Do female patients with nonpathological vaginal discharge need the same evaluation as for Dhat syndrome in males?

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ABSTRACT

Aim: The aim of this study was to evaluate the concept of female Dhat syndrome characterized by the complaint of nonpathological vaginal discharge in association with somatic, anxiety, and depressive symptoms.

Materials and Methods: A total of 26 female subjects with nonpathological vaginal discharge along with depressive and somatic complaints were assessed on a self-rated questionnaire modified from Comprehensive Questionnaire for Assessment of Dhat Syndrome designed for males. They were also assessed for psychiatric comorbidity as per ICD-10.

Results: All female subjects received an ICD-10 psychiatric diagnosis, with somatoform/dissociative disorder (57.7%) being the most common. The mean age of onset of vaginal discharge was 24.6 (standard deviation - 7.0) years, noted every day or for 2–3 times per week by more than two-third of the participants. Two-fifth (61.5%) of the women described it as a milky discharge. The most common reason reported for passage of vaginal discharge was that of urinary infection or problems of urinary tract infections (42.3%) followed by vaginal infection/disease (34.6%). More than half (53.8%) of the subjects considered vaginal discharge to be responsible for weakness in the body, weakness in stamina and thinness of physique, while slightly more than two-third (69.2%) of them reported bodily weakness and sleep disturbances. Overall the clinical picture in females was similar to male patients with Dhat syndrome on most of the account.

Conclusions: Subgroup of patients with vaginal discharge attribute their somatic and mental symptoms to the passage of whitish vaginal discharge and are distressed due to the same. The clinical picture is similar to Dhat syndrome in males. There is a need to recognize female variant of Dhat syndrome as a culture-bound syndrome. Identification of the same may help in managing this subgroup of patients seeking help from the gynecologists for their nonpathological vaginal discharge or from mental health professionals for their symptoms of common mental disorders.

Key words: Female Dhat syndrome, nonpathological, vaginal discharge

INTRODUCTION

Abnormal vaginal discharge is very common in women from developing countries and available evidence suggests that about one-fourth of women report this complaint. From a biomedical perspective, presence of vaginal discharge is considered as an indicator/symptom of reproductive tract infections and it is considered to be highly prevalent in the subcontinent. However, some of the recent studies suggest that the prevalence of reproductive tract infections is relatively low in women presenting with vaginal discharge.

According to Ayurvedic concepts of health and illness, genital secretions are considered as a highly purified form of dhatu.
or bodily substance, and loss of this precious substance is thought to result in progressive weakness or even death. Based on this concept, male patients who present with whitish discharge per urethra, believe the same to be loss of semen, have associated somatic, anxiety and depressive symptoms, have significant distress and preoccupation with the same and are diagnosed to have “Dhat syndrome.” This diagnosis is considered to be a culture-bound syndrome and has received a nosological status in ICD-10.

Many South Asian women who complain of vaginal discharge also report a variety of somatic symptoms such as dizziness, backache, and weakness.

In an ethnographic study, Trollope-Kumar noted the concerns of women about the loss of genital secretions who usually presented with complaints of safed panni (white water), dhatu, or swed pradhar. Loss of genital secretions was associated with vague somatic manifestations in the form of burning hands and feet, dizziness, backache, and progressive weakness in the body. These women attributed these symptoms to loss of vital fluid from the body. On evaluation, these women had little evidence of infection and the quantity of discharge did not seem to be more than the normal physiological discharge. The authors further documented that not only the women but few local health care professionals (e.g., dai) were also worried about safed panni because of the belief that “100 drops of blood was required to make a drop of safed panni,” a belief which is very similar to that seen in male patients with Dhat syndrome. In addition, these women attributed the whitish vaginal discharge to multitude of factors such as tubectomy and faulty diet. Few other ethnographic studies from India also provide evidence supporting the observation of Trollope-Kumar. Authors who have evaluated women with common mental disorders have also considered leukorrhea as a somatic idiom of expression of depression in South Asia. In some of these studies, patients attributed their symptom of vaginal discharge to stress and emotional factors, excess heat in the body, infection, consumption of hot and spicy foods, and effect of hot weather. Almost similar reasons were advanced by some of the male patients with Dhat syndrome.

Occasional studies from other South Asian countries such as Sri Lanka and Pakistan have also noted problems related to loss of dhatu in subjects of either gender. Recently, two cases akin to female Dhat syndrome were reported, and the authors attempted to present the operational criteria which could be used to identify these patients.

