 0.001(HS)      | 0.001(HS)            | 0.001(HS)    |                    |

Shringirishi, Gurnani and Kumar / IP Indian Journal of Neurosciences 2020;6(3):192–196
Neuroticism) model of personality and reported that the negative emotionality characteristic of neuroticism (i.e., anxiety, guilt, self-consciousness) would be deterrent to sexual expression. Similarly in a more recent study, Heaven et al also found moderate correlation of neuroticism with sexually specific fears and reported that anxiousness is negatively related to sexual motivation. Central noradrenergic systems play a vital role in general arousal and in the control of autonomic outflow. Cell bodies arise in the locus coeruleus at the border of the midbrain and brain stem and project to virtually all forebrain regions, including the hypothalamus, limbic and motor systems, and cortex. Influences of variables. Emotional deprivation from their spouses and to maintain harmony of the family. Increased sympathetic tone during anxiety can distract the individual from erotic stimuli and thus also impairs sexual arousal. Conversely there are reports which suggest that increased noradrenergic tone could easily account for decreases in sexual desire owing to insufficient general arousal. Various other studies have shown relationship of Anxiety disorder with sexual dysfunction but most of them have focused on male sexual dysfunction. High anxiety levels have also been found in females with dyspareunia who seem to experience severe pain during coitus. Involvement of various limbic structures including hippocampal cortex are reported in pain perception in sexual dysfunction, these structures also play important role in anxiety disorder. Sexual satisfaction and pleasure are likely to be impaired in females with social phobia along with concomitant desire disorder, pain during intercourse and less coital frequency but we have not included patients with social phobia in our study. Previous studies have shown relationship between OCD and PTSD with sexual dysfunction but we have not included these disorders as a subcategory of anxiety disorder. All phases of sexual cycle are impaired by the use of antidepressants. 30-65% of incidence has been reported by the use of SSRI, SNRI and MAO inhibitors. We have included both the drug naïve patients and patients who were already receiving some treatment for GAD, so we cannot say how much drugs have contributed to the sexual dysfunction as a side effect. As India being a male dominated society with a censorious moral attitude towards sex, it becomes very difficult for a woman to discuss the problems she faces in her sexual functioning. Sexual dysfunction is underreported as woman does not openly discuss, they may hide the information due to stigma, embarrassment, fear of emotional deprivation from their spouses and to maintain harmony of the family.

In conclusion, with such an alarmingly high prevalence of sexual dysfunction among psychiatry patients it is important to consider patient’s sexual life while investigating. Failure to investigate patient’s psychological background can have negative influence on the treatment goals in patients with sexual dysfunction. Clinical evaluation should not only be limited to the patient but should be extended to the partner also.

