Phenomenology, disability and sexual functioning in female Dhat syndrome: a study of tertiary care gynaecology outpatients

Shubha Joshi,1 Adarsh Tripathi,2 Smriti Agarwal,3 Nisha Singh,3 Bandna Gupta,2 Anil Nischal,2 Sujita Kumar Kar 2

ABSTRACT

Background Dhat syndrome, a clinical condition related to semen loss in urine often found among males in India, has rarely been described as a separate clinical condition in females. Women with the syndrome complain of passing vaginal discharge and can be excessively concerned and preoccupied with it, often attributing various physical symptoms to the loss of vaginal fluids.

Aims This study aimed to assess the sociodemographic and clinical profiles of female patients with Dhat syndrome and their perceived stress, disability and sexual functioning.

Methods Sociodemographic details of 70 females with non-pathological vaginal discharge were evaluated with a semistructured sociodemographic assessment. The phenomenology of the vaginal discharge was assessed with the Scale for Assessment of Female Dhat Syndrome Questionnaire. Anxiety and depressive symptoms were measured with the Hospital Anxiety and Depression Scale. Perceived stress in the past month and disability caused by the illness were assessed with the Perceived Stress Scale and the World Health Organization Disability Assessment Scale. In addition, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Level 2 Somatic Symptoms Scale was administered to rate the severity of somatic symptoms, and sexual functioning was evaluated using the Female Sexual Function Index (FSFI) scale for women who had had sexual intercourse in the past month.

Results The mean age of onset vaginal discharge was 23.0 (6.6) years. Biological factors, such as urinary tract infection, were the commonly attributed cause of the loss of vaginal fluids. Psychiatric comorbidity and perceived moderate stress in the past month were found in 38.6% and 68.6% of female patients with Dhat syndrome, respectively. Disability scores tended to be low. Among the females having had sexual intercourse in the past month, 48.3% had FSFI scores indicative of a female sexual disorder.

Conclusions The clinical presentation of women with non-pathological vaginal discharge is similar to that of males with Dhat syndrome. It requires comprehensive assessment and management that targets the biological, social and psychological factors and cultural issues.

WHAT IS ALREADY KNOWN ON THIS TOPIC
⇒ In India, females attribute significant psychological distress to non-pathological vaginal discharge, similar to the Dhat syndrome in males.

WHAT THIS STUDY ADDS
⇒ Females with Dhat syndrome have significant impairment in sexual functioning, low disability and high perceived stress.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY
⇒ Future research needs to explore the predictors of disability and poor sexual functioning among females with Dhat syndrome.

INTRODUCTION

Dhat, a word derived from the Sanskrit language, refers to a bodily produced ‘elixir’ considered essential to life as it guarantees health and longevity.1 It is related to a well-established, culture-bound syndrome found on the Indian subcontinent known as male Dhat syndrome, a clinical condition related to semen loss in urine. However, Dhat syndrome in females is lesser known and has rarely been described as a separate clinical condition. Some researchers and clinicians have discussed a female equivalent of male Dhat syndrome. The International Classification of Diseases, 10th Revision (ICD-10) includes Dhat syndrome under ‘Other specified neurotic disorder’.2 It is defined as an undue concern about the debilitating effects of the passage of semen. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) includes Dhat syndrome under the appendix as a ‘Glossary of cultural concepts of distress’.3

Vaginal discharge is a common reason for seeking consultation in outpatient departments (OPD) in India. Females with the
condition can be excessively concerned and preoccupied with it and report various medically unexplainable bodily symptoms. Vaginal discharge is physiological and subject to hormonal variations. Fluctuations in oestrogen and progesterone levels can alter the consistency and composition of the discharge. Because the quality and quantity of vaginal discharge vary during the ovulatory and menstrual cycles throughout a woman’s life, defining normality for the amount of vaginal discharge is difficult. Thus, some women may perceive a normal physiological vaginal discharge as abnormal. Women presenting in OPDs with a whitish vaginal discharge often have multiple vague-associated symptoms. Of note, numerous false beliefs are prevalent among Asian women regarding the cause and effect of this vaginal discharge. For example, one of these beliefs is stated, ‘100 drops of blood are required to make a single drop of safed pani’. Various physical symptoms are believed to be caused by the loss of this genital secretion.

Medically, complaints of vaginal discharge are primarily interpreted from a purely biomedical perspective. Health workers tend to offer symptomatic management of the complaints without any laboratory or clinical confirmation of infection. Women with non-pathological vaginal discharge are often inappropriately treated with antibiotics due to the lack of appropriate medical education and clinical skill in identifying and dealing with non-pathological vaginal discharge.

