

Evaluation of *Mizaj* (Temperament) in Menopausal Transition Symptoms: A Pilot Study

Arshiya Sultana^{1*}, Lubna Fatima², Gulamuddin Sofi³ and Syeda Lamatul Noor⁴

¹Department of Amraze Niswan wa Ilmul Qabalat (Obstetrics and Gynecology), National Institute of Unani Medicine, PG Institute of Research, Bangalore, Karnataka, India

²Department of Amraze Niswan wa Ilmul Qabalat (Obstetrics and Gynecology), Faculty of medicine (Unani), Jamia Hamdard, Delhi, India

³Department of Ilmul Advia (Pharmacology) National Institute of Unani Medicine, PG Institute of Research Bangalore, Karnataka, India

⁴Department of Atfal (Pediatrics), Yunus Fazlani Unani Medical College, Kunjkhedra, Maharashtra, India

Abstract

Mizaj (temperament) is one of the fundamental concepts of Unani system of medicine. Internal and external factors influences the human body leading to su' mizaj (altered temperament) that ultimately inflict the whole body or a specific organ in the form of disease. Therefore, mizaj of a patient or organ has to be evaluated. Thus, this study was planned to determine the mizaj in women with menopausal transition symptoms.

Material and methods: A prospective, single centre pilot study was conducted in 60 menopausal transition symptoms women in the National Institute of Unani medicine (NIUM), India between April 2013 and January 2014. The patient's initial severity of menopausal transition symptoms were evaluated using the validated menopause rating scale (MRS) Questionnaire. The temperament was assessed by alamate su' mizaj (clinical features of abnormal temperament) of body and ghalaba-i-akhlat (dominance of humour) and dalaale amzaj al-rahim (clinical features of uterine temperament) as described in the traditional Unani literature. The data was analyzed by descriptive analysis.

Results: The split half reliability of the questionnaire was 0.87 of 60 patients, 41(68.33%), 15(25%) and 4(6.67%) patients had barid (cold), harr (hot) and yabis (dry) su' mizaj respectively and 55(91.67%), and 3(5) patients had clinical features of burudat (coldness) and hararat al-rahim (hotness of uterus). All patients had ghalaba al-sawda (dominance of black bile humor).

Conclusion: This pilot study validates the claim of Unani scholars that the su' mizaj is more towards burudat and ghalaba-i-akhlat sawda (dominance of black bile) was also observed in women with menopausal transition symptoms.

Keywords: Akhlat; *Mizaj*; Menopausal transition; Temperament; Unani medicine

Introduction

Mizaj (temperament) is one of the fundamental concepts of Unani system of medicine, diagnosis and line of management of any disease is based upon it. Every human being has been furnished with a specific *mizaj* through which organs and systems of an individual perform his functions properly [1]. Internal and external causes influences the human body leading to su' *mizaj* (altered temperament) that ultimately inflict the whole body or a specific organ in the form of disease. The principle of management of disease is to correct the altered temperament. Therefore, before commencing any treatment, *mizaj* of a patient or organ has to be evaluated.

Unani scholars also inscribed that the human life is basically divisible into four age groups and each age group have their particular *mizaj* for example, *mizaj* is barid (cold) and yabis (dry) between 35 and 60 years age group and this period of life is known as *sin al-kahulah/sin al-ya's* (late adulthood). At this age, dynamic changes occurs in reproductive and nonproductive tissues and production of *rutubat al-gariziya* is decreased to such an extent that it is insufficient to maintain *hararat al-gariziya* (innate heat) and all the *quwa* (power) starts deteriorating [2]. In *sin al-ya's* because of change in *mizaj* towards *burudat* (coldness), *ihitbas al-tamth* (amenorrhea) can occur naturally. Additionally, the production of *dam* (blood) is decreased from liver, whatever little is produced, tends to be towards coldness [3]. This leads to clinical manifestations associated with *ihitbas al-tamth* such as fatigue, loss of appetite, weight gain, hirsutism, headache, backache, neck pain, general myalgia, arthralgia, nervousness, anxiety, depression, and insomnia [3,4]. *Ihitbas al-tamth* is defined as absence of menstrual

bleeding for more than 2 months or decrease in quantity [5,6] similarly defined in conventional system of medicine [7]. It may be primary (i.e., never menstruated) or secondary (i.e., attained menarche, amenorrhea more than three months).