In this background of limited literature, the present study aimed to evaluate the concept of female Dhat syndrome in women attending psychiatry outpatient services with complaints of somatic anxiety and depressive symptoms and who also had complaint of nonpathological vaginal discharge. Clinical profile of these patients was compared with that of male patients diagnosed with Dhat syndrome.

**MATERIALS AND METHODS**

**Setting**

This study was carried out in the psychiatry outpatient clinic of a multi-specialty teaching tertiary care hospital in North India. Written informed consent was obtained from the patients prior to recruitment and ethical clearance for the study was obtained from the Institute Ethics Committee.

As per the inclusion criteria for this study, any female aged 18–45 years presenting to psychiatry outpatient services with depressive and somatic complaints was eligible for the study. Patients with comorbid mental retardation, psychotic disorders, or organic brain syndromes were excluded.

Initially, all the female patients diagnosed with depressive disorders or anxiety and neurotic and stress-related disorders as per the ICD-10 criteria were screened for the presence of vaginal discharge for at least 1-month duration. Those who reported the presence of vaginal discharge were evaluated for any infective causes for the same. Only those patients whose gynecological treatment records and investigation reports for common bacterial, parasitic, and fungal infection ruled out any infective cause for the complaint of vaginal discharge were considered further for this study. Those found to have vaginal discharge without evidence of any established infective etiopathogenesis (nonpathological vaginal discharge) were further evaluated for their beliefs about vaginal discharge. Those patients who expressed “loss of precious body fluid” in the form of vaginal discharge and/or considered vaginal discharge to be a contributory factor to their somatic, anxiety, and depressive symptoms were taken up for the study. These patients were also required to have preoccupation/worry about the vaginal discharge and some level of distress associated with the symptom. These patients were evaluated on a Self-rated Questionnaire which was available in Hindi language. This self-rated Questionnaire is a modified version of Comprehensive Questionnaire for Assessment of Dhat Syndrome designed for assessment of male patients with Dhat syndrome. Comprehensive Questionnaire for Assessment of Dhat Syndrome assesses the various aspects of Dhat syndrome. The aspects covered by the questionnaire include frequency, consistency, color, and quantity of discharge; situations in which patient has the discharge, patients beliefs about the composition of discharge, reasons for passage of discharge; consequences of excessive discharge; accompanying somatic, anxiety, and depressive symptoms; comorbid sexual dysfunction and beliefs about help seeking and treatment. The items of Comprehensive Questionnaire for Assessment of Dhat Syndrome were modified suitably to suit the female patients, and additional items were included based on the information available in the literature and interviews with...
the patients who presented to us with a clinical picture suggestive of female Dhat syndrome. Two of these cases were reported earlier too.\[39\] The modified female version of the DSQ was named as Scale for Assessment of Female Dhat syndrome (SAFED).

Based on the severity and level of distress due to vaginal discharge, the treating psychiatrist rated the severity of vaginal discharge on a 3 point scale as mild, moderate, and severe. For comparison, we used the published data of male patients evaluated on Comprehensive Questionnaire for Assessment of Dhat Syndrome.\[21\]

**Statistical analysis**
 Frequencies with percentages were calculated for the categorical variables. Mean and standard deviation (SD) for computed for the continuous variables. Comparisons were done using Pearson’s Chi-square test and independent sample t-test.

**RESULTS**

This study included 26 female patients (study group) and data of 54 males (comparator group).

**Sociodemographic profile**
The sociodemographic of both the groups is shown in Table 1. When compared with male patients, no significant differences were noted on the sociodemographic variables, except for the higher proportion of female patients being not on a paid employment and being married.

**Psychiatric morbidity and distress associated with vaginal discharge**
The treating psychiatrists could arrive at an ICD-10 diagnosis in all the female patients with vaginal discharge. Somatoform/dissociative disorders (57.7%) were the most common psychiatric diagnosis. Majority of the patients (73.7%) had a moderate level of distress due to vaginal discharge. On comparing the psychiatric morbidity profile of females patients with those of males, significantly higher proportion of female patients were diagnosed with a psychiatric disorder, with somatoform/dissociative disorders being more prevalent in females.

