

Assessment of Temperament in Women with Stress Urinary Incontinence: An Observational Study

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ABSTRACT

This study aimed to explore whether the temperament of the body is related to and can cause stress urinary incontinence (SUI) in reproductive-age women. Urinary incontinence (UI) is defined as involuntary loss of urine. SUI is defined as “the complaint of involuntary leakage on effort or exertion, or on sneezing or coughing.” In Unani medicine, one of the causes that lead to UI is temperament (mizaj) of the body or organ..

This study was a single-center, observational trial conducted at the outpatient department of the National Institute of Unani Medicine, Bangalore, India, between March 2012 and November 2012. A total of 60 women presenting with SUI for at least 6 months, who fulfilled the inclusion criteria, were recruited. Their general temperament was assessed using a prestructured proforma designed for assessing temperament that was based on 10 determinants (alamat ajnase ashra).

Of 60 patients, sanguine and phlegmatic temperament was found in 31 (52%) and 29 (48%) patients, respectively. None of the patients had choleric and melancholic temperament. Maximum number of women were in the age group of 31–40 years (n = 38, 63%) in which 55% (n = 17) and 72% (n = 21) had sanguine and phlegmatic temperament, respectively. All patients had anterior vaginal wall prolapse.

It is concluded that SUI occurs in reproductive-age women with sanguine and phlegmatic temperament. Also, using objective parameters for temperament assessment and conducting randomized studies with a larger sample size are recommended.

Key words: Observational trial, stress urinary incontinence, temperament, Unani medicine

INTRODUCTION

Urinary incontinence (UI), defined by the International Continence Society as “a complaint of any involuntary leakage of urine,” is a common problem affecting around 20%–30% of the adult population (1). The prevalence of UI in women varies from 4.8% to 58.4% in the world and has increased markedly in the recent decade, as revealed by a longitudinal population-based survey (2). Medical costs associated with UI are considerable, with annual expenditures similar to those on other chronic diseases such as arthritis and osteoporosis in women, (3). The most common type of UI is stress urinary incontinence (SUI), defined by the International Continence Society as “the complaint of involuntary leakage on effort or exertion, or on sneezing or coughing,” accounting for almost 50% of cases in premenopausal women (4,5).

Temperament (Mizaj), which is an important concept of Unani medicine, represents the metabolic constitution, psychological makeup, and behavioral pattern of an individual (6). Recent studies also indicate the important role of

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temperament in body functions. Association of temperament with autonomic and immune systems, blood groups, and various diseases further confirms this role (7). Temperament is a quality that is a consequence of mutual interaction of the four contradictory primary qualities (hotness, moistness, coldness, and dryness) residing within the elements. Vulnerability of altered temperament, which is called distemperament (sue mizaj), leads to several different types of diseases (8).

Simple (sue mizaj sada) and compound imbalance of temperament (sue mizaj maddi) can occur. Sue mizaj maddi (sanguine, choleric, phlegmatic, and melancholic) is the abnormal temperament in which the specific state of equilibrium is disturbed due to a change in the specific ratio of quality and quantity of humor locally or generally. This condition may be associated with the deficiency of a morbid matter or its excess (9). People of one type of temperament may be prone to a particular group of diseases in different phases of their lives (10).

Incontinence is recognized since antiquity (11). Unani medicine believes in specific temperament (mizaj) and humoral (akhlat) theory for the diagnosis of disease, promotion of health, prevention of diseases, and cure (6). In Unani medicine, UI is known as *salasal baul*, defined as involuntary loss of urine (12–15) or inability to control urine. Unani scholars wrote that the laxity of musculature of the bladder, weakness of the bladder (zoafe masana) or hot temperament of the bladder (hiddate masana)(16,17) or hot/sanguine distemperament (sue mizaj har or damavi),(12) external distemperament (sue mizaj khariji) in the bladder muscles and cold or phlegmatic distemperament (sue mizaj barid/balghami), diuretics, weakness in absorptive faculty (zoafe quwate jaziba), (18) pregnancy and constipation, inflammation (waram) in the surrounding structures of the bladder, and dislocation of the bladder are causes of involuntary loss of urine (12,13,18). The clinical symptom for the dominance of cold (galbae buroodat) and moisture (rutoobat) is that the urine is white without burning micturition. Symptoms of excessive heat include dark-colored urine and the inability to bear hot foods. Consuming hot foods is harmful in hot distemperament (sue mizaj har)(19). Hence, it is evident that the temperament