Though in classical Unani sources, straight forward discussion of menopausal transition is not mentioned but its symptoms are mentioned under the heading of *ihitbas al-tamth*. In conventional medicine, menopausal transition encompasses a period of dynamic changes in reproductive and non-reproductive tissues [8]. Menopausal transition is a period when the endocrine, biological, and clinical features of approaching menopause begin and menstrual irregularities are the commonest initial marker. The biology underlying the transition to menopause includes central neuroendocrine changes as well as changes within the different organs of the body [9]. It may be viewed as a problematic period of menstrual, emotional and physiological changes. The menopausal transition may begin as early as fourth decade (late 30s) and may vary between 2 to 8 years in length [10]. Women

***Corresponding author:** Arshiya Sultana, Department of Amraze Niswan wa Ilmul Qabalat (Obstetrics and Gynecology), National Institute of Unani Medicine, PG Institute of Research, Bangalore, Karnataka, India, Tel: 09740915911; E-mail: drasnium@gmail.com

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also experiences higher prevalence of somatic and psychological symptoms [11]. Menopausal transition has been divided into an early and late phase by Soules and other at the Stages of Reproductive Aging Workshop (STRAW) held in July, 2001 [12]. Early transition: changes in cycle length of ≥ 7 days either direction observed for at least two consecutive cycles or 60 days amenorrhea. Late transition: 90 days to 11 months amenorrhea. Menopausal transition is known to play major role in the etiology of symptoms such as hot flashes, night sweats, menstrual problems and vulvovaginal atrophy, mood changes, sleep disturbances and sexual dysfunction are also commonly reported and may be attributable to the hormonal aberrations experienced during the transition [13]. The menopausal and the years of life spent on the menopausal state bring with them issues related to both quality of life and disease prevention and management [14]. Hence, *mizaj* of the patient in this disease should be assessed so that appropriate treatment can be given. Till date none of the studies have assessed the *mizaj* in menopausal transition symptoms. Hence, this pilot study was planned to determine the *mizaj* in menopausal transition women.

Material and Methods

A prospective, single center pilot study was carried out in the National Institute of Unani medicine (NIUM), Bangalore, India between April 2013 and January 2014. Written informed consent was obtained from each patient before entering into the study. A total of 60 menopausal transition women aged ≥ 35 presenting with early and/or late transition menopausal transition symptoms for at least two months were included. Women with undiagnosed vaginal bleeding, malignancies, surgical menopause (bilateral oophorectomy), uncontrolled hypertension, uncontrolled diabetes mellitus, and thyroid dysfunction were excluded.

Patients were interrogated and detailed history, physical and gynecological examination and menopausal rating scale questionnaire was filled. Kuppuswamy's socioeconomic scale was used for socioeconomic status evaluation. Menstrual calendar was used to assess menstrual regularity and amount of flow. For exclusion of general diseases routine investigations were carried out. Thyroid profile and ultra sonography of abdomen were carried out to exclude, thyroid dysfunction, uterine fibroid, and malignancy respectively.

The patient's initial severity of symptoms was evaluated using the validated health-related quality of life (HRQoL) questionnaire, menopause rating scale (MRS). Menopause rating scale consisted of 11 items assessing menopausal symptoms and a 5-point rating scale permits the patient to describe the perceived severity of complaints graded from 0-4, (0= not present), (1=mild), (2=moderate), (3=severe), (4=very severe) by checking the appropriate box. For the present study, the MRS English version was used. The composite score for each of the sub-scales is based on adding up the scores of the items of the respective dimension scores [15]. The total score ranges from 0 to 44. Scores ranging from 0-4, 5-8, 9-15, and 16+ were used to rate the perceived menopausal symptoms as none/minimal, mild, moderate, and severe respectively [16]. The total MRS and subscale scores were calculated. The *mizaj* was assessed by *alamate su' mizaj* (clinical features of altered temperament) of body and *ghalaba-i-akhlat* (dominance of humour) and *dalaele amzaj al-rahim* (clinical features of temperament of uterus) as described in the traditional Unani literature (Table 1) [17]. Signs and symptoms were scored on rating scale 4 through 1 for *alamate su' mizaj*, *ghalaba-i-akhlat* and *dalaele amzaj al-rahim*. Total score of each patient was added up and the inferences for type of *su' mizaj* was deducted based on equal interval scale developed from total score for the questionnaire. The reliability of the questionnaire was found to be