5. Source of Funding
None.

6. Conflict of Interest
None.

References
1. Reed DM, Lief HI. Sex education in Medicine. Newyork: Spectrum Publication; 1976.
2. Gabbardgo. Mind and brain in psychiatric treatment. In: and others, editor. Treatment of psychiatric disorders. American Psychiatric Press; 2001. p. 3-20.
3. Segovies RT. Female sexual disorders:Psychiatricaspects. Can J Psychiatry. 2002:47:419–25.
4. Zemishlylany Z, Weizman A. The impact of mental illness on sexual dysfunction. Adv Psychosom Med. 2008;29:89–106.
5. Rosen R, Brown C, Heiman J, Leib S. The Female Sexual Function Index (FSFI): A Multidimensional Self-Report Instrument for the Assessment of Female Sexual Function. J Sex Marital Ther. 2000;26:191–208.
6. Prakash O, Satyannarayanaarao. Sexuality Research in India: An update. India J Psychiatry. 2010;52(7):260–3.
7. Aksaray G, Yelken B, Kaptan C. Sexuality in Women with Obsessive Compulsive Disorder. J Sex Marital Ther. 2001;27(3):273–7.
8. Biodinger L, Hermesh H, Aizenberg D, Valevski A, Marom S, Shiloh R, et al. Sexual Function and Behavior in Social Phobia. J Clin Psychiatry. 2002;63(10):874–9.
9. Figueira I, Possidente E, Marques C, Hayes K. Sexual dysfunction: A neglected complication of panic disorder and social phobia. Arch Sexual Behavior. 2001;30:369–77.
10. Minnen AV, Kampman M. The interaction between anxiety and sexual functioning: A controlled study of sexual functioning in women with anxiety disorders. Sex Relationship Ther. 2000;15(1):47–57.
11. Hoon PW, Wincze JP, Hoon EF. A test of reciprocal inhibition: Are anxiety and sexual arousal in women mutually inhibitory? J Abnormal Psychol. 1977;86(1):65–74.
12. Agarwal AK. Frigidity: A clinical study. Indian J Psychiatry. 1977;19:1–7.
13. Jensen I, Lendorf A, Stimpel H, Frost I, Ibsen H, Rosenkilde P, et al. The prevalence and etiology of impotence in 101 male hypertensive outpatients. Am J Hypertens. 1999;12:271–5.
14. Hoehn-Saric R, Mcleod DR. The peripheral sympathetic nervous system: Its role in normal and pathologic anxiety. Psychiatr Clin North Am. 1988;11:375–86.
15. Meston CM. Sympathetic nervous system activity and female sexual arousal. Am J Cardiol. 2000;86(2):30–4.
16. Masters WH, Johnson VE. Human sexual inadequacy. Boston, MA: Little Brown; 1970.
17. Barlow DH. Causes of sexual dysfunction: The role of anxiety and cognitive interference. J Consulting Clin Psychol. 1986;54(2):140–8.
18. Eysenck HJ. Personality and Sexual Adjustment. Br J Psychiatry. 1971;118(547):593–608.
19. Eysenck HJ. Personality and sexual behavior. J Psychosom Res. 1972;16:141–52.
20. Barbara L, Andersen JM, Cyranowski. Department of Psychology, The Ohio State University.
21. Heaven PCL, Crocker D, Edwards B, Preston N, Ward R, Woodbridge N. Personality and sex. *Personal Individual Differ.* 2003;35(2):411–9.
22. Moore RY, Bloom FE. Central Catecholamine Neuron Systems: Anatomy and Physiology of the Norepinephrine and Epinephrine Systems. *Ann Rev Neurosci.* 1979;2(1):113–68.
23. Maggi M, Filippini S, Ledda F, Magini A, Forti G. Erectile dysfunction: from biochemical pharmacology to advances in medical therapy. *Eur J Endocrinol.* 2000;143(2):143–54.
24. Filippini S. Effects of hypoxia on endothelin-1 sensitivity in the corpus cavernosum. *Mol Human Reprod.* 2003;9(12):765–74.
25. Shamloul R. Management of Honeymoon Impotence. *J Sexual Med.* 2006;3(2):361–6.
26. Mallis D, Moysidis K, Nakopoulos E, Papaharitou S, Hatzimouratidis K, Hatzichristou D, et al. PSYCHIATRIC MORBIDITY IS FREQUENTLY UNDETECTED IN PATIENTS WITH ERECTILE DYSFUNCTION. *J Urol.* 2005;174(5):1913–6.
27. Farre JM, Fora F, Lasheras MG. Specific aspects of erectile dysfunction in psychiatry. *Int J Impotence Res.* 2004;16(S2):S46–9.
28. Lee JC, Surridge D, Morales A, Heaton JWP. The prevalence and influence of significant psychiatric abnormalities in men undergoing comprehensive management of organic erectile dysfunction. *Int J Impotence Res.* 2000;12(1):47–51.
29. Hawton K, Catalan J. Prognostic factors in sexual therapy. *Behav Res Ther.* 1986;24(4):377–85.
30. D’Ottavio G, Simonelli C. Andrologia e Psicopatologia del Comportamento Sessuale. Rome: Nuova Italia Scientifica; 1990.