of the whole body or organ plays an important role in causing UI. For maintaining the health of an individual and avoiding diseases, it is necessary to be acquainted with the temperament of an individual and the factors (age, diet, weather, residence, occupation, and habit) responsible for the alteration in the temperament of an individual (10). The aim of this study was to explore whether the temperament of the body is related to and can cause SUI in reproductive-age women.

MATERIALS AND METHODS

Study design

This study was a single-centre observational trial conducted at the outpatient department of the National Institute of Unani Medicine, Bangalore, India, between March 2012 and November 2012. Written informed consent was obtained from each patient.

Participants

A total of 60 women presenting with SUI for at least 6 months, who fulfilled the inclusion criteria, were recruited. They were parous women aged 18–55 years, identified having symptoms of predominant SUI with or without grades 1, 2, and 3 genital prolapse with Valsalva maneuver. Patients with a positive cough stress test (full bladder in the supine position) on physical examination at visit 1 were also included. Patients with any pelvic pathology, malignancy, fistula, or other types of diseases were excluded. Pregnant and lactating women were also excluded.

Procedure

The patients underwent assessments including urogynecological history, and physical examination, and a stress test. In complete pelvic examination, stress test, pelvic floor muscular strength, genital prolapse, per speculum, and per vaginal examination were performed. Genital prolapse was graded using the Baden-Walker classification system. The patients who failed to follow the protocol were withdrawn from the study.

Assessment tools

The general temperament of women was assessed using a prestructured proforma designed for assessing temperament that was based on 10 determinants (alamat ajnase ashra) (Figure 1).

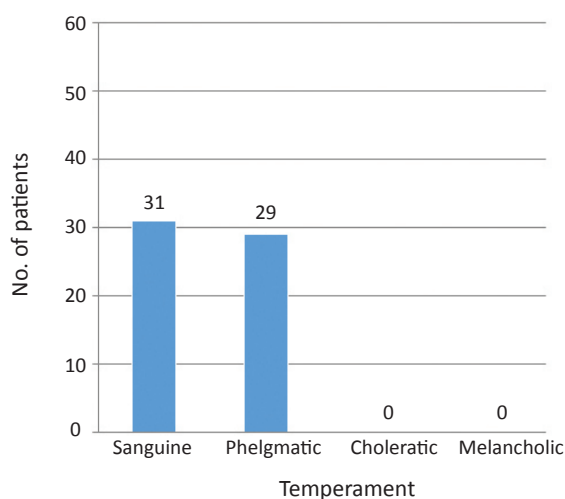


FIGURE 1: Distribution of patients according to temperament

For easy understanding, the parameters were pointwise arranged. The 10 parameters were tactile sensation (malmas), muscles and fats (leham wa shaham), hairs of the body (ashaar), color of the body (laun), stature (hayat al aza), quality of passiveness of the organs (kaifiyat al infial), sleep and wakefulness (naum wa yaqza), body functions (afaal al aza), excreta of the body (fudhlat al badan), and psychic reactions (infalate nafsaniya) (12).

Outcome

The primary outcome was to assess the temperament in reproductive-age women with SUI.

Data analysis

The statistical software GraphPad Instat version 3.00 for Windows (GraphPad Software, CA, USA) was used for the analysis of the data.

Statistical analysis

Descriptive analysis was performed using means of the frequencies of the category variables and measurements of the position and dispersion of the continuous variables. The results on continuous measurements were expressed as mean \pm standard deviation (min–max), and the results on categorical measurements were expressed as number (%).