**Characteristics of vaginal discharge**
As shown in Table 2, the mean age of onset of vaginal discharge was 24.6 (SD - 7.0) years and patients were experiencing vaginal discharge on average for 5.64 years. The discharge was noted every day or for 2–3 times per week by more than two-third of the participants. In terms of color of the discharge most (61.5%) of the women described it as a milky discharge. All the female patients reported that vaginal discharge was made up of vital fluid of the body or blood though majority of the female patients were not sure about the major component of the vaginal fluid.

### Table 1: Sociodemographic characteristics and psychiatric morbidity

| Variables                      | Study group | Comparison group | t-test/Chi-square test |
|-------------------------------|-------------|------------------|------------------------|
|                               | females     | males            |                        |
|                               | Mean (SD)/ frequency (%) | Mean (SD)/ frequency (%) |                         |
| Age in years                  | 30.04 (7.43) | 28.39 (8.21) | 0.867                  |
| Marital status*               |             |                  |                        |
| Single                        | 6 (23.1)    | 37 (68.5)       | 18.677***              |
| Married                       | 20 (58.8)   | 14 (25.9)       |                        |
| Separated/divorced/widowed    | 0 (0)       | 3 (3.6)         |                        |
| Education in years            | 10.05 (5.10)| 11.96 (3.09)    | −1.968                 |
| Education                     |             |                  |                        |
| Matriculate and below         | 14 (53.8)   | 22 (40.7)       | 1.218                  |
| Above matriculation           | 12 (46.2)   | 32 (59.3)       |                        |
| Occupation                    |             |                  |                        |
| Unemployed/housewife          | 23 (88.5)   | 18 (33.3)       | 19.198****             |
| Employed                      | 3 (7.7)     | 6 (6.7)         |                        |
| Family income (Indian Rupee)  |             |                  |                        |
| <7500                         | 11 (42.3)   | 28 (51.9)       | 0.640                  |
| >10,000                       | 15 (57.7)   | 26 (48.1)       |                        |
| Kuppuswamy socioeconomic class|             |                  |                        |
| Lower                         | 4 (15.4)    | 14 (25.9)       | 0.596\[a\]             |
| Middle/upper                  | 22 (84.6)   | 40 (74.1)       |                        |
| Family type                   |             |                  |                        |
| Nuclear                       | 12 (46.2)   | 30 (55.6)       | 0.622                  |
| Expanded/joint                | 14 (53.8)   | 24 (44.4)       |                        |
| Locality                      |             |                  |                        |
| Urban                         | 12 (46.2)   | 30 (55.6)       | 0.622                  |
| Rural                         | 14 (53.8)   | 24 (44.4)       |                        |
| Distress due to white discharge|             |                  |                        |
| Mild                          | 2 (10.5)    |                  |                        |
| Moderate                      | 14 (73.7)   |                  |                        |
| Severe                        | 3 (15.8)    |                  |                        |
| Psychiatric diagnosis         | 26 (100)    | 28 (51.8)       | 16.416****             |
| Depressive disorder           | 5 (19.2)    | 22 (40.7)       | 3.632                  |
| Anxiety disorders             | 6 (23.1)    | 4 (7.4)         | 2.637\[a\]             |
| Somatoform/dissociative disorder | 15 (57.7)  | 2 (3.7)         | 19.064***              |

**Situation in which there is passage of vaginal discharge**
About three-fourth of the females reported the existence of vaginal discharge irrespective of any specified situation. Nearly one-third reported it to be present while straining for stools, passing urine, sexual excitement, watching/reading pornography, and just before or after menstruation. When we compared this profile with male patients with Dhat syndrome in males. As shown in Table 3, more male patients linked passage of Dhat with sexual dreams/night falls and during sexual excitement.
Reasons for passage of vaginal discharge
The most common reason reported by the female patients for passage of vaginal discharge was urinary infection or problems of urinary tract infections (42.3%) followed by due to vaginal infection/disease (34.6%). When we compared this profile with male patients of Dhat syndrome, as depicted in Table 3, more of the male patients attributed passage of Dhat to excessive masturbation, excessive sexual intercourse, sexual dreams, lack of indulgence in masturbation and constipation. It is important to note that certain responses from the male patients were not available as these were not part of the assessment in males.