31. Zilbergeld B. The New Male Sexuality. New York: Bantam Books; 1993.
32. Dunn KM, Croft PR, Hackett GI. Association of sexual problems with social, psychological, and physical problems in men and women: a cross sectional population survey. *J Epidemiol Community Health.* 1999;53(3):144–8.
33. Williams W. Secondary premature ejaculation. *Aust NZ J Psychiatry.* 1984;18:333–40.
34. Nunnis D, Mandler D. Psychological and psychosexual aspects of vulvar vestibulitis. *Sex Transm Infect.* 1997;73(6):541–4.
35. Granot M, Friedman M, Yarnitsky D, Zimmer EZ. Enhancement of the perception of systemic pain in women with vulvar vestibulitis. *J Epidemiol Community Health.* 2002;109(8):863–6.
36. Pukall CF, Binik YM, Khalife F, Amsel R, Abbott FV. Vestibular tactile and pain thresholds in women with vulvar vestibulitis syndrome. *Pain.* 2002;96(1):163–75.
37. Brooks J, Tracey I. REVIEW: From nociception to pain perception: imaging the spinal and supraspinal pathways. *J Anat.* 2005;207(1):19–33.
38. Kanda M, Nagamine T, Ikeda A. Primary somatosensory cortex is actively involved in pain processing in human. *Brain Res.* 2000;853:282–9.
39. Vogt BA, Berger GR, Derbyshire SWG. Structural and functional dichotomy of human midcingulate cortex. *Eur J Neurosci.* 2003;18(11):3134–44.
40. Singer T. Empathy for Pain Involves the Affective but not Sensory Components of Pain. *Sci.* 2004;303(5661):1157–62.
41. Rome HP, Rome JD. Limbically Augmented Pain Syndrome (LAPS): Kindling, Corticollum Sensitization, and the Convergence of Affective and Sensory Symptoms in Chronic Pain Disorders. *Pain Med.* 2000;1(1):7–23.
42. Tignol J, Martin C, Auriaichome M. Case study—relationship between prevalence of shyness, social phobia and avoidant personality in male sexual disorders. *Eur J Sex Transm Infect.* 2000;15(1):31–41.
43. Ernst C, Földényi M, Angst J. The Zurich study: Sexual dysfunction and disturbances in young adults. Data of a longitudinal epidemiological study. *Eur Arch Psychiat Clin Neurosci.* 1993/243:179–88.
44. Freund B, Stekete G. Sexual History, Attitudes and Functioning of Obsessive-Compulsive Patients. *J Sex Marital Ther.* 1989;15(1):31–41.
45. Valinka NC, Denys D, Bus L, Westenberg HG. Sexual pleasure in women with obsessive-compulsive disorder? *J Affect Disord.* 2006;91(1):19–25.
46. Lensi P, Cassano GB, Correddu G. Obsessive-compulsive disorder: familial-developmental history, symptomatology, comorbidity and course with special reference to gender-related differences. *Br J Psychiatry.* 1996;169:101–7.
47. Zatzick DF, Marmar CR, Weiss DS, Browner WS, Metzler TJ, Golden JM, et al. Posttraumatic Stress Disorder and Functioning and Quality of Life Outcomes in a Nationally Representative Sample of Male Vietnam Veterans. *Am J Psychairty.* 1997;154(12):1690–5.
48. Solrush LP, Solrush DS. Male erectile disorders in Vietnam combat veterans with chronic post traumatic stress disorder. Special issue: Sexuality and disability in adolescence and beyond. *Int J Adolesc Med Health.* 1994;7:119–24.
49. Cosgrove DJ, Gordon Z, Bernie JE, Hami S, Montoya D, Stein MB, et al. Sexual dysfunction in combat veterans with post-traumatic stress disorder. *Urol.* 2002;60(5):881–4.
50. Kotler M, Cohen H, Aizenberg D, Matar M, Loewenthal U, Kaplan Z, et al. Sexual Dysfunction in Male Posttraumatic Stress Disorder Patients. *Psychother Psychosom.* 2000;69(6):309–15.
51. Montejo AL, Llorca G, Tzquierdo GA, Rico-Villademoros F. Incidence of sexual dysfunction associated with antidepressant agents: A prospective multi-centre study of 1022 outpatients. *J Clin Psychiatry.* 2001;62:10–22.
52. Kennedy SH, Eifeldt BS, Dickens SE, Bacchiochi JR, Bagby RM. Antidepressant-Induced Sexual Dysfunction During Treatment With Moclobemide, Paroxetine, Sertraline, andVenlafaxine. *J Clin Psychiatry.* 2000;61(4):276–81.
53. Harrison WM, Rabkin JG, Elhardt AA, Stewart JW, McGrath PJ, Ross D, et al. Effects of Antidepressant Medication on Sexual. *J Clin Psychopharmacol.* 1986;6(3):144–9.

Author biography

Monica Shringirishi Assistant Professor

K C Gurnani Professor

Manish Kumar Research Assistant