TABLE 1: Baseline Characteristics

Characteristics	Total (n=60)
Age (year) (mean \pm SD)	34.63 \pm 5.819
Religion [no(%)]	
Christian	1 (1.67)
Hindu	13 (21.67)
Muslim	46 (76.67)
Socioeconomic status [no(%)]	
Upper (I)	0
Upper middle (II)	4 (6.67)
Lower middle (III)	26 (43.33)
Upper lower (IV)	30 (50)
Lower (V)	0
Residence [no(%)]	
Rural	8 (13.33)
Urban	52 (86.67)
Diet [no(%)]	
Vegetarian	2 (3.33)
Non-vegetarian	58 (96.67)
Duration of incontinence (year) [no (%)]	
\leq 1	38 (63.33)
2-5	19 (31.66)
6-10	3 (5)
Age of menarche (year) (mean \pm SD)	13.31 \pm 0.99
Age of marriage (year) (mean \pm SD)	17.63 \pm 1.74
Duration of cycle (day) (mean \pm SD)	29.01 \pm 1.75
Duration of flow (day) (mean \pm SD)	3.18 \pm 0.99
Body mass index (kg/m ²) (mean \pm SD)	27.45 \pm 4.51
Pelvic floor muscle strength [[no (%)]	
1 (Absent)	0
2 (Weak)	15
3 (Moderate)	45
4 (Good)	0
Anterior vaginal wall prolapse [no (%)]	
0	0
1	7 (11.66)
2	42 (70)
3	11 (18.33)
4	0
Posterior vaginal wall prolapse no (%)	
0	1 (1.67)
1	27 (45)
2	32 (53.33)
3	0
4	0
Cervical descent [no (%)]	
0	2 (3.33)
1	44 (73.33)
2	14 (23.33)
3	0
4	0
Position of uterus [no (%)]	
Anteversion	55 (91.66)
Retroversion	5 (8.33)

TABLE 2: Distribution of Socio-demographic Characteristics of Women according to Temperament

Characteristics	Total (n=60)	Sanguine (n=31)	Phlegmatic (n=29)
Age (year)	34.63 ± 5.819		
21 - 30	14 (23.33)	10 (32.25)	4 (13.79)
31 - 40	38 (63.33)	17 (54.83)	21 (72.41)
41 - 50	8 (13.33)	4 (12.90)	4 (13.79)
Religion			
Christian	1 (1.67)	1 (3.22)	0
Hindu	13 (21.67)	5 (16.12)	8 (27.58)
Muslim	46 (76.67)	25 (80.64)	21 (72.41)
Socioeconomic status			
Upper (I)	0	0	0
Upper middle (II)	4 (6.67)	2 (6.45)	2 (6.45)
Lower middle (III)	26 (43.33)	17 (54.38)	9 (31.03)
Upper lower (IV)	30 (50)	12 (38.70)	18 (62.06)
Lower (V)	0	0	0
Residence			
Rural	8 (13.33)	5 (16.12)	3 (10.34)
Urban	52 (86.67)	26 (83.87)	26 (89.66)
Diet			
Vegetarian	2 (3.33)	1 (3.22)	1 (3.44)
Non-vegetarian	58 (96.67)	30 (96.77)	28 (96.55)
Body mass index (kg/m ²)	27.45±4.51	27.54	27.36
18.50 - 24.99	20 (33.33)	10 (32.35)	10 (34.48)
25 - 29.99	21 (35)	10 (32.35)	11 (37.93)
≥ 30	19 (31.67)	11 (35.48)	8 (27.59)

RESULTS

Of 60 patients, sanguine (mizaj damavi) and phlegmatic temperament (mizaj balghami) were found in 31 (52%) and 29 (48%) patients, respectively. None of the patients had choleric and melancholic temperament (Figure 1). The baseline characteristics of women with SUI are summarized in Table 1. Maximum number of women belonged to the age group of 31–40 years (n = 38, 63%) in which 55% (n = 17) and 72% (n = 21) had sanguine and phlegmatic temperament, respectively. Maximum number of women were Muslims (n = 46, 77%) in which 80% (n = 25) women had sanguine temperament and 72% (n = 21) had phlegmatic temperament. Of 60 women, 26 (43%) were from the lower middle class in which 17 (54%) and 9 (31%) had sanguine and phlegmatic temperament, respectively.