Consequences of vaginal discharge
More than half (53.8%) of the females reported that vaginal discharge was responsible for weakness in body, weakness in stamina, and thinness of physique. Other commonly reported consequences in females were weakness in sexual ability (42.3%), repeated vaginal infection (38.5%), mental illness (38.5%), pain in genitals (36%), loss of beauty of face and body (30.8%), menstrual disturbances (30.8%), and irritability before or after menstruation (30.8%). Other uncommon consequences are depicted in Table 4.

For comparison, all options were not available in males. Nevertheless, significantly higher percentage of males considered passage of Dhat to be responsible for malformed children and development of mental illnesses.

Associated psychological and somatic symptoms
As shown in Table 5, more than three-fourth of the female patients reported the presence of bodily weakness and sleep disturbances. More than half of the females reported symptoms of pain in arms, legs, or joints (69.2%), feeling tired or having low energy (53.8%), and headache (53.8%).

Male patients with Dhat syndrome had a higher prevalence of gastrointestinal symptoms, cognitive symptoms, the sadness of mood and feeling down, depressed mood, or hopeless, psychomotor symptoms and thoughts of self-harming behavior. This clinical profile also possibly explains the higher prevalence of clinical depression in male patients with Dhat syndrome.

Table 2: Characteristics of Dhat syndrome

| Variables                              | Study group females | Comparison group males | Chi-square test |
|----------------------------------------|---------------------|------------------------|-----------------|
|                                        | Mean (SD)/frequency (%) (n=26) | Mean (SD)/frequency (%) (n=54) |                |
| Age of onset of passage of vaginal discharge/Dhat in years | 24.58 (7.03) | 5.4 (5.15) | 0.2 |
| Duration of passage of vaginal discharge/Dhat in years | 5.64 (4.6) | 28 (51.9) | FE=4.92 |
| Frequency of passage of vaginal discharge/Dhat |                         |                         |                |
| Once in every 1 month | 0 (0.0) | 4 (7.4) | FE=7.24 (P<0.05) |
| Once in every 2–3 weeks | 7 (26.9) | 15 (27.8) |               |
| 2–3 times per week | 11 (42.3) | 15 (27.8) |               |
| Once or more per day | 10 (38.5) | 14 (25.9) |               |
| Quantity of vaginal discharge/Dhat passed every time? |                         |                         |                |
| Light wetness in vagina/2–4 drops | 6 (23.1) | 21 (38.9) | 2.45 |
| Wet feeling outside vagina/about a spoon full | 9 (34.6) | 18 (33.3) |               |
| Wetting of undergarments/more than a spoon full | 11 (42.3) | 15 (27.8) |               |
| Need to change undergarments due to wetness | 0 (0.0) | 0 (0.0) |               |
| Consistency of vaginal discharge/Dhat |                         |                         |                |
| Like water | 7 (26.9) | 15 (27.8) | 1.54 |
| Thin | 10 (38.5) | 27 (50.0) |               |
| Thick | 9 (34.6) | 12 (22.2) |               |
| Color of the vaginal discharge/Dhat |                         |                         |                |
| Like water | 7 (26.9) | 20 (37.0) | FE=7.24 (P<0.001) |
| Like milk | 16 (61.5) | 20 (37.0) |               |
| Like pus | 1 (3.8) | 12 (22.2) |               |
| Different than the above | 2 (7.7) | 2 (3.7) |               |
| Belief about what is vaginal discharge/Dhat |                         |                         |                |
| Vital fluid for body/semen | 26 (100) | 38 (70.4) | 7.87#,** |
| Other explanations/don’t know | - | 16 (29.2) |                |
| Belief about the major ingredient of vaginal discharge/Dhat |                         |                         |                |
| Blood/vital fluid of body/semen | 11 (42.3) | 40 (74.1%) | 6.35* |
| Don’t know | 15 (57.7) | 14 (25.9) |                |
| Belief about the major component of vaginal discharge/Dhat |                         |                         |                |
| Blood | 0 (0.0) | 12 (22.2) | FE=21.55**** |
| Vital fluid for body/semen | 3 (11.5) | 23 (43.6) |                |
| Both | 8 (30.8) | 5 (9.3) |               |
| Don’t know | 15 (57.7) | 14 (25.9) |                |

*P<0.5; **P<0.01; ***P<0.001; #Chi-square test with Yate’s correction. FE – Fisher exact; SD – Standard deviation; a-vaginal discharge or Dhat were used as per the gender requirement
Help seeking and treatment-related beliefs