0.87 for split half reliability.

Data analysis

Statistical software: The Statistical software Graph Pad InStat version 3.00 for window (Graph Pad Software, San Diego, Calif, USA) was used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, Tables etc.

Statistical analysis

Descriptive analysis was performed by means of the frequencies of the category variables and measurements of the position and dispersion of the continuous variables. Results on continuous measurements were presented on Mean \pm SD (Min-Max) and results on categorical measurements were presented in number (%).

Results

A total number of 123 patients completed pre-baseline screening in which 60 patients met the criteria. Remaining patients (n=63) were excluded from the study because of different reasons. Thirty patients declined to participate and 33 patients were excluded [thyroid disease (n=10); uncontrolled hypertension and diabetes (n=11) and pelvic pathology (n=12)].

Baseline characteristics

The baseline variables (age, diet, socio-economic status, duration of illness, BMI, gynecological and obstetrical history, MRS and subscale scoring) are summarized in Table 2.

Early and late menopausal transition and menstrual irregularity: Early and late menopausal transition was noted in 22 (36.67%) and 38 (63.33%) patients respectively. It was noted that all 58 (93.33%) patients had *qillat-i-tamth* (hypomenorrhea) or *ihibas al-tamth*.

Mizaj

Of 60 patients, 41 (68.33%), 15(25%) and 4(6.67%) patients had *barid* (cold), *harr* (hot) and *yabis* (dry) *su' mizaj* respectively. All patients had *ghalaba-al-sawda* (dominance of black bile humour). Of 60 patients, 55(91.67%), and 3(5) patients had clinical features of *burudat al-rahim* (coldness of uterus) and *hararat al-rahim* (hotness of uterus), respectively and one patient each had symptoms of *rutubat al-rahim* (wetness of uterus) and *yabusate al-rahim* (dryness of uterus). Distribution of patients according to age and *su' mizaj* is summarized in Table 3.

Menopausal transition symptoms

The menopausal transition symptoms in each of the 11 individual symptoms (Hot flushes, heart discomfort, sleep problem, muscles and joint problems, depression, irritability, anxiety, physical and mental exhaustion, sexual problems, bladder problems and dryness of vagina) of MRS are summarized in Table 4. The distribution of patients according to *su' mizaj* and severity of menopausal transition symptoms are summarized in Table 5.

Discussion

Menopausal transition symptoms were present from the age of 35 years in the present study however, maximum number of patients (n=41, 64.9%) were between 41 and 50 years. Mean age of the patients in the present study was 43.83 ± 4.00 ranging from 35-52 years. *IbnSina* states natural *ihibas al-tamth* may occasionally occur early at the age of 35 otherwise 40-50 years. He also mentioned that after cessation of