Thirty (50%) women were from the upper lower class in which 12 (39%) and 18 (62%) had sanguine and phlegmatic temperament, respectively (Table 2). Thirty-eight (63%) women had parity three or more than three, and 42 (70%) and 32 (53%) women had second degree anterior and posterior vaginal prolapse, respectively (Table 3).

DISCUSSION

Since diagnosis, treatment, prevention, and health care instructions depend on each person's individual temperament. Susceptibility to altered temperament (distemperament) leads to several different types of diseases (8). Unani scholars were of the opinion that people of one type of temperament may be prone to a particular group of diseases in different phases of their lives and under different climatic conditions. For example, phlegmatic or cold temperament people are usually susceptible to develop obesity, common cold, and paralysis, whereas sanguine or hot temperament people are prone to develop fever and sunstroke. Sanguine and phlegmatic temperament were found in 31 (52%) and 29 (48%) patients, respectively, in this study, which is in agreement with the observation of Unani scholars that SUI can occur in reproductive-age women with hot or sanguine or cold or phlegmatic temperament. Samarqandi wrote that distemperament causes weakness of the bladder (20) leading to incontinence of urine. Kausar Chandpuri mentioned that weakness in the absorptive faculty of the bladder muscles or inflammation leads to distemperament (18).

Previous studies have indicated that the incidence of SUI is strongly related to increasing age; this is confirmed when only young and middle-aged women are considered. Overall, approximately half of all incontinent women are affected by SUI, and this is the predominant type of incontinence in young and middle-aged women (21). In 2000, the Epidemiology of Incontinence in the County of NordTrøndelag study showed that more than 50% patients complained of leakage episodes during strenuous activity. These data are even more impressive when the female population between 35 and 39 years of age is considered: in this specific subgroup of subjects, one out of five women consults a

TABLE 3: Parity and Pelvic Examination

Pelvic Examination	Grading	Total (%) (n=60)	Sanguine (n=31)	Phlegmatic (n=29)
Parity	1	4 (6.67)	3 (9.67)	1 (3.44)
	2	18 (30)	11 (35.48)	7 (24.13)
	3	19 (31.67)	11 (35.48)	8 (27.58)
	>3	19 (31.67)	6 (19.35)	13 (44.82)
Pelvic floor muscle strength (PFMS)	1 (Absent)	0	0	0
	2 (Weak)	15 (25)	8 (25.80)	7 (24.13)
	3 (Moderate)	45 (75)	23 (74.19)	22 (75.86)
	4 (Good)	0	0	0
Anterior vaginal wall prolapse (AVWP)	0	0	0	0
	1	7 (11.66)	6 (19.35)	1 (3.44)
	2	42 (70)	21 (67.74)	21 (72.41)
	3	11 (18.33)	4 (12.90)	7 (24.13)
	4	0	0	0
Posterior vaginal wall prolapse (PVWP)	0	1 (1.67)	0	1 (3.44)
	1	27 (45)	16 (51.61)	11 (37.93)
	2	32 (53.33)	15 (48.38)	17 (58.62)
	3	0	0	0
	4	0	0	0
Cervical descent	0	2 (3.33)	1 (3.32)	1 (3.44)
	1	44 (73.33)	25 (80.64)	19 (65.55)
	2	14 (23.33)	5 (16.12)	9 (31.03)
	3	0	0	0
	4	0	0	0

doctor in connection with UI and at least 60% complain of SUI, which rises to 89% if women consulting a doctor over symptoms of mixed incontinence (in which SUI is associated with overactive bladder) are also included. It has been clearly demonstrated that exposure to obstetrical risk factors associated with pregnancy and delivery is the principal pathophysiological factor behind the wide diffusion of SUI among women of childbearing age (21). A Unani scholar also observed that pregnancy is one of the causes for UI. In another study, almost half of the subjects (45%) were younger than 50 years of age (22). This finding is in agreement with the present study in which 38 (63%) patients were in the age group of 31–40 years, and younger than 50 years.