As with males suffering from Dhat syndrome, significantly high proportion of females also believed that there was a need for investigations and all the females had undergone the same (see Table 6). About two-fifth believed that symptoms of vaginal discharge can be relieved by taking energizing medications like vitamins/tonics/tablets and only one-third believed that treatment from a gynecologist could be beneficial. However, one-third also expressed that there was a need for change in food and one-third believed that vaginal discharge can be relieved by taking medications which are used for the treatment of mental problems. Differences between the two genders on these responses were statistically significant. Whereas only one-fourth of the females believed that consultation and discussion with a doctor were useful in the management of vaginal discharge, three-fourth of males with Dhat syndrome believed that the same was useful.

DISCUSSION

After menstrual disorders, vaginal discharge is considered to be the second most common gynecological complaint, for which patients seek consultation.[31] However, when evaluated for etiological causes only about 30–56.6% are found to have evidence of infection.[6–8] Low prevalence of infective causes have led many researchers to evaluate these

| Variables                                                                 | Study group females Frequency (%) (n=26) | Comparison group males Frequency (%) (n=54) | Chi-square test |
|---------------------------------------------------------------------------|------------------------------------------|--------------------------------------------|----------------|
| Situation in which you experience discharge of vaginal discharge/Dhat      |                                          |                                            |                |
| While straining for stools                                                | 9 (34.6)                                 | 22 (40.7)                                 | 0.28           |
| As night falls/sex related dreams                                         | 5 (19.2)                                 | 35 (64.8)                                 | 14.59***       |
| While masturbation                                                        | 4 (15.4)                                 | 17 (31.5)                                 | 1.59'          |
| While having intercourse                                                  | 8 (30.8)                                 | 20 (37)                                   | 0.30           |
| Any time, with no associated specific situation                           | 19 (73.1)                                | 24 (44.4)                                 | 5.79*          |
| While passing urine                                                       | 10 (38.5)                                | 28 (51.9)                                 | 1.26           |
| While having sexual excitement                                            | 10 (38.5)                                | 39 (72.2)                                 | 8.43**         |
| While feeling pressure or strain on the abdomen                           | 6 (23.1)                                 | 8 (14.8)                                  | 0.83           |
| While watching/reading pornography                                        | 9 (34.6)                                 |                                            |                |
| During menstruation                                                       | 5 (19.2)                                 |                                            |                |
| Just before and after menstruation                                        | 10 (38.5)                                |                                            |                |
| After not having sex for long period of time                              | 3 (11.5)                                 |                                            |                |
| Reason for passage of vaginal discharge/Dhat                               |                                          |                                            |                |
| Due to excessive masturbation                                             | 1 (3.8)                                  | 34 (63.0)                                 | 22.58****      |
| Due to excessive sexual intercourse                                       | 3 (11.5)                                 | 18 (33.3)                                 | 4.31*          |
| Due to less sexual intercourse                                            | 6 (23.1)                                 |                                            |                |
| Due to not being satisfied during sexual intercourse                       | 7 (26.9)                                 |                                            |                |
| Due to having sexual intercourse while menstruation                        | 0 (0.0)                                  | 7 (13.0)                                  | 2.25'          |
| Due to premarital sexual intercourse                                      | 1 (3.8)                                  | 13 (24.1)                                 |                |
| Due to having sexual intercourse outside the wedlock                       | 0 (0.0)                                  | 9 (16.7)                                  | 3.67'          |
| Due to homosexual relationship                                             | 0 (0.0)                                  | 7 (13.0)                                  | 3.36'          |
| Due to having sexual intercourse in unnatural way                          | 2 (7.7)                                  | 15 (27.8)                                 |                |
| Due to having sexual dreams                                               | 3 (11.5)                                 | 40 (74.1)                                 | 2.25'          |
| Due to low sexual desire                                                  | 6 (23.1)                                 | 12 (22.2)                                 | 3.12'          |
| Due to excessive sexual desire                                            | 2 (7.7)                                  | 35 (64.8)                                 | 25.15”***      |
| Due to lack of indulgence in masturbation                                 | 3 (11.5)                                 | 22 (40.7)                                 | 0.007          |
| Due to eating unbalanced food/inappropriate food                           | 8 (30.8)                                 | 10 (18.5)                                 | 20.75”***      |
| Due to excessive eating                                                    | 2 (7.7)                                  | 7 (13.0)                                  | 5.67'          |
| Due to wrong deeds of past life                                           | 2 (7.7)                                  | 7 (13.0)                                  | 1.51           |
| Due to lack of sleep/improper sleep                                       | 4 (15.4)                                 | 16 (29.6)                                 | 0.10'          |
| Due to constipation                                                       | 5 (19.2)                                 | 26 (48.1)                                 | 0.10'          |
| Due to worm infestation of gastrointestinal tract                          | 3 (11.5)                                 | 13 (24.1)                                 | 1.22'          |
| Due to urinary infection or problems of urinary tract                      | 11 (42.3)                                | 26 (48.1)                                 | 6.18*          |
| Due to vaginal infection/disease                                          | 9 (34.6)                                 |                                            | 1.03'          |
| Due to uterine infection/disease                                          | 5 (19.2)                                 |                                            | 0.24           |
| Due to use of birth control pills                                         | 3 (11.5)                                 |                                            |                |
| Due to hereditary reasons (because others in family also suffer            | 2 (7.7)                                  |                                            |                |
| from the same problem                                                     |                                          |                                            |                |
| Due to some mistake done in childhood                                     | 6 (23.1)                                 | 9 (16.7)                                  | 0.55’          |
| Due to consumption of high energy foods                                    | 7 (26.9)                                 | 7 (13.0)                                  |                |
| Due to consumption of warm foods and drinks                               | 7 (26.9)                                 |                                            | 1.32           |