Because the ICD-10 and DSM-5 do not define female Dhat syndrome (FDS) as a separate phenomenon, diagnostic criteria for FDS are unclear. Thus, researchers have used varying definitions for diagnosing FDS, and the psychological needs of these patients have been ignored in clinical settings due to a lack of research and training. Addressing this need, our research team developed an operational definition of FDS and studied patients presenting with non-pathological vaginal discharge at a gynaecology OPD. Increased understanding of this condition may assist in developing holistic approaches that directly address these patients’ needs. This study’s primary aim was to assess the sociodemographic and clinical profiles of patients with FDS. In addition, we aimed to measure their perceived stress and disability and the sexual function of the sexually active ones.

**MATERIALS AND METHODS**

The study was a cross-sectional, observational study of female patients presenting with vaginal discharge in the Obstetrics and Gynaecology Outpatient Department of King George’s Medical University, Lucknow, India.

**Sample size calculation**

\[ n = \frac{Z^2 \times P(1-P)}{L^2} \]

Precision=5%.
Prevalece=28.99%. Population size=180.

CI=95% specified limits (23.85%-33.85%).
Estimated sample size (n)=115.

Based on the above calculation, an ideal sample size of 115 was determined, and an appropriate number of potential subjects were screened to meet this quota. The first two consecutive patients attending the obstetrics and gynaecology OPD from August 2019 to February 2020 were included.

**Procedure**
The first two consecutive patients who presented with complaints of vaginal discharge in the gynaecology OPD on the specified days were initially evaluated and clinically examined by a gynaecologist. This was purposefully done to minimise the selection biases. Relevant investigations were done to rule out any organic pathology. Patients without abnormal investigation reports and no other contributory medical causes were referred to the research investigator, who screened and evaluated them for FDS. The operational criteria we used for this diagnosis in our studies included: (1) presentation with non-pathological vaginal discharge, (2) reports of distress due to the passing of this vaginal discharge, and (3) attribution of other symptoms due to the loss of vaginal fluids. Other inclusion criteria were ages between 18 and 45 years and those giving valid informed consent. Exclusion criteria were less than 18 years of age, not meeting the operational criteria, failure to give consent, postmenopausal or menstrual irregularities. All patients with medical conditions that could confuse the diagnosis were also excluded.

A semistructured evaluation of the included patients’ sociodemographic and menstrual and sexual history details was carried out, and the DSM-5 was used to diagnose psychiatric illnesses. The subjects were assessed with the Scale for Assessment of Female Dhat Syndrome (SAFeD) to explore the phenomenology of vaginal discharge. The Hospital Anxiety and Depression Scale (HADS) was administered to rate anxiety and depression. The Perceived Stress Scale (PSS) was used to assess the stress perceived in the past month, and the World Health Organization Disability Assessment Scale 2.0 (WHO-DAS 2.0) was applied to determine disability.

The DSM-5 Level 2-Somatic Symptom-Adult Patient (adapted from the Patient Health Questionnaire Physical Symptoms (PHQ-15)) was used to rate the severity of somatic symptoms. Sexual functioning was assessed with the Female Sexual Function Index (FSFI) for women who had had sexual intercourse in the past month. All scales were administered by a trained mental health professional. The relationship between the duration of vaginal discharge, the severity of perceived stress and somatic symptoms, and the disability summary scores were analysed using Spearman’s correlation.

**Operational criteria for FDS**
As mentioned above, our operational criteria for FDS are as follows: (1) presentation with non-pathological vaginal discharge, (2) reports of distress due to the passing...
of this vaginal discharge, and (3) attribution of other symptoms due to the loss of vaginal fluids. All of the above criteria must be met to establish a diagnosis of FDS. Clinicians must first determine the non-pathological nature of the vaginal discharge; thus, this is the first criterion of the operational definition. Though many women have vaginal discharge, most do not have associated somatic or psychological symptoms, so complaints of these symptoms are another essential component of the diagnosis. For example, Chaturvedi found that 17% of healthy women complained of vaginal excretions, but none were concerned about it. Another important distinction is that some women experiencing vaginal discharge may have somatic symptoms but do not attribute these symptoms to the secretions. Since the vaginal discharge does not distress these patients, they should not be diagnosed with FDS. Hence, to comprehensively assess and reliably diagnose FDS for our study, we used the above operational definition to include only patients who accurately represented the disorder. Using this formal system for assessment and diagnosis also suggests that the results are more likely to be replicable in subsequent studies.

Statistical analysis
Data were described in percentages and proportions using descriptive statistics. Additional correlational analysis using Spearman’s r correlation was done (as the data were non-parametric in distribution) to measure the association of clinical variables with the outcome variables.

RESULTS
A total of 102 patients were screened for inclusion in the study (figure 1). Of these, 70 were included, and 32 were excluded. The reasons for exclusion from the study were age less than 18 years (n=18), failure to meet the FDS operational criteria (n=6), no consent (n=6), post-menopausal (n=1) and menstrual irregularities (n=1).

