**Pharmacophore**

ISSN-2229-5402

Journal home page: http://www.pharmacophorejournal.com

Pharmacophore
an International Journal
ISSN 2229-5402

# THE PREVALENCE OF THE SEVERITY PHYSICAL AND PSYCHOLOGICAL SYMPTOMS OF PREMENSTRUAL SYNDROME IN HOT AND COLD TEMPERAMENT

**Zahra Mohebbi Dehnavi[1*], Farzaneh Jafarnejad[2], Elham Adib Moghadam[3], Zahra Kamali [4], Somayeh Sadeghi [5], Parisa Yousefi Chermahini[6], Atefeh Ghanbary Adivi[7], Ala Saber Mohammad [8]**

1. *Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran*
2. *Department of Midwifery, School of Nursing and Midwifery, Mashhad, Iran*
3. *Master Of Midwifery, Faculty Of Nursing And Midwifery, Mashhad University Of Medical Science, Mashhad, Iran*
4. *Master of Science students, Student Research Committee, Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran.*
5. *Master of midwifery, Midwife, The maternity ward of Hazrat Abolfazl hospital, Minab, Hormozgan, Iran*
6. *Department of Midwifery, Faculty of Nursing and Midwifery, Azad University of Najaf Abad, Esfahan, Iran*
7. *Midwife, Lenjan Hospital, Esfahan, Iran*
8. *Master of Science students, Student Research Committee, Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran.*

**ARTICLE INFO**

**Received:**
03th Jun 2017
**Accepted:**
29th Nov 2017
**Available online:**
14th Dec 2017

***Keywords:*** *premenstrual syndrome, temperament, physical symptoms, psychological symptoms*

**ABSTRACT**

introduction: Premenstrual syndrome (PMS) refers to physical and emotional symptoms that occur in the one to two weeks before a woman's period. Symptoms often vary between women and resolve around the start of bleeding.and and temparament of a person can determine his mental and emotional and physical properties of the individual.The purpose of thisstudy was to assess theprevalence of the severity physical and psychological symptoms premenstrual syndrome in hot and cold temperament.

Materials and methods: We conducted this study on 65 students in dormitories of Mashhad University of Medical Sciences based on a hot temperament group and cold temperament group.

The tools were research unit selection questionnaire, midwifery and personal particulars, temporary determination of premenstrual syndrome, Beck Depression Inventory, recorded daily symptoms of premenstrual syndrome andDetermine temperament.Results analyzed by SPSS22 software, descriptive statistical tests.

discussion and results: the mean age of participants was 25/22 ± 4/41. the results showed that the physical symptoms of premenstrual syndrome, hot flashes, nausea, headache, dizziness, diarrhea-constipation, swelling, a passion for food into warm temperament and acne, palpitations, increased appetite into cool temperament occurs with the highest score.

Conclusion: The results of this study showed that The prevalence of the severity of the symptoms of premenstrual syndrome is different in hot and cold temperament.



**To Cite This Article:** Zahra Mohebbi Dehnavi, Farzaneh Jafarnejad, Elham Adib Moghadam, Zahra Kamali, Somayeh Sadeghi , Parisa Yousefi Chermahini, Atefeh Ghanbary Adivi, Ala Saber Mohammad , (2017), "The prevalence of the severity physical and psychological symptoms of premenstrual syndrome in hot and cold temperament", ***Pharmacophore, 8(6S),*** *e-1173180.*

## Introduction

Premenstrual syndrome (PMS) refers to physical and emotional symptoms that occur in the one to two weeks before a woman's period. Symptoms often vary between women and resolve around the start of bleeding.A woman's pattern of

**Corresponding Author: Zahra Mohebbi dehnavi, Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran. Email: Zahra.midwife@yahoo.com**

symptoms may change over time. [1] The cause of PMS is unknown.(2) Up to 80% women report having some symptoms prior to menstruation. These symptoms qualify as PMS in 20 to 30% of pre-menopausal women. [1]

More than 150 different symptoms have been associated with PMS. [3] Common emotional and non-specific symptoms include stress, anxiety, difficulty with sleep, headache, feeling tired, mood swings, increased emotional sensitivity, and changes in interest in sex. [4]