*P<0.5; **P<0.01; ***P<0.001; #Chi-square test with Yate’s correction
patients further and authors proposed that leukorrhea may represent a culturally shaped “bodily idiom of distress,” and concerns of loss of genital secretions reflect wider issues of social stress. However, a problem arises when this symptom with deep cultural meaning is interpreted in a purely biomedical framework.\[13\] Hence, it appears that women over-report vaginal discharge because of its deep cultural meanings, meanings that need to be understood within an anthropological rather than biomedical framework.\[13\] Accordingly, some consider leucorrhoea as an expression of loss of vital fluid from the body, equivalent to Dhat syndrome in males and possibly influenced by the cultural

| Variables                                      | Study group females Frequency (%) (n=26) | Comparison group males Frequency (%) (n=54) | Chi-square test |
|------------------------------------------------|----------------------------------------|---------------------------------------------|-----------------|
| Weakness in sexual ability                     | 11 (42.3)                              | -                                           | 44.23***        |
| Loss of sexual desire                          | 13 (50.0)                              | -                                           | 2.58            |
| Excessive sexual desire                        | 6 (24.0)                               | -                                           |                 |
| Early death                                    | 0 (0.0)                                | -                                           |                 |
| Malformation of children                       | 4 (15.4)                               | 50 (92.6)                                  |                 |
| Birth of more female children                  | 1 (3.8)                                | 11 (20.4)                                  |                 |
| Loss of beauty of face and body                | 8 (30.8)                               | 13 (24.1)                                  | 0.41            |
| Reduction in size of vagina/uterus (penis in male) | 2 (7.7)                               | 8 (14.8)                                  | 0.29            |
| Pain in genitals                               | 9 (36.0)                               | -                                           |                 |
| Pain in genitals during sex                    | 8 (30.8)                               | -                                           |                 |
| Repeated vaginal infection                     | 10 (38.5)                              | -                                           |                 |
| Irritability before or after menstruation      | 8 (30.8)                               | -                                           |                 |
| Menstrual disturbances                         | 8 (30.8)                               | -                                           |                 |
| Mental illness                                 | 10 (38.5)                              | 43 (79.6)                                  | 13.30***        |
| Weakness in body, weakness in stamina and thinness of physique | 14 (53.8) | -                                           |                 |