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**Figure 1** Flowchart of the sample selection for the female Dhat syndrome study. PHQ-15, Patient Health Questionnaire 15.
The sociodemographic profiles of the patients are shown in table 1. The mean age of the onset of vaginal discharge was 23.0 (6.6), ranging from 10 to 20 years for 44.3% and from 21 to 30 years for 41.4% of the participants. Table 2 illustrates the phenomenology of FDS in the included subjects.

Patients with FDS tended to seek multiple clinical consultations. Most of the study’s participants had sought other consultations before coming to our institution: 14.3% had one, 37.1% had two, 32.9% had three and 7.1% had four; one other participant had seen five clinicians.

Table 1  Sociodemographic profile of patients with female Dhat syndrome

| Variables                  | Subjects (n) | %   |
|----------------------------|--------------|-----|
| Age (years)                |              |     |
| 18–25                      | 25           | 35.7|
| 26–35                      | 32           | 45.7|
| 36–45                      | 13           | 18.6|
| Mean age                   | 29.3 (7.5)   |     |
| Educational status         |              |     |
| Illiterate                 | 8            | 11.4|
| Primary school             | 5            | 7.1 |
| Middle school              | 7            | 10.0|
| High school                | 9            | 12.9|
| Intermediate (class 12)    | 16           | 22.9|
| Graduate (BA/BSc, etc)     | 25           | 35.7|
| Marital status             |              |     |
| Married                    | 48           | 68.6|
| Unmarried                  | 19           | 27.1|
| Widowed                    | 3            | 4.3 |
| Domicile                   |              |     |
| Rural                      | 47           | 67.1|
| Urban                      | 23           | 32.9|
| Religion                   |              |     |
| Hindu                      | 62           | 88.6|
| Muslim                     | 8            | 11.4|
| Type of family             |              |     |
| Nuclear                    | 38           | 54.3|
| Joint                      | 32           | 45.7|
| Employment status          |              |     |
| Employed                   | 9            | 12.9|
| Unemployed*                | 61           | 87.1|
| Family income in rupees (per month) |     |     |
| ≤10000                     | 23           | 32.9|
| 10001–20000                | 22           | 31.4|
| 20001–30000                | 12           | 17.1|
| 30001–40000                | 7            | 10.0|
| >40000                     | 6            | 8.6 |

*Unemployed also includes both students and housemakers. BA, Bachelor of Arts; BSc, Bachelor of Science.

Table 2  The phenomenology of female Dhat syndrome

| Variables                                | Patients (n) | %   |
|------------------------------------------|--------------|-----|
| Duration of vaginal discharge (years)    |              |     |
| ≤5                                       | 43           | 61.4|
| >5 to ≤10                                | 14           | 20.0|
| >10 to ≤15                               | 8            | 11.4|
| >15                                      | 5            | 7.1 |
| Frequency of vaginal discharge           |              |     |
| Once a month                             | 5            | 7.1 |
| Once every 2–3 weeks                     | 6            | 8.6 |
| 2–3 times per week                       | 11           | 15.7|
| Once or more per day                     | 48           | 68.6|
| Quantity of vaginal discharge passed each time |          |     |
| Light wetness in the vagina              | 8            | 11.4|
| Wet feeling outside the vagina           | 13           | 18.6|
| Wetting of undergarments due to wetness  | 36           | 51.4|
| Consistency of vaginal discharge         |              |     |
| Thin-like water                          | 25           | 35.7|
| Milk-like                                | 17           | 24.3|
| Thick-like oil                           | 10           | 14.3|
| Others                                   | 18           | 25.7|
| Colour of vaginal discharge              |              |     |
| Like water                               | 19           | 27.1|
| Like milk                                | 46           | 65.7|
| Like pus                                 | 3            | 4.3 |
| Others                                   | 2            | 2.9 |
| Beliefs about vaginal discharge          |              |     |
| Discharge from uterus                    | 6            | 8.6 |
| Vital fluid for body                     | 15           | 21.4|
| Fat-like secretions                      | 4            | 5.7 |
| Pus                                      | 3            | 4.3 |
| Urine                                    | 2            | 2.9 |
| Do not know                              | 37           | 52.9|
| Others                                   | 3            | 4.3 |
| Beliefs about major components of discharge |          |     |
| Blood                                    | 5            | 7.1 |
| Discharge from uterus                    | 5            | 7.1 |
| Vital fluid for the body                 | 5            | 7.1 |
| Do not know                              | 21           | 30.0|
| Other*                                   | 34           | 48.6|
| Situations when vaginal discharge is experienced | | |
| While straining for stools               | 14           | 20.0|
| During sex-related dreams                | 4            | 5.7 |
| While masturbating                      | 0            | 0   |
| While having intercourse                 | 1            | 1.4 |
| Any time, with no associated specific situations | 59     | 84.3|
| While passing urine                      | 14           | 20.0|
| While sexually aroused                   | 3            | 4.3 |