Physical symptoms associated with the menstrual cycle include bloating, lower back pain, abdominal cramps, constipation/diarrhea, swelling or tenderness in the breasts, cyclic acne, and joint or muscle pain, and food cravings. [4-8] The exact symptoms and their intensity vary significantly from woman to woman, and even somewhat from cycle to cycle and over time. [1] Most women with premenstrual syndrome experience only a few of the possible symptoms, in a relatively predictable pattern. [9] There are no laboratory tests or unique physical findings to verify the diagnosis of PMS. [10]

Other conditions that may better explain symptoms must be excluded. [10] A number of medical conditions are subject to exacerbation at menstruation, a process called menstrual magnification. These conditions may lead the woman to believe that she has PMS, when the underlying disorder may be some other problem, such as anemia, hypothyroidism, eating disorders and substance abuse. [10] A key feature is that these conditions may also be present outside of the luteal phase. Conditions that can be magnified perimenstrually include depression or other affective disorders, migraine, seizure disorders, fatigue, irritable bowel syndrome, asthma, and allergies. Problems with other aspects of the female reproductive system must be excluded, including dysmenorrhea (pain during the menstrual period, rather than before it), endometriosis, perimenopause, and adverse effects produced by oral contraceptive pills. [10, 11]

Many treatments have been tried in PMS. [12] Reducing salt, caffeine, and stress along with increasing exercise is typically all that is recommended in those with mild symptoms. [6] Calcium and vitamin D supplementation may be useful in some. [1] Antiinflammatories such as naproxen may help with physical symptoms. In those with more significant symptoms birth control pills may be useful. Diuretics have been used to handle water retention. Spironolactone has been shown in some studies to be useful.Hormonal contraception is commonly used. Gonadotropin-releasing hormone agonists can be useful in severe forms of PMS but have their own set of significant potential side effects. [10, 13]. SSRIs like fluoxetine, sertraline can be used to treat severe PMS [14]. Progesterone support has been used for many years but evidence of its efficacy is inadequate [15].Tentative evidence supports vitamin B6 and chasteberry. Evidence does not support the use of St. John's wort, soy, vitamin E, and saffron [1].

Temperament theory has its roots in the ancient four humors theory. It may have origins in ancient Egypt or Mesopotamia, but it was the Greek physician Hippocrates (460–370 BC) who developed it into a medical theory [16, 17]. He believed certain human moods, emotions and behaviors were caused by an excess or lack of body fluids (called "humors"): blood, yellow bile, black bile, and phlegm. Next, Galen (AD 129 – c. 200) developed the first typology of temperament in his dissertation De temperamentis, and searched for physiological reasons for different behaviors in humans. He classified them as hot/cold and dry/wet taken from the four elements [18]. There could also be "balance" between the qualities, yielding a total of nine temperaments. The word "temperament" itself comes from Latin "temperare", "to mix". In the ideal personality, the complementary characteristics or warm-cool and dry-moist were exquisitely balanced. In four less ideal types, one of the four qualities was dominant over all the others. In the remaining four types, one pair of qualities dominated the complementary pair; for example, warm and moist dominated cool and dry. These latter four were the temperamental categories Galen named "sanguine", "choleric", "melancholic" and "phlegmatic" after the bodily humors, respectively. Each was the result of an excess of one of the humors that produced, in turn, the imbalance in paired qualities(19, 20).

In his Canon of Medicine (a standard medical text at many medieval universities), Persian polymath Avicenna (980–1037 AD) extended the theory of temperaments to encompass "emotional aspects, mental capacity, moral attitudes, self-awareness, movements and dreams." [21]

Nicholas Culpeper (1616–1654), described the humours as acting as governing principles in bodily health, with astrological correspondencesand explained their influence upon physiognomy and personality [22].

Four temperaments is a proto-psychological theory that suggests that there are four fundamental personality types, sanguine (enthusiastic, active, and social), choleric (short-tempered, fast, or irritable), melancholic (analytical, wise, and quiet), and phlegmatic (relaxed and peaceful). Most formulations include the possibility of mixtures of the types. The Greek physicianHippocrates (c. 460 – c. 370 BC) incorporated the four temperaments into his medical theories as part of the ancient medical concept of humorism, that four bodily fluids affect human personality traits and behaviors. Later discoveries in biochemistry have led modern medicine science to reject the theory of the four temperaments, although some personality type systems of varying scientific acceptance continue to use four or more categories of a similar nature [22, 23].