Alamate Su' Mizaj (Clinical features of altered temperament)	
<p>Su' mizaj har (heat)</p> <input type="checkbox"/> Feeling of uncomfortable heat <input type="checkbox"/> Undue discomfort in fever <input type="checkbox"/> Quick exhaustion of energy as activity flares up the heat <input type="checkbox"/> Excessive thirst <input type="checkbox"/> Weak quick and rapid pulse <input type="checkbox"/> Burning and irritation in the pit of stomach <input type="checkbox"/> Bitter taste in mouth <input type="checkbox"/> Intolerance of hot foods <input type="checkbox"/> Comfort from cold things <input type="checkbox"/> Distress in hot weather	<p>Su' mizaj barid (cold)</p> <input type="checkbox"/> Weak digestion <input type="checkbox"/> Less desire for drinks <input type="checkbox"/> Laxity of joints <input type="checkbox"/> Tendency for catarrhal conditions and phlegmatic fevers <input type="checkbox"/> Fondness for hot dishes and aversion of cold ones <input type="checkbox"/> Greater discomfort in winters
<p>Su' mizaj ratb (Moisture)</p> <input type="checkbox"/> Laxity <input type="checkbox"/> Excess of salivation and nasal secretions <input type="checkbox"/> Tendency towards diarrhea and dyspepsia <input type="checkbox"/> Intolerance towards moist foods <input type="checkbox"/> Excess of sleep <input type="checkbox"/> Puffiness of eyelids	<p>Su' yabis (Dryness)</p> <input type="checkbox"/> Dry skin <input type="checkbox"/> Insomnia <input type="checkbox"/> Wasting <input type="checkbox"/> Intolerance of dry foods but affinity for moist things <input type="checkbox"/> Discomfort in autumn <input type="checkbox"/> Ready absorption by the body of hot water and light oils
Alamate Ghalaba-i-Akhlal (clinical features of dominant humour)	
<p>Ghalaba-i-khilt dam (blood)</p> <input type="checkbox"/> Feeling of heaviness of body especially behind eyes, head and temple <input type="checkbox"/> Frequent stretching and yawning <input type="checkbox"/> Excess tendency to drowsiness and sleep <input type="checkbox"/> Perception is poor and dull mind <input type="checkbox"/> Sweet taste of mouth often <input type="checkbox"/> Fatigue felt without exertion <input type="checkbox"/> Tongue is red <input type="checkbox"/> Boil on the body and ulcers on tongue <input type="checkbox"/> Often bleeding from gums nostrils and anus	<p>Ghalaba-i-khilt safra (bile)</p> <input type="checkbox"/> Yellow colour of eyes and complexion <input type="checkbox"/> Bitter taste in mouth <input type="checkbox"/> Rough and dry tongue <input type="checkbox"/> Dry nostril <input type="checkbox"/> Desire to cool breezes <input type="checkbox"/> Excessive thirst <input type="checkbox"/> Rapid pulse <input type="checkbox"/> Lack of appetite <input type="checkbox"/> Nausea with bilious vomiting of green <input type="checkbox"/> Irritative diarrhea <input type="checkbox"/> Frequent attacks of tingling in the skin
<p>Ghalaba-i-khilt balgham (phlegm)</p> <input type="checkbox"/> Excessive pallor <input type="checkbox"/> Flabbiness of body <input type="checkbox"/> Cold and moist skin <input type="checkbox"/> Excessive salivation <input type="checkbox"/> Thirst is diminished <input type="checkbox"/> Weak digestion with eructation <input type="checkbox"/> Pale urine <input type="checkbox"/> Excessive sleepiness <input type="checkbox"/> Flabby muscles <input type="checkbox"/> Mental dullness <input type="checkbox"/> Slow rate of pulse <input type="checkbox"/> Dreams are full of water, canals, ice, rains.	<p>Ghalaba-i-khilt Sawda (black bile)</p> <input type="checkbox"/> Dry and dark skin <input type="checkbox"/> Thick and dark blood <input type="checkbox"/> Anxiety <input type="checkbox"/> Burning in epigastrium and false appetite <input type="checkbox"/> Thick and turbid urine <input type="checkbox"/> Dark complexion and excessive hairiness <input type="checkbox"/> Patches of pigmentation <input type="checkbox"/> Chronic indolent ulcers <input type="checkbox"/> Diseases of spleen <input type="checkbox"/> Dreams are full of anxiety and full of dark places and dark objects
Dalalae Amzaja al-Rahim (clinical features of temperament of uterus)	
<p>Hararat al-rahim</p> <input type="checkbox"/> Hypomenorrhea <input type="checkbox"/> Colour of menstrual blood (siyahivazardi mail) <input type="checkbox"/> Dryness of lips <input type="checkbox"/> Excessive pubic hairs <input type="checkbox"/> Discolouration of urine <input type="checkbox"/> Increase pulse rate	<p>Burudat al-rahim</p> <input type="checkbox"/> Amenorrhea <input type="checkbox"/> Oligomenorrhea <input type="checkbox"/> Decrease viscosity of menstrual blood <input type="checkbox"/> Prolonged intermenstrual periods <input type="checkbox"/> Less pubic hairs <input type="checkbox"/> Colourless urine
<p>Rutubat al-rahim</p> <input type="checkbox"/> Decrease viscosity of menstrual blood <input type="checkbox"/> Increase amount of vaginal discharge <input type="checkbox"/> History of habitual abortions	<p>Yabusate al-rahim</p> <input type="checkbox"/> Dryness <input type="checkbox"/> Less vaginal discharge