***P<0.001; *Chi-Square test with Yate’s correction.
Table 6: Help seeking and treatment related beliefs

| Variables                                      | Study group females Frequency (%) (n=26) | Comparison group males Frequency (%) (n=54) | Chi-square test |
|------------------------------------------------|----------------------------------------|---------------------------------------------|-----------------|
| Need for investigations of blood and urine     |                                        |                                             |                 |
| Very essential                                | 18 (69.2)                              | 39 (72.2)                                  | 1.888*          |
| Less essential                                | 3 (11.5)                               | 10 (18.5)                                  |                 |
| Not at all essential                          | 5 (6.2)                                | 5 (9.3)                                    |                 |
| Ever undergone any investigations of blood and urine | 26 (100)                              | -                                           |                 |
| Belief about treatment for white discharge    |                                        |                                             |                 |
| Change in food                                | 9 (34.6)                               | 20 (37.0)                                  | 0.045           |
| By taking energizing medications like vitamins/tonics/tablets | 11 (42.3)                              | 31 (57.4)                                  | 1.605           |
| By taking energizing injections               | 1 (3.8)                                | 25 (46.3)                                  | 12.546***       |
| By taking medications which can increase the sexual desire | 0 (0.0)                                | 29 (53.7)                                  | 19.640***       |
| By taking medications to reduce infection     | 5 (19.2)                               | 17 (31.5)                                  | 1.321           |
| By taking medications which are used for treatment of mental problems | 6 (23.1)                                | 30 (55.6)                                  | 7.480**         |
| By taking treatment from gynecologist         | 9 (34.6)                               | -                                           |                 |
| Consultation and discussion with a doctor     | 6 (23.1)                               | 41 (75.9)                                  | 20.226***       |
| There is no treatment                         | 2 (7.7)                                | 3 (5.6)                                    | 0.000*          |
| Medications to reduce sexual desire           | 1 (3.8)                                | -                                           |                 |
| By talking to doctors i.e., counseling        | 4 (15.4)                               | -                                           |                 |

**P<0.01; ***P<0.001; *Chi-square test with Yate’s correction

concepts and the principles of Ayurveda. However, the term female Dhat syndrome has not been accepted in the nosology. Surprisingly in the past, none of the study has attempted to compare the clinical picture of female patients with vaginal discharge with males presenting with Dhat syndrome. This exploratory study evaluated the females with symptoms of nonpathological vaginal discharge from the perspective of female Dhat syndrome and compared them with male patients with Dhat syndrome.

Sociodemographic profile

The demographic profile of women included in this study is very similar to that reported in studies which have evaluated women with vaginal discharge from India, in general, population setting and from other countries. While comparing with male patients of Dhat syndrome, not so surprisingly few differences emerged. However, as expected, lower proportions of women were on paid employment and significantly higher proportion of women presenting with vaginal discharge were married. This difference could be understood due to the unique sociocultural aspects wherein women marry early as compared to the men and take up primarily the roles of a homemaker.

Psychiatric morbidity

In the present study, all the women were found to have one or the other psychiatric morbidity, with somatoform/dissociative disorder being the most common psychiatric diagnosis, followed by that of anxiety disorders and depressive disorder. The presence of psychiatric morbidity in all the patients could be due to the selection bias as all the patients were recruited from the psychiatry outpatient services and hence, it should not be concluded that all women with vaginal discharge suffer from common mental disorders. Previous studies too have reported a higher prevalence of common mental disorders in patients with vaginal discharge and have also reported vaginal discharge as a symptom in patients with common mental disorders. Therefore, all women with nonpathological vaginal discharge merit evaluation for psychological morbidity.

When compared to male patients with Dhat syndrome, female patients had a higher prevalence of somatic and dissociative disorders and lower prevalence of depressive disorders. This finding needs further examination. In general, studies of patients with common mental disorders suggest a higher prevalence of somatic symptoms in women compared to men. It is also possible that there could be some clinician bias as they are more aware of the comorbidity of Dhat syndrome with depressive and anxiety disorders. Hence, in a proportion of patients with Dhat syndrome, they do not make additional psychiatric diagnosis.

Characteristics of vaginal discharge

The characteristic vaginal discharge noted in the present study is in the form of wetness in the vagina along with or without wetting of undergarments in three-fourth of the cases. This is similar to the milky discharge noted in earlier studies. All the patients reported that vaginal discharge was made of vital fluid of the body. This belief is in consonance with old Indian concept in Ayurveda, according to which genital secretions are the vital concentrated fluid of the body and preservation of same is essential for life. In fact some authors suggest that according to Ayurveda genital secretions also have “jaraseem” (micro-organisms), which are equivalent of sperms in the semen. In the ethnographic study, Trollope-Kumar observed that many patients and local healthcare professionals (e.g., dai) were worried about whitish vaginal discharge, i.e., safed panni.
because of the belief that “100 drops of blood was required to make one drop of safed panni.” In an earlier study, from the same catchment area as that of the present study it was noted that almost all patients (95.2%) reported melting of bones as a cause of vaginal discharge, which according to the authors fits with the same explanations as provided in Ayurveda. These beliefs are very akin to the ones associated with semen formation which are at the core of the explanation of Dhat syndrome in Indian male patients. Accordingly from the management perspective, it is important to address these faulty beliefs in women presenting with nonpathological vaginal discharge. Appropriate psychoeducation modules must be designed keeping these beliefs into consideration. From the nosological perspective, the existence of these beliefs in women clearly suggests the existence of female equivalent of Dhat syndrome.