All patients had anterior vaginal wall prolapse. This confirms the finding of Unani physicians that laxity of masana is one of the causes of UI (20).

In the present study, the patients were overweight. Many researchers have reported an association (that holds after adjusting for age and parity) between increased weight and body mass index (BMI) and UI. For example, Hannestad et al. described a dose–response relationship between BMI and severe UI. Compared with women with a BMI less than 25 kg/m², odds ratios (ORs) for the following BMI groups were as follows: BMI 25–29, OR 2.0 (95% confidence interval [CI] 1.7–2.3); BMI 30–34, OR 3.1 (95% CI 2.6–3.7); BMI 35–39, OR 4.2 (95% CI 3.3–5.3); and BMI 40+, OR 5.0 (95% CI 3.4–7.3) (23).

Obesity deserves special mention for its role in causing or exacerbating SUI. Increased BMI is associated with increased intra-abdominal pressure, thereby straining pelvic floor structures and increasing bladder pressure and urethral mobility. The physiopathology of UI is related to compromise of the levator

MIZAJ ASSESSMENT CHART					
Regd. No/Rand. No.		Name of Subject:			
Sex:		Age:			
Address:					
1.	Built	Muscular and broad	Fatty and broad	Muscular and thin	Lean
2.	Tact us	Hot and soft	Cold and soft	Hot and rough	Cold and rough
3.	Complexion	Ruddy	Chalky	Pale	Purple
4.	Hair				
	a) Structure	Thick	Thin	Thin	Thick
	b) Shape	Straight	Curly	Curly	Curly
	c) Number	Dense	Scarce	Dense	Scarce
	d) Color	Black	Brown	Black	Black and white
	e) Growth	Rapid	Slow	Rapid	Slow
5.	Veins	Visible	Inconspicuous	Prominent	Visible and firm
6.	Pulse rate	Normal	Low	High	Low
7.	Pulse stroke	Strong	Weak	Strong	Weak
8.	Appetite	Normal	Subnormal	Normal	Distaste (hyper)
9.	Sleep	Normal	Excess	Less	Least
10.	Movement	Active	Slow	Hyperactive	Less active
11.	Diet (most liked)	Cold and dry	Hot and dry	Cold and moist	Hot and moist
12.	Weather (most suitable)	Cold and dry	Hot and dry	Cold and humid	Hot and humid
13.	Emotions	Moderate	Calm and quiet	Easily provoked	Anxious
14.	Urine	Reddish concentrated	Colorless	Fiery and yellow	Dark concentrated
15.	Stool	Soft	Jelly like	Dry, dark color	Hard
	Conclusion				
	Temperament:	Damvi	Wetness	Coldness	Saudavi

ani muscles, endopelvic fascia, and muscular urethra following pudendal nerve denervation and loss of ligamentous support of the urethral complex. Suboptimal urethral compression pressure of the levator ani muscles to facilitate sphincter closure has been correlated with obesity, hyperglycemia, paravaginal defects, microvascular innervations impairments, neurological defects, chronic bacterial colonization, urinary retention, and urinary tract infections (24).

The strength of the present study was that it was the first to perform temperament assessment in women with SUI. The limitations of the study were smaller sample size, lack of a control group, need for an evaluation in other types of UI, and no suitable "gold standard" for validation assessment. The purpose of this study was to assess temperament indices using a brief self-administered questionnaire. The researchers selected only the subjective parameters in the questionnaire, and therefore

in future studies, efforts must be made to include objective parameters and test the reliability and validity of a brief self-administered questionnaire in a large sample. Moreover, the sampling method was nonrandom in this study and the generalizability of the results was less than that of random sampling. Hence, random sampling is recommended for further studies.

CONCLUSIONS

It is concluded that SUI can occur in reproductive-age women with sanguine and phlegmatic temperament. Also, using objective parameters for temperament assessment and conducting randomized studies with a larger sample size are recommended.

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