The most important rule of all the ancient theories was the maintenance of the balance between the fundamental body elements, among which Warmth and Coldness played an absolutely essential role. In the humoral theory, in which people are categorized regarding their dominant body fluid, the people with a dominant Hot humor (sanguine temperament that is Hot and Moist and choleric temperament that is Hot and Dry) were considered to have a Hot nature, and the people with a dominant Cold humor (melancholic temperament that is Cold and Dry and Phlegmatic temperament that is Cold and Moist) were considered to have a cold nature(24-26). This categorization is performed regardless of whether a person is healthy or

sick, infant or advanced in years, and takes account of a unique combination of all his/her inherited and concrete traits and concrete conditions of his/her living and activities [27].

Hence the imbalance of bowel movements as one of the most important reasons for the incidence of various diseases is considered physical. based on the theory Traditional medicine of the balance of these four bowel movements determine the temparement of a person. Based on the opinions of traditional medicine, temparament of a person can determine his mental and emotional and physical properties of the individual [28, 29].

According to the study of MohebbiDehnaviand colleagues (2014) the symptoms of premenstrual syndrome is different in people with hot and cold temperament [3].

Due to the prevalence of premenstrual syndrome and the importance of women's problems and don't found the study for the prevalence of the severity of the symptoms of premenstrual syndrome in hot and cold temperament, , the researcher decided to study The prevalence of physical and psychological symptoms the severity of premenstrual syndrome in hot and cold temperament.

Materials and methodology: We conducted this study for 2 months on the dorm students of Mashhad University of Medical Sciences in the academic year 2014-15. A statistics consultant estimated the sample size as 70 individuals in each group according to Azhariet al. study and by taking into account $\alpha = 0.05$ and $\beta = 0.2$ with the inclusion of sample loss. The sampling was based on simple random sampling method and the individuals were assigned even and odd numbers and thus, were divided into two groups.

The requirements to be included in the study were as such: the individual must be a student and a resident of dormitory with 20-40 years of age, 21-35 days regular cycles with a 10-3 days period of bleeding, with premenstrual syndrome according to two standard questionnaires of temporary determination of premenstrual syndrome and recorded daily symptoms of premenstrual syndrome, the individual must not be pregnant, without chronic (renal, respiratory, cardiac, diabetes, hypertension, asthma, headache, migraine, thyroid, anemia, neuro-psychological) disease, , no stressful and unpleasant incident during the past 3 months,; and the criteria to exclude from the study included: unwillingness to continue the research, pregnancy during the study, irregular menstrual cycles during two months, failing to fill the questionnaire of recorded daily symptoms of premenstrual syndrome (3 consecutive days and 5 intermittent days), and occurrence of bad and stressful incident during the study. The tools that we used included the questionnaire for overall profile of the participants and personal and midwifery particulars (we compiled the questionnaire with regard to the objectives of the research and study of the latest related resources and articles and after consultation with supervisors and advisers) and included 19 questions, 6 questions about personal particulars, 10 questions about midwifery and menstrual particulars, and 3 questions about the daily diet. This questionnaire included variables whose impact were measured in this research.

We used the content and formal credibility method to determine the validity of the questionnaire to select the research units, and the personal and midwifery particulars such that the questionnaires were presented to 10 members of the Midwifery Faculty in Mashhad University of Medical Sciences and all 10 members announced their corrective feedback. Some of the modifications were adding two questions to the research unit selection form and adding three questions related to diet to personal and midwifery particulars section.

Because in the present study the questionnaire of the checklist of research unit selection and general particulars and midwifery and personal particulars were objective and their reliability had been repeatedly determined in numerous studies, so there was no need to check the reliability of the questionnaire again).

The questionnaires of temporary determination of premenstrual syndrome (set temporary premenstrual syndrome) (the validity of this questionnaire was confirmed in 2013 by Shakeriet al.) [5] We measured the reliability of this questionnaire according to the re-test method and the Spearman–Brown correlation coefficient as 0.79).

Beck Depression Inventory- (This questionnaire with regard to the study by Jafarnejadet al. is a valid and reliable tool. A study by Jafarnejadet al. has mentioned that Beck et al. in 1996 obtained the credibility coefficient of the test, re-test, in a weekly interval as 0.93. A study by AhmadiTahoor in 2009 confirmed its content validity(5).

Recorded daily symptoms of premenstrual syndrome-(The validity of this questionnaire was confirmed in 2013 by jafarnejadet al.) [5]. The reliability of this questionnaire was by Cronbach's alpha Internal consistency, and the reliability coefficient was calculated as 0.77).