**Situations in which there is passage of vaginal discharge**
Although majority of the female subjects reported vaginal discharge irrespective of any specified situation, yet some did experience vaginal discharge while straining for passing stools, passing urine, during sexual excitement, watching/reading pornography and just before or after menstruation. Previous studies which have evaluated patients of vaginal discharge have also reported the existence of vaginal discharge before menstruation. Passage of vaginal discharge irrespective of the situation possibly characterizes these patients and can be considered to be an essential feature of this syndrome.

**Reasons for passage of vaginal discharge**
Many studies have evaluated for the reported causes of vaginal discharge and have documented causes such as weakness, melting of bones, visit of husband to other women, poor hygiene of husband, poor personal hygiene, internal gynecological problems, food items which produce heat or which are warm, stress and emotional factors, excess heat in the body, infection, hot and spicy foods and hot weather, backache, operation for family planning, having too many children use of contraceptives such as copper T, domestic violence, physical violence, and sexual violence. Patients included in the present study too attributed their symptoms to some of these factors. Many of these causal factors like consumption of hot foods possibly help to provide a cultural explanation to the patients for their symptoms.

**Consequences of vaginal discharge**
The physical and mental consequences reported by our patients are in accordance with the typical descriptions provided by anthropologists, epidemiologists and mental health professionals. Some of the authors have reported a bidirectional relationship of vaginal discharge and psychosocial stress with one leading to the other. Although we specifically did not assess this, more than one-third of our patients reported that loss of vaginal fluid can lead to mental illness. Many patients linked vaginal discharge with irritability before and after menstruation, which could be akin to the premenstrual dysphoria. The presence of vaginal discharge was also associated with weakness in sexual ability, weakness in body, weakness in stamina and thinness of physique. All these features are similar to those observed in male patients with Dhat syndrome.

**Associated psychological and somatic symptoms**
The somatic symptom profile of patients in the present study can be considered as typical of that of patients with somatoform disorders, as noted in male patients with Dhat syndrome and, as seen earlier in females with vaginal discharge. These findings suggest that at least there is a subgroup of patients who present as that of patients with somatoform disorders, in whom symptoms are determined and shaped by the cultural beliefs. Certain similarities with male patients of Dhat syndrome call for further evaluation of these characteristics.

**Help seeking and treatment-related beliefs**
With regards to the treatment expectations, about two-fifth of the patients believed that symptoms of vaginal discharge could be relieved by taking energizing medications such as vitamins/tonics/tablets. Other measures considered beneficial were treatment from a gynecologist, change in food and taking medications which are used for the treatment of mental problems. Understanding these expectations of the patients can be very useful in designing the treatment packages for these patients. Some of the differences from the male patients with Dhat syndrome are possibly shaped by the cultural factors and psychiatric comorbidity.

Our study was limited by small sample size and recruitment of patients from a mental health care facility in a tertiary care hospital. This study was a questionnaire-based study and the clinical profile of the patient could have been limited by the areas covered in the questionnaire. It is quite likely that many other aspects of this clinical entity still remain unexplored. Further, the questionnaire used for this study still needs validation.

**CONCLUSION**
Present study suggests that a subgroup of patients with vaginal discharge have beliefs of loss of vital fluid. These patients attribute their somatic and mental symptoms to the passage of whitish vaginal discharge and are distressed due to the same. These patients have accompanying somatic, anxiety, and depressive symptoms. This clinical picture is similar to that of Dhat syndrome in males. Accordingly female Dhat syndrome also must be recognized as a
culture-bound syndrome. Identification of the same may help in managing this subgroup of patients seeking help from the gynecologists for their nonpathological vaginal discharge or from mental health professionals for their symptoms of common mental disorders.

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