Continued
### Table 2 Continued

| Variables                                      | Patients (n) | %   |
|------------------------------------------------|--------------|-----|
| While feeling pressure/strain in the abdomen  | 3            | 4.3 |
| While watching pornography                     | 1            | 1.4 |
| During menstruation                            | 8            | 11.4|
| Just before and after menstruation             | 41           | 58.6|
| After not having sex for a long period         | 1            | 1.4 |
| Any other time                                 | 0            | 0   |
| Reasons for the passage of vaginal discharge   |              |     |
| Excessive masturbation                        | 0            | 0   |
| Excessive sexual intercourse                   | 4            | 5.7 |
| Infrequent sexual intercourse                  | 0            | 0   |
| Dissatisfaction during sexual intercourse       | 0            | 0   |
| Having sexual intercourse while menstruating   | 3            | 4.3 |
| Premarital sexual intercourse                  | 0            | 0   |
| Having sexual intercourse outside of wedlock   | 1            | 1.4 |
| Having a homosexual relationship               | 0            | 0   |
| Having sexual intercourse in unnatural ways    | 0            | 0   |
| Having sexual dreams                           | 1            | 1.4 |
| Due to low sexual desire                       | 1            | 1.4 |
| Due to excessive sexual desire                 | 0            | 0   |
| Due to a lack of indulgence in masturbation    | 0            | 0   |
| Due to eating imbalanced food                  | 13           | 18.6|
| Due to excessive eating                        | 1            | 1.4 |
| Due to wrong deeds of past life                | 1            | 1.4 |
| Due to lack of sleep                           | 3            | 4.3 |
| Due to constipation                            | 9            | 12.9|
| Due to worm infestation                        | 3            | 4.3 |
| Due to urinary infection                       | 29           | 41.4|
| Due to vaginal infection                       | 13           | 18.6|
| Due to uterine infection                       | 0            | 0   |
| Due to the use of birth control pills          | 0            | 0   |
| Due to hereditary reasons                     | 2            | 2.9 |
| Due to mistakes made in childhood              | 3            | 4.3 |
| Due to consumption of high-energy foods        | 12           | 17.1|
| Due to consumption of warm foods and drinks    | 24           | 34.3|
| Others                                         | 15           | 21.4|
| Consequences of the vaginal discharge          |              |     |
| Weakness in sexual ability                     | 22           | 31.4|
| Loss of sexual desire                          | 24           | 34.3|
| Excessive sexual desire                        | 3            | 4.3 |
| Early death                                    | 12           | 17.1|
| Malformation of children                       | 8            | 11.4|
| Birth of more female children                  | 5            | 7.1 |
| Loss of facial and body beauty                 | 47           | 67.1|
| Reduction in size of vagina/uterus             | 6            | 8.6 |
| Pain in genitals                               | 18           | 25.7|
| Pain in genitals during sex                    | 9            | 12.9|

**Table 2 Continued**

| Variables                                      | Patients (n) | %   |
|------------------------------------------------|--------------|-----|
| Repeated vaginal infection                     | 18           | 25.7|
| Irritability before and after menstruation     | 47           | 67.1|
| Menstrual disturbances                         | 15           | 21.4|
| Mental illness                                 | 33           | 47.1|
| Weakness in body, low stamina, thin physique   | 67           | 95.7|
| Others                                         | 5            | 7.1 |
| Psychological symptoms perceived               |              |     |
| Bodily weakness                                | 69           | 98.6|
| Mental weakness                                | 65           | 92.9|
| Stomach-ache                                   | 56           | 80.0|
| Back pain                                      | 64           | 91.4|
| Pain in arms, legs or joints (knee, hips, etc)| 56           | 80.0|
| Pain or problems during sexual intercourse      | 23           | 32.9|
| Headaches                                      | 35           | 50.0|
| Chest pain                                     | 25           | 35.7|
| Dizziness                                      | 42           | 60.0|
| Fainting spells                                | 10           | 14.3|
| Feeling heart pounding or racing               | 22           | 31.4|
| Shortness of breath                            | 18           | 25.7|
| Constipation, loose bowels or diarrhoea        | 40           | 57.1|
| Nausea, gas or indigestion                     | 47           | 67.1|
| Little interest or pleasure in doing things    | 57           | 81.4|
| Feeling down, depressed or hopeless            | 54           | 77.1|
| Trouble sleeping                               | 38           | 54.3|
| Feeling tired                                  | 58           | 82.9|
| Poor appetite, overeating                      | 39           | 55.7|
| Feeling bad about yourself, that you are a    | 6            | 8.6 |
| failure or have let yourself or your family    |              |     |
| down                                           |              |     |
| Trouble concentrating on things like reading   | 24           | 34.3|
| the newspaper or watching television           |              |     |
| Moving or speaking so slowly that other        | 14           | 20.0|
| people could have noticed, or the opposite:    |              |     |
| being so fidgety or restless that you have     |              |     |
| been moving around a lot more than usual       |              |     |
| Thoughts that you would be better off dead,    | 9            | 12.9|
| or of hurting yourself in some way             |              |     |
| Burning micturition                            | 27           | 38.6|
| Excessive straining while micturition           | 14           | 20.0|
| Itching on/about genitals                      | 39           | 55.7|
| Development of lesions on or around genitals  | 13           | 18.6|
| Difficulty gaining or losing weight            | 29           | 41.4|
| Excessive worry                                | 38           | 54.3|
| Restlessness to the extent that you have       | 20           | 28.6|
| difficulty sitting still                       |              |     |
| Anger, irritability, getting annoyed easily    | 65           | 92.9|
| Felt need for investigation of blood and urine |              |     |
| Very essential                                 | 70           | 100.0|
| Less essential                                 | 0            | 0   |
| Not at all essential                           | 0            | 0   |