Determine temperament- (This questionnaire with regard to the study by mojahedyet al. is a valid and reliable tool.) [30]

In the first stage, the informed consent form and research unit selection form (including entry and exit criteria for the study) were submitted to 120 volunteers and they were completed in the presence of the researcher. Next, the volunteers who were qualified to be included in the research were identified, and in the second stage, in the timeframe of the first 7 days after menstruation, the researcher visited the research units and submitted the Beck depression questionnaire, temperament questionnaire and the temporary determination of premenstrual syndrome questionnaire to be filled in the presence of the researcher. Upon completion of the questionnaires, the individuals who scored below 40% in depression questionnaire (the questionnaire included 21 phrases that were rated according to Likert scale and the overall score was 0 to 63) and had experienced 5 symptoms out of 11 symptoms of temporary determination of premenstrual syndrome questionnaire and one of those symptoms was among the first 4 symptoms of the questionnaire were selected as research units and In the third stage, the research units were obligated to prospectively record the daily intensity of their symptoms for 2 consecutive cycles

in the daily recording form (including physical and psychological symptoms of premenstrual syndrome). During this time, the researcher made phone calls twice a week to remind the research units to regularly fill the forms and encouraged them to complete the form.
At the end of the study, only 65 research units submitted the filled questionnaires. In the end, the obtained data were coded and then analyzed by SPSS22 software, descriptive statistical tests.

**Findings**
At the beginning of the study, 70 individuals entered the study and 65 followed through to the end of the study and 5 individuals were excluded from the study due to their conditions that required so. The average age of the participants was 22/25 ± 41/4. The severity of the symptoms of premenstrual syndrome, from 0 (without the symptoms), 1 mild (synmptoms but without causing a significant problem), 2 medium (interferes with the usual activities), extreme 3 (unacceptable, incapable of doing usual life activities)
We conducted statistical analysis and reviews on the premenstrual syndrome symptoms in accordance with the special objectives:
-The results of the descriptive statistical tests showed that the prevalence of the severity of physical and psychological symptoms of syndrome is different in hot and cold temperament.).
was recorded by the people that the results showed of the symptoms of premenstrual syndrome in two (Table 1).
Friedman test were significantly reduced in the intervention group 8 weeks after aerobic exercises compared with the control group (p = 0.001).
-The results of the Friedman test showed that psychological symptoms of premenstrual syndrome were significantly reduced in the intervention group 8 weeks after aerobic exercises compared with the control group (p = 0.001). (Table 2)

**Table 1:** prevalence of the severity of the physical symptoms of premenstrual syndrome in hot and cold temperament

| **physical symptoms** | **prevalence of the severity of the symptoms in cold temperament** | | | | **prevalence of the severity of the symptoms in hot temoerament** | | | |
|---|---|---|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | **0** | **1** | **2** | **3** |
| **Acne** | 16/7 | 33/1 | 20 | 60 | 37/1 | 11/4 | 8/6 | 42/9 |
| **bloating** | 50 | 6/7 | 43/3 | 0 | 91/4 | 2/9 | 5/7 | 0 |
| **breast tenderness** | 6/7 | 0 | 16/7 | 76/7 | 2/9 | 2/9 | 17/1 | 77/1 |
| **dizziness** | 66/7 | 0 | 13/3 | 20 | 2/9 | 2/9 | 11/4 | 82/9 |
| **headache** | 53/3 | 10 | 3/3 | 33/3 | 28/6 | 5/7 | 17/1 | 48/6 |
| **flushing** | 50 | 0 | 0 | 50 | 31/4 | 5/7 | 8/6 | 54/3 |
| **nausea diarrhea, constipation** | 53/3 | 0 | 20 | 26/7 | 8/6 | 2/9 | 20 | 68/6 |
| **flurry** | 23/3 | 3/3 | 6/7 | 66/7 | 48/6 | 0 | 8/6 | 42/9 |
| **swelling** | 30 | 3/3 | 16/7 | 50 | 14/3 | 0 | 28/6 | 57/1 |
| **A passion for a specific food (salinity, sweets)** | 46/7 | 16/7 | 13/3 | 23/3 | 31/4 | 5/7 | 14/3 | 54/3 |
| **increased appetite** | 13/3 | 10 | 6/7 | 70 | 37/1 | 2/9 | 14/3 | 45/7 |