Table 1: Alamate Su' Mizaj, Ghalaba-i-Akhlal and Dalalae Amzaja al-Rahim.

Characteristics	No. of Patients (n=60)	Characteristics	No. of Patients (n=60)
Age (y)		Obstetrics History	
≤ 35	1 (1.66)	Age of Marriage (y)	17.68 ± 4.09
36-40	17 (28.3)	Mode of del.:	
41-45	26 (43.3)	No delivery	2 (3.33)
46-50	13 (21.6)	Normal	53 (88.33)
51-55	3 (5)	Caesarean section	5 (8.33)
Diet		Parity:	
Non-vegetarian	53 (88.33)	0	2 (3.33)
Vegetarian	7 (11.67)	1	7 (11.66)
Socioeconomic status		2	16 (26.6)
Upper (I)	0	>3	35 (58.33)
Upper middle (II)	6 (10)	MRS Scoring	
Lower middle (III)	12 (20)	Total scoring	29.53 ± 5.11
Upper lower (IV)	41 (68.33)	Subscale scoring	
Lower (V)	1 (1.66)	Somatic	11.81 ± 2.36
Gynecological history:		Psychological	10.76 ± 2.81
Age of Menarche (y)	13.03 ± 1.37	Urogenital	6.94 ± 2.38
Past Menstrual history:		Duration of illness (Month)	9.46 ± 6.71
Duration of cycle (day)	29.4 ± 3.51	BMI	28.72 ± 5.34
Duration of flow (day)	4.71 ± 1.48		
Vaginal Dryness			
Absent	24 (40)		
Present	36 (60)		

Data Presented: No (%) or Mean ± SD.

Table 2: Baseline characteristics.

Age (Y)	Harr (Hot)	Barid (Cold)	Ratb (Wet)	Yabis (Dry)
<35	0	0	0	1 (1.67)
36-40	5 (8.3)	13 (21.6)	0	0
41-45	5 (8.3)	19 (31.67)	0	2 (3.33)
46-50	5 (8.3)	7 (11.67)	0	1 (1.67)
51-55	0	3 (5)	0	0

Data Presented: No (%) or Mean ± SD.

Table 3: Distribution of patients according to age and *Su' Mizaj* (altered temperament).

menstruation women resembles to men and milk discharge from breast is observed, which indicates that woman as reached the age of *sin-al-yas* [17]. Ismail Jurjani, Sabit bin Qurah and Bagdadi observed that cessation of menstruation is between the age of 35-60 years [3,18,19] and Zakriaya Razi stated that menstruation stops at the age of 40-60 years [4]. Siobán et al. reported 45.5 years median age of entry into the transition and 4.8 years duration for transition [20]. Freeman et al. reported 45.7 ± 3.6 years (range 39-53 years) mean age for menopausal transition; 47% remained premenopausal, and 53% were in the menopausal transition stages or postmenopausal [21]. Chronological age is a less sensitive indicator of reproductive aging due to relatively wide age range (42-58 years) of menopause though it is frequently used as a marker of the transition [21]. The mean age of inception of menstrual changes is 47.5 years, so that the mean duration of the transition is 3.8 years [22].