Joshi S, et al. General Psychiatry 2022;35:e100863. doi:10.1136/gpsych-2022-100863
before entering our study. Comorbid psychiatric disorders, common in patients with FDS, were found in 27 (38.6%) subjects in our study. Based on HADS scores, abnormal depression and anxiety symptoms suggestive of a case during the week before consultation were found in 18.6% and 10% of subjects, respectively, 22.9% had borderline depression, and 25.7% had borderline levels of anxiety. Patients with FDS also presented numerous somatic symptoms. The Somatic Symptoms Scale results indicated that all patients reported somatic complaints 1 week before the consultation: 4.3%, 28.6%, 32.9% and 34.3% of the patients had minimal, low, medium and high levels of somatic symptoms, respectively. Perceived stress in the past month was measured with the PSS; 24.3%, 68.6% and 7.1% of patients reported mild, moderate and severe stress levels, respectively.

The disability scores of the sample are presented in table 3. The sexual functioning of patients who were sexually active in the past month (n=29) is reported in table 4. The average FSFI score was less than 26.55 in 48.3% (n=14) of patients, indicating a sexual dysfunction; FSFI scores of more than 26.55 were reported in 51.7% (n=15) of patients. Low scores on the FSFI indicate lower levels of sexual functioning, while a total score of less than 26.55 indicates a sexual dysfunction.

The correlation between the duration of vaginal discharge, the severity of perceived stress and somatic symptoms, and the disability summary score was calculated using Spearman’s r correlation. The duration of vaginal discharge had a moderate positive correlation with the severity of perceived stress (r=0.456, p<0.001), the severity of somatic symptoms (r=0.455, p<0.001) and the disability summary score (r=0.536, p<0.001). A negative correlation was found between the anxiety scores (r=−0.387, p=0.042) and the depressive symptom scores (r=−0.469, p=0.011) and sexual functioning (tables 5 and 6).

DISCUSSION

Main findings

The mean age of our patients was 29.3 (7.5), similar to age group profiles reported in earlier studies.\(^6\,16\) Approximately 68.6% of the patients were married housewives (table 1); this high rate may be due to sociocultural customs in India in which women marry early and assume the role of home maker.\(^6\) Other sociodemographics of the subjects were as follows: 88.6% were Hindus, reflective of the general population of the area in which the study was conducted (table 1); 67.1% were from a rural background;

- **Table 2** Continued

| Variables | Patients (n) | % |
|-----------|-------------|---|
| Investigation of blood and urine carried out | | |
| Yes | 70 | 100.0 |
| No | 0 | 0 |
| Source of treatment sought/health-seeking behaviour | | |
| Doctor (qualifications not known) | 45 | 64.3 |
| Unani/Ayurvedic/homeopathic resources | 54 | 77.1 |
| Female sex specialist | 2 | 2.9 |
| Doctor with MBBS | 26 | 37.1 |
| Gynaecologist | 33 | 47.1 |
| Surgeon/skin specialist/psychiatrist/others | 0 | 0 |

Beliefs about types of treatments that would help | |
| Change in food | 6 | 8.6 |
| Use of energising medications like vitamins, tonics and tablets | 16 | 22.9 |
| Use of energising injections | 16 | 22.9 |
| Use of medications that increase sexual desire | 0 | 0 |
| Use of medications to reduce infections | 18 | 25.7 |
| Use of medications for the treatment of mental problems | 3 | 4.3 |
| Treatment by a gynaecologist | 51 | 72.9 |
| Consultation and discussion with a doctor | 21 | 30.0 |
| No successful treatment exists | 3 | 4.3 |
| Use of medications to reduce sexual desire | 3 | 4.3 |
| Talking to doctors, that is, counselling | 2 | 2.9 |
| Other | 1 | 1.4 |

*Houswife.
†Employed or student.
SD, standard deviation; WHO-DAS, World Health Organization Disability Assessment Scale.