**Table 2:** the prevalence of the intensity of the psychological symptoms of premenstrual syndrome in hot and cold temperament

| psychological symptoms | prevalence of the severity of the symptoms in cold temperament | | | | prevalence of the severity of the symptoms in hot temperament | | | |
|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 0 | 1 | 2 | 3 |
| Anger outbursts and violent tendencies | 50 | 6/7 | 26/7 | 16/7 | 60 | 2/9 | 23/9 | 14/3 |
| worry, tension, nervousness | 40 | 6/7 | 40 | 13/3 | 62/9 | 0 | 25/7 | 11/4 |
| easily crying | 50 | 0 | 40 | 10 | 45/7 | 2/9 | 31/4 | 20 |
| depression | 33/3 | 0 | 53/3 | 13/3 | 31/4 | 2/9 | 40 | 25/7 |
| amnesia | 50 | 0 | 40 | 10 | 40 | 2/9 | 37/1 | 20 |
| Excitability | 46/7 | 3/3 | 33/3 | 16/7 | 54/3 | 0 | 25/7 | 20 |
| Mood swings | 0 | 10 | 60 | 30 | 48/6 | 9/2 | 43/3 | 14/3 |
| Getting too sensitive | 26/7 | 6/7 | 60 | 6/9 | 62/9 | 8/6 | 5/7 | 22/9 |
| lonely | 53/3 | 6/7 | 23/3 | 16/7 | 51/4 | 8/6 | 20 | 20 |
| Confusion and poor concentration | 83/3 | 16/7 | 0 | 0 | 100 | 0 | 0 | 0 |

**Discussion**

the results showed that the physical symptoms of premenstrual syndrome, hot flashes, nausea, headache, dizziness, diarrhea-constipation, swelling, a passion for food into warm temperament and acne, palpitations, increased appetite into cool temperament occurs with the highest score (score 3). While the prevalence of breast sensitivity is the same in both groups.

It also the results showed of the psychological symptoms of premenstrual syndrome, easily crying, depression, amnesia, mood swings, too sensitive, tend to be weak or disoriented, lonely, Confusion and poor concentration occurs more on the prevalence and severity of score 2 in cold temperament.

Mollakazemy in his study on the role of medicine in Moral excellence (Moody science)(2012) showed The symptoms of people with hot temperament include turmoil, sleight, early understanding, indecency, optimism, callousness, dexterity, good memory, entitlement, has the power of the above analysis, the brave, the body heat and The symptoms of people with cool temperament include :low composition, Being a coward, wary, cams, Quiet, Delay function, late understanding, shame, cynicism, despair, depression, memory does not have a good talent, sleepy(31). that in this study the results showed of the symptoms of premenstrual syndrome flashes in hot temperament and low composition can be seen more in cold temperament.

Also Avicenna discribes people with cold temperament are calm and have low composition and people with hot temperament are at least considering of environment and turmoil of the body(24). The results of this study showed of the symptoms of premensterual syndrome in cold temperament has low composition and The turmoil and warmly can be seen more in hot temperament.

Ahanchi discribes the symptomes of cold temperament includes: Fatigue, weakness, feeling cold, dry skin, hair loss, shortness of breath, peripheral edema, bradycardia, impaired concentration and memory weakness and hot temperament includes: Attention deficit hyperactivity disorder, Excitability, Heat intolerance, flurry, Hot and dry skin, tachycardia(32).

The results of this study showed of the symptoms of premensterual syndrome in cold temperament has amnesia and Hot flashes and irritability can be seen more in hot temperament.

Mohebbi dehnavi and Colleagues showed symptoms of pre mensterual syndrome is different In the hot and cold temperament And symptoms such as hot flashes and palpitations, entitlement and anger more seen in hot temperament and in the cold temperament more seen loneliness, depression, confusion, poor focus [3].

Confirmation of the importance of the Warmth or Coldness of foods, advocated by many traditional medical theories, may be one of the other conclusions of the present study. If, as the results of this study indicate, the intensity of Warmth or Coldness of nature has different effects on homeostasis, it is highly possible that Hot or Cold nature substances have

such an effect as well, because Hot nature substances accelerate Warmth of nature, and Cold nature substances accelerate Coldness of nature in people. Therefore, paying due attention to the nature of the diet of patients may be important for the treatment of their diseases and to prevent their acceleration. In addition, such an observance of the diet of healthy persons dominated by Cold or Hot nature may be useful for maintaining homeostasis and preventing many diseases.

The results of the studies is a paradox on the factors influencing premenstrual syndrome and temperament determines characteristics of individuals and mental and emotional.