The mean BMI was 28.72 ± 5.34 kg/m². Mean BMI increased with increasing age. The mean waist/hip ratio was 0.949 ± 0.04. Earlier study reported no association with waist or hip circumference or their ratio or the trajectory variable [23]. Their hormone status was quite different when compared to women undergoing menopause transition (MT) [24].

Early and late menopausal transition and menstrual irregularity: Early and late menopausal transition was noted in 22 (36.67%) and 38 (63.33%) patients respectively. It was noted that all 58 (93.33%) patients had *qillat-i-tamth* (oligomenorrhea) or *ihitibas al-tamth* (amenorrhea).

Ibn Sina states that cessation of menstruation in woman occurs

Variables	No. of patients (n=60)
1. Hot flushes and Night sweat	2.74 ± 0.89
2. Heart discomfort	2.58 ± 0.99
3. Sleep problem	2.83 ± 0.92
4. Depressive mood	2.72 ± 0.94
5. Irritability	2.82 ± 0.94
6. Anxiety	2.26 ± 1.28
7. Physical and mental exhaustion	3.00 ± 0.72
8. Sexual problem	1.93 ± 1.30
9. Bladder problem	2.83 ± 1.12
10. Dryness of vagina	2.20 ± 1.11
11. Joint and muscular discomfort	3.71 ± 0.81

Data Presented: No(%) or Mean ± SD.

Table 4: Menopausal transition symptoms.

at age of *sin-al-yas* [17]. Further Unani scholars, discuss that *sin al-kahulah* (middle age) is period ranging from forty to sixty years. In this period of life, quantity of *rutubat al-ghariziyah* is lesser than the quantity required for the preservation of *hararat al-ghariziyah* or bodily metabolism. But there is no domination of *rutubat al-gharibah* (abnormal metabolic compounds). In this period the powers and faculties begins to deteriorate but there is no marked dissolution. The *mizaj* at this period is *barid* and *yabis*. Bagdadi opined that *tahleel* (dissolution) of *akhlata* (humour) in women is less, as they do lesser physical activity and vessels are narrower than men, therefore, there is accumulation of *akhlata* and *fuzla* in the body. To maintain homeostasis, body eliminate this *fuzla* (waste product) through *haiz* (menstruation), as process of *tabayi istefragh* (physiological elimination). Hence, when *ihitibas al-tamth* (amenorrhea) occurs, it leads to different kind of disorders [19]. Unani scholars state at this age, *mizaj* of the woman changes more towards *burudat*. The production of blood in liver gets decreased, whatsoever is produced that too declines towards coldness [3,17]. Hence, the causes of *ihitibas al-tamth* at this age may be *burudat al-rahim* or *ghalaba al-burudat* (dominance of coldness), *sudda urooq al-rahim* (closer of uterus or its vessels due to obstruction), or increased viscosity of blood [4,17]. In *ghalaba al-burudat*, *ghaleez akhlata* (viscos