- **Table 3** Disability scores of the WHO-DAS 2.0 for females with female Dhat syndrome (N=70)

| WHO-DAS domains | Mean | SD |
|-----------------|------|----|
| Understanding and communicating | 13.74 | 17.43 |
| Getting around | 17.03 | 23.29 |
| Self-care | 4.02 | 13.03 |
| Getting along with people | 3.93 | 8.80 |
| Life activities (n=55)* | 3.86 | 6.91 |
| Life activities (n=15)* | 2.08 | 4.53 |
| Participation in society | 25.18 | 22.86 |
| Summary score | 11.37 | 12.06 |

*Housewife.
†Emploved or student.
SD, standard deviation; WHO-DAS, World Health Organization Disability Assessment Scale.

- **Table 4** The sexual functioning FSFI scores of females with FDS who had sexual intercourse in the past month (n=29)

| Domains of FSFI | Mean | SD |
|-----------------|------|----|
| Desire | 2.40 | 1.20 |
| Arousal | 3.19 | 1.13 |
| Lubrication | 4.46 | 1.86 |
| Orgasm | 3.74 | 1.19 |
| Satisfaction | 4.00 | 1.53 |
| Pain | 2.94 | 1.64 |

FDS, female Dhat syndrome; FSFI, Female Sexual Function Index; SD, standard deviation.
such as in male Dhat syndrome, where precum is often misinterpreted as semen.

The phenomenology of FDS
The mean duration of vaginal discharge was 6.25 (6.44) years. About 61.4% of the patients experienced vaginal discharge for less than 5 years (table 2). Similar findings are seen in male patients with Dhat syndrome, with a mean duration of symptoms of 4.26 years. Most female patients complained of passing vaginal discharge once or more daily and reported the discharge’s viscosity to be watery, wetting their undergarments due to the amount of fluid secreted.

Most patients had misconceptions about the causation of FDS and the production of vaginal secretions. About 21.4% of the patients believed dhat is vital for the body’s well-being, and 48.6% believed the secretion originates in the body’s bones. Thirty percent of the patients were unclear about the discharge components. These findings are consistent with the results of the other studies in which all patients believed dhat to be the body’s essential fluid. Studies also indicate similar beliefs exist in men, where patients with male Dhat syndrome perceived semen loss as harmful to health. In a study by Bhatia and Malik, the majority of male patients thought dhat was the same as semen.

Most patients did not associate the flow of vaginal discharge with any specific condition, though 58.6% reported the discharge occurred just before and after menstruation (table 2). As discussed earlier, the amount of normal vaginal discharge varies during the menstrual and ovulatory cycles. This fluctuation of secretions was a common scenario reported in our study, indicating that women often worry about normal variations in vaginal discharge.

Patients reported biological factors as the most commonly perceived cause of vaginal discharge (table 2). Urinary tract infection (n=29, 41.4%) was deemed the leading cause as it is also the most common reason for pathologcial vaginal discharge. FDS, by definition, is non-infectious. However, the medical system does not generally acknowledge the possibility of FDS, and many gynaecologists remain uninformed about this anomaly. Therefore, despite contrary evidence, most medical clinicians continue to label it as an infection; unfortunately, the same belief persists among patients.

Some patients (n=15) could not give reasons for the passage of vaginal discharge (table 2). Still, among the study participants, consumption of warm drinks and food (n=24, 34.3%) was the second leading perceived cause of the vaginal discharge. In India, food intake and the heat retained by the body are given aetiological significance. The concept of hot-cold food is indigenous to the Indian subcontinent. Treatment is also directed in the form of heating and cooling therapies, and abstinence from specific food items is incorporated in prevention therapies. Similar beliefs are also found in patients with male Dhat syndrome, where diet is considered a significant reason for semen loss. Several studies have also reported these findings in the context of male Dhat syndrome. Similarly, females misattribute multiple factors for causing vaginal discharge. Therefore,
identifying these false assumptions is essential to addressing dysfunctional beliefs for a better treatment outcome.20

Weakness in the body, decreased stamina, a thin physique, irritability before and after menstruation, loss of facial and body beauty, mental illness, loss of sexual desire and impaired sexual performance were the commonly perceived consequences of vaginal discharge (table 2). Patients also reported various depressive, anxious and somatic complaints (table 2). Other researchers also found that patients complaining of vaginal discharge presented various physical and mental symptoms.6 8 25 26 Of note, the symptoms perceived by these women can be explained by Ayurvedic concepts. According to this ancient tradition of medical practice, vaginal fluids are believed to provide strength, power and sexual vigour; therefore, their loss drains a woman’s strength, leading to weakness. A belief deeply rooted in South Asian men is ‘40 drops of food are required to form one drop of blood, in turn, 40 drops of blood are needed to form 1 drop of flesh, and 40 drops of flesh are needed to form 1 drop of marrow, and finally, 40 drops of marrow are required to form one drop of semen’.1 According to the dietary theory of Ayurveda, semen is formed as the seventh stage product after a high degree of successive refinement/assimilation of food, passing through six stages: viz chyle, blood, flesh, fat, bone and marrow. Semen in Ayurvedic literature is equated to vaginal discharge. This gives rise to a belief system that vaginal discharge is formed from the dissolution of bones. Bone formation is a precursor to the production of vaginal fluids; thus, ‘melting’ bones lead to excessive discharge. For example, backache is believed to be caused by the melting of the backbone.23

According to this theory, an eighth stage end product is a substance called ‘radiance’. This conceptualisation could be why many women in India believe the loss of vaginal discharge leads to a loss of radiance. Since dhat is formed from blood, any loss of blood production could cause a pale facial discolouration.24 Some patients also described genital ulcers or itching as a consequence of vaginal discharge. The Ayurvedic system of medicine explains that excess body heat bursts out in the form of these ulcers.23 On the other hand, a normal physiological vaginal discharge, if it remains in contact with the skin, can result in itching and lesions around the genitalia.

The other common symptoms reported were loss of sexual desire and weakened sexual performance. Vaginal discharge is equated to semen; thus, the loss of vaginal discharge leads to a decrease in ‘female sperm’ and may contribute to infertility. Male patients with Dhat syndrome also tend to relate the loss of dhat with impaired sexual functioning. Medical quacks and traditional healers further strengthen the belief through advertisements of various products or treatments.24 27

Regarding the related clinical investigations, all the women reported that examining the blood and urine was essential (table 2). The consistent study results reflect that the desire for investigation persists despite earlier negative clinical reports. This drive to find a medical reason for the illness is related to patients’ perception that an infection could be the cause. It is similar to other psychiatric disorders, such as somatic symptom disorder and anxiety disorder, where patients persistently request repeated investigations despite negative findings and physician reassurance.2

The health-seeking behaviours of the patients were also assessed using the SAFeD Questionnaire.6 Our findings suggest that most patients had consulted different practitioners outside the allopathic system of medicine, perhaps due to the scarcity of qualified healthcare professionals in rural areas (table 2). Most of our study’s patients (72.9%) believed that the disease could be alleviated after treatment by a gynaecologist (table 2). Approximately only 22.9% of the patients considered that energising medication supplements, such as vitamins, tonics and injectables, were required to treat the symptoms (table 2). However, these findings are in contrast to the study by Grover et al,6 where the majority of females believed that energising medications could be beneficial in providing relief from the symptoms.6 The studies of male Dhat syndrome also reflect the role of multivitamins and tonics in improving the the disorder.20 22 This difference in the findings may be because Grover’s study was conducted in the psychiatry department. The majority of the women included in his study had either been referred from the gynaecology department or had already taken treatment from a gynaecologist with no proven benefit, whereas our study was conducted in a gynaecology OPD with patients still maintaining hope that gynaecological treatment might prove beneficial.

Dhat syndrome is commonly associated with comorbidities. However, very few studies have evaluated comorbidities in females presenting with non-pathological vaginal discharge.28 In our research, psychiatric comorbidity was found to be 38.6%. The most common psychiatric disorder diagnosed in our patients was major depressive disorder, followed by anxiety spectrum disorders. Comorbidities are also commonly associated with the male Dhat syndrome.1 22

The HADS9 was administered to all patients to assess depressive and anxiety symptoms. In our sample, 18.6% (n=13) had scored more than 11 on the depression scale of HADS, indicating a definitive case of depressive disorder, and seven patients (10%) had scored more than 11 on the anxiety scale of HADS, indicating a definitive case of anxiety disorder. This is understandable as the loss of vaginal discharge, like the loss of any precious or valued possession, can produce a state of clinical depression in vulnerable individuals.

Somatic symptom disorder, as per the DSM-5, was diagnosed in 7.1% of the subjects. The Somatic Symptom Scale was used to rate the severity of somatic symptoms, and results showed a majority of the women had experienced somatic symptoms in the past week. In our sample, perceived stress in the past month was rated with the PSS10, findings indicated the majority (n=48, 68.6%) had perceived a moderate amount of stress. Stress and mental tension have been reported as both causative factors and consequences of vaginal discharge in many studies.16 20 29 30 The concept of stress in causing vaginal discharge is also evident. Women often report an increase in the amount and frequency of
vaginal discharge during stressful situations. In some other studies, mental tension was attributed as a cause of abnormal vaginal discharge.