Menopausal transition symptoms	No. of patients (n=60)				
	Total	Harr	Barid	Ratb	Yabis
1. Hot flushes					
0	3 (5)	0	2 (3.33)	0	1 (1.67)
1	2 (3.33)	1 (1.67)	1 (1.67)	0	0
2	12 (20)	3 (5)	8 (13.33)	0	1 (1.67)
3	33 (63.33)	9 (15)	23 (38.33)	0	1 (1.67)
4	10 (16.66)	2 (3.33)	7 (11.67)	0	1 (1.67)
2. Heart discomfort					
0	4 (6.67)	0	4 (6.67)	0	0
1	4 (6.67)	2 (3.33)	2 (3.33)	0	0
2	12 (20)	1 (1.67)	8 (13.33)	0	3 (5)
3	33 (66.66)	9 (15)	23 (38.33)	0	1 (1.67)
4	7 (6.66)	3 (5)	4 (6.66)	0	0
3. Sleep problem					
0	2 (3.33)	0	2 (3.33)	0	0
1	2 (3.33)	1 (1.67)	2 (3.33)	0	0
2	13 (21.66)	2 (3.33)	9 (15)	0	2 (3.33)
3	30 (40)	10 (10.67)	19 (31.67)	0	1 (1.67)
4	13 (30)	3 (5)	9 (15)	0	1 (1.67)
4. Depressive mood					
0	0	0	0	0	0
1	7 (11.66)	2 (3.33)	4 (6.67)	0	1 (1.67)
2	16 (26.66)	4 (6.67)	11 (18.33)	0	1 (1.67)
3	24 (40)	6 (10)	16 (26.67)	0	2 (3.33)
4	13 (21.67)	3 (5)	10 (16.67)	0	0
5. Irritability					
0	4 (6.66)	1 (1.67)	3 (5)	0	0
1	0	0	0	0	0
2	14 (23.33)	2 (3.33)	11 (18.33)	0	1 (1.67)
3	27 (45)	5 (8.33)	19 (31.67)	0	2 (3.33)
4	15 (25)	6 (10)	8 (13.33)	0	1 (1.67)
6. Anxiety					
0	10 (16.67)	1 (1.67)	8 (13.33)	0	1 (1.67)
1	3 (10)	0	3 (5)	0	0
2	17 (28.33)	5 (8.33)	9 (15)	0	3 (5)
3	21 (35)	7 (11.67)	14 (23.33)	0	0
4	9 (15)	2 (3.33)	7 (11.67)	0	0
7. Physical and mental exhaustion					
0					
1	1 (1.67)	0	1 (1.67)	0	0
2	2 (3.33)	0	2 (3.33)	0	0
3	2 (3.33)	0	0	0	2 (3.33)
4	43 (71.6)	10 (16.67)	31 (51.67)	0	2 (3.33)
	12 (13.3)	5 (8.33)	7 (11.67)	0	0
8. Sexual problem					
0	15 (16.6)	4 (6.66)	9 (15)	0	1 (1.67)
1	4 (6.6)	0	3 (5)	0	0
2	15 (26.6)	2 (3.33)	10 (11.67)	0	2 (3.33)
3	22 (46.6)	8 (13.33)	18 (30)	0	1 (1.67)
4	4 (3.3)	1 (1.67)	1 (1.67)	0	0
9. Bladder problem					
0	6 (6.6)	0	4 (6.66)	0	2 (3.33)
1	1 (3.3)	0	0	0	1 (1.67)
2	4 (6.6)	0	4 (6.66)	0	0
3	35 (63.3)	4 (6.66)	6 (10)	0	1 (1.67)
4	14 (20)	11 (18.33)	1 (1.67)	0	0
10. Dryness of vagina					
0	7 (6.6)	4 (6.66)	2 (3.33)	0	1 (1.67)
1	7 (13.3)	0	6 (10)	0	1 (1.67)
2	17 (33.3)	4 (6.66)	11 (18.33)	0	2 (3.33)
3	25 (40)	6 (10)	19 (31.67)	0	0
4	2 (6.6)	1 (1.67)	3 (5)	0	0
11. Jointand muscular discomfort					
0					
1	0	0	0	0	0
2	0	0	0	0	0
3	1 (3.3)	0	1 (1.67)	0	0
4	1520)	4 (6.66)	8 (13.33)	0	3 (5)
	44 (76.6)	11 (18.33)	32 (53.33)	0	1 (1.67)

Data Presented: No (%) or Mean ± SD.

Table 5: Menopausal transition symptoms and *Su Mizaj* (altered temperament) according to severity.

humour) mixes in the blood that leads to symptoms such as weakness of the body, increase frequency of micturition, *su' al-hazam* etc. [25].

Many women in the present study suffered from menstrual problems, some with irregular menstrual cycles with increase duration of menstrual cycle. Though menstrual irregularities are not listed and scored on the MRS scale, they are certainly one of the first and major worry of women in perimenopause. The onset of the menopausal transition is marked by changes in the menstrual cycle and in the duration or amount of menstrual flow. Consequently, cycles are missed, but the pattern is often unpredictable early in the menopausal transition [26]. In earlier study, it was noted that common pattern (where menstrual cycle lengths increase as menopause approached), about 25 per cent of women appeared to have no or minimal change in menstrual cycle variability or mean length before their final menstrual period (FMP). In SWAN, longer menstrual cycle lengths and more variable menstrual cycles were associated with a shorter time to FMP [20]. Few studies have reported hormone changes in relation to changes in menstrual cycle characteristics, such as the first self-reported change in the amount of menstrual flow, in the frequency of menstruation, or in the combination of changes in flow and frequency, an approach that has been adopted in the Melbourne Women's Midlife Health Project [9].