Disability in the patients was evaluated using the WHO-DAS 2.0. The total disability summary score was in the lower range, suggesting that FDS causes less disability (table 3). The disability score, measured by the WHO-DAS 2.0, was more than 25% in the domain of ‘participation in society’. The distress caused by vaginal discharge may limit the females’ mobility during festive and other religious activities and leave them feeling uncomfortable about participating in these events. Attempting to rid themselves of their illnesses, distressed patients may visit various healthcare professionals, incurring a significant loss of time and money.

No prior study has evaluated disability in patients with FDS, professionals, incurring a significant loss of time and money.

Illnesses, distressed patients may visit various healthcare professionals, incurring a significant loss of time and money. No prior study has evaluated disability in patients with FDS, so a comparison with other findings is not possible.

Measured by the FSFI scale, sexual functioning was assessed in women who had had sexual intercourse in the past month; results found that 48.3% could be diagnosed with a sexual dysfunction disorder. The most commonly affected domains were desire and arousal. Sexual complaints like premature ejaculation, erectile dysfunction and decreased libido are also seen in patients with male Dhat syndrome. A possible explanation is that non-pathological vaginal discharge causes physical discomfort to the women, and therefore, women may not feel comfortable participating in sexual activities. Moreover, depression and anxiety symptoms are commonly associated with the syndrome. For example, anxiety symptoms are associated with reduced attention span and concentration with decreased attention to sexual stimuli; impaired cognitive processing of sexual stimuli can then lead to decreased arousal.

A moderate positive correlation was found between the duration of discharge, perceived stress, severity of somatic symptoms and total disability. A moderate positive correlation was also found between perceived stress, somatic symptoms and disability caused by the illness. We found a moderate negative correlation between the depressive symptoms score (r=−0.469, p=0.011) and a weak negative correlation between the anxiety symptoms score (r=−0.387, p=0.042) and the total sexual functioning score (tables 5 and 6).

Limitations of the study

The study was based in a tertiary care centre hospital which may limit the generalisability of the findings for females with this disorder within the community. It was a time-bound study, and due to the COVID-19 pandemic, the estimated sample size could not be attained. The small sample size further limits the generalisability of the findings to the community patients. Because the recruitment was conducted in a busy obstetrics and gynaecology OPD, the data for all patients presenting with vaginal discharge could not be collected. Furthermore, the data were not normally distributed across most variables due to the selection of which non-parametric or distribution-free statistics were computed. Some researchers consider non-parametric statistics as having lower power compared with parametric statistics. Finally, we did not have a control group. Therefore, interpretations of our findings are limited by the lack of comparison with the general population.

Implications

The current study illustrated that the clinical presentation of women with non-pathological vaginal discharge is similar to that of male Dhat syndrome. Pervasive misconception and misinformation give rise to numerous physical and psychological symptoms associated with Dhat syndrome. The most common psychiatric comorbidities linked with FDS are major depressive disorder followed by anxiety disorder. Patients with vaginal discharge complaints require clinical assessment of biological, social, psychological and cultural factors. The management plan for these patients should include treatment of physical and social causes and the correction of cultural misbeliefs associated with vaginal discharge. Finally, women with non-pathological vaginal discharge seeking consultation in gynaecology OPDs should also be evaluated for possible psychological issues.

Contributors Conceptualisation: AT, SA, NS, BG, AN and SKK. Literature search: SJ, AT, SKK. Writing the manuscript: SJ, AT, SKK. Guarantor: SJ.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by the Institutional Ethics Committee of King George’s Medical University, Lucknow (letter number: 1067/Ethics/R). Cell-19 with reference code 97th ECM-8-B Thesis/P130. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

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ORCID iD Sujita Kumar Kar http://orcid.org/0000-0003-1107-3021

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Shubha Joshi is presently working as a 1st year MD (Doctorate of Medicine) senior resident in the Department of Geriatric Mental Health at King George’s Medical University, Lucknow, India, starting that position in 2022. She completed her MBBS in 2015 from Veer Chandra Singh Garhwal Government Medical Science and Research Institute, Srinagar Garhwal, Uttarakhand and her post-graduate work in psychiatry in 2021 from King George Medical University, Lucknow, India. Her work experience includes psychosexual disorders, neuropsychiatry, addiction psychiatry, consultation-liaison psychiatry, emergency psychiatry and child psychiatry, and adult psychiatric care services, with special interests in neuropsychiatry and psychosexual medicine. Her focus is a combination of teaching, research and clinical care. Dr Shubha has attended several national and zonal conferences where she presented her research work.