Menopause rating scale (MRS) and menopausal transition symptoms

The total MRS mean score was 29.53 ± 5.11 and all 60 (100%) patients had total MRS Score 16+, which shows that women HRQOL was severely affected. The somatic, psychological and urogenital symptoms mean score are summarized in Table 2.

Menopausal transition symptoms in each of the 11 individual symptoms of MRS showed that all patients had most of the symptoms in the present study, which validates the claim of Unani scholars. Unani scholars mentioned that other symptoms of *su' mizaj barid* (cold altered temperament) are also noticed in *ihitbas al-tamth* caused by *ghalaba al-burudat* (dominance of coldness) such as frequency of micturition and depression [27]. Further, they surmised that *ihitbas al-tamth* also leads to *awarizate* (complications) such as distortion of body figure, *ikhhtinaq al-rahim* (hysteria) [19] depression, irritability, anorexia increase thirst, heart becomes weak that leads to *khafkan* (palpitation), *suda* (headache) and heaviness of head, pain increases, stomach becomes weak leading to indigestion [19], anxiety, body becomes weak leading to fatigue, heaviness of body, dysuria, increase frequency of micturition etc. Occasionally in *ihitbas al-tamth*, women develop hair growth on face and upper lip, indicating that women had attained menopause [17,19]. Unani scholars discussed that above mentioned symptoms develops because of *musharikat al-rahim* (involvement of uterus) with other organs of the body. *Bukharat* (gases like substances) from the *urooq al-rahim* (uterine vessels) pass through the blood to the other organs of the body such as brain, head, stomach, musculoskeletal, heart etc., causing aforementioned symptoms [19]. In conventional medicine, it is mentioned that symptoms experience varies between individuals and throughout the transition. Most symptoms are reported during the perimenopause. These can be due to estrogen excess (migraine, nausea, breast tenderness, menorrhagia, shorter cycle length) or deficiency (vasomotor symptoms and vaginal dryness) and commonly fluctuation, reflecting the fundamental hormonal instability during these years. It is mentioned that estrogens modify synthesis, release, and metabolism of many neurotransmitters such as serotonin, dopamine, nor-adrenaline, acetylcholine, and melatonin neuropeptides including β -endorphin, which modulate the

activity of hypothalamic centers and the limbic system. Fluctuating levels of sex steroids, chiefly estrogen, result in altered function of the hypothalamus and limbic system and in this manner the regulation of mood, psychological well-being, thermoregulation and vasomotor stability, and many other functions occur. Estrogen withdrawal in menopausal women also results in considerably lowers blood serotonin levels. Low blood estrogen levels are also related with up-regulation of certain serotonin receptors (5-HT_{2A}) in the hypothalamus that are supposed to be involved in thermogenesis [28].

The strength of the present study was till date none of the studies, have evaluated *mizaj* in women with menopausal transition symptoms. Further, somatic, psychological and urogenital symptoms of menopausal transition were evaluated using the validated Health-Related Quality of Life (HRQoL) questionnaire, Menopause Rating Scale (MRS). The Menopause Rating Scale (MRS) was a valuable tool in determining the menopausal transition symptoms in patients.

Though current findings are important, the limitation of this study was test and re-test reliability of parameters used for assessments of *mizaj* has been not carried out. Hence, further it is recommended to validate the *mizaj* parameters in larger sample size, so that these parameters can be used for clinical assessment of different diseases.

Conclusion

This pilot study validates the claim of Unani scholars that *su' mizaj burudat* and *ghalaba-i-khilt sawda* is seen in women with menopausal transition symptoms.

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