It can be concluded temperament is one of the factors affecting the prevalence of the severity of the symptoms of premenstrual syndrome, which so far has not been studied for this reason it is recommended more studies and with More sample number and with split into dry and wet to the subgroup.

**Conclusion**

The results of this study showed that The prevalence of the severity of the symptoms of premenstrual syndrome is different in hot and cold temperament.

**Acknowledgment**

This work was supported by the research deputy of Mashhad University of Medical Sciences.. Hereby, we express our sincere appreciations and gratitude for the research deputy of Mashhad University of Medical Sciences due to funding this research, also respected officials of students' dormitory of the University of Medical Sciences, and all students who were cooperating with us in this project.

**Reference**

1. Biggs W, Demuth R. Premenstrual syndrome and premenstrual dysphoric disorder. American family physician. 2011;84(8):918-24.
2. Jafarnejad F, Mohebbi Dehnavi Z, Mojahedy M, Shakeri M, Sardar M. Effect of Aerobic Exercise Program on Premenstrual syndrome in Women of Hot and Cold Temperaments. J Babol Univ Med 11 Sci. 2016;18(8).
3. Mohebbi Dehnavi Z, Jafarnejad F, Mojahedy M, Shakeri M, Sardar M. The relationship between temperament warm and cold with symptoms of premenstrual syndrome. IJOGI. 2016;18(179):17-24.
4. Merck Manual Professional - Menstrual Abnormalities. 2007.
5. Jafarnejad F, Shakeri Z, Najaf Najafi m, Salehi fadradi n. Evaluation the Relationship between Stress and the Risk of Premenstrual Syndrome. Iranina Journal of Obstetrics Gynecology and Infertility 2013;76(114).
6. Amiri Farahani. L, Heidari. T, Narenji. F, Asghari Jafarabadi. M, Shirazi. V. Relationship between Pre Menstrual Syndrome with Body Mass Index among University Students. 2012.
7. Mosallanejad Z, Gaeini Abbas A, Mosallanejad L. The effect of continuous aerobic exercise on premenstrual syndrome:a randomized clinical trial. Tehran University Medical Journal. 2007;65(1):49-53.
8. Samadi Z, Taghian F, Valiani M. The effects of 8 weeks of regular aerobic exercise on the symptoms of premenstrual syndrome in non-athlete girls. Iran J Nurs Midwifery Res. 2013;18(1):9-14.
9. Premenstrual syndrome (PMS): Signs and symptoms. MayoCliniccom. 2007:02-.
10. Dickerson LM, Mazyck PJ, Hunter MH. Premenstrual syndrome. Am Fam Physician 2003;67(8):43-52.
11. Johnson S. Premenstrual syndrome, premenstrual dysphoric disorder, and beyond: a clinical primer for practitioners. Obstet Gynecol 2004;104(4):845-59.
12. Johny M, Kumar S, Rajagopalan A, Mukkadan J. Vestibular stimulation for management of premenstrual syndrome. J Nat Sci Biol Med. 2017;8(1):82-6.
13. Schmalenberger K, Eisenlohr-Moul T, Surana P, Rubinow D, Girdler S. Predictors of premenstrual impairment among women undergoing prospective assessment for premenstrual dysphoric disorder: a cycle-level analysis. Psychol Med. 2017;14:1-12.
14. Brown J, O' Brien P, Marjoribanks J, Wyatt K, Marjoribanks J, Wyatt K. "Selective serotonin reuptake inhibitors for premenstrual syndrome". Cochrane database of systematic reviews. Brown, Julie, ed. 2009.
15. Ford O, Lethaby A, Roberts H. Progesterone for premenstrual syndrome The Cochrane database of systematic reviews Mol, BW. 2012.
16. van Sertima I. The Golden Age of the Moor. Transaction Publishers. 1992.
17. Sudhoff K. Essays in the History of Medicine. Medical Life Press, New York. 1926;67(87):104.
18. Boeree C, George. Early Medicine and Physiology. 2013.
19. Osborn L, David K. INHERENT TEMPERAMENT. 2013.
20. Kagan J. Galen's Prophecy: Temperament In Human Nature. New York: Basic Books. 1998.
21. Lutz P. The Rise of Experimental Biology: An Illustrated History. Humana Press. 2002.
22. Nicholas C. Semeiotica Urania, or Astrological Judgement of Diseases. london Reprint, Nottingham: Ascella. 1994.

23. Nicholas C. An Astrologo-Physical Discourse of the Human Virtues in the Body of Man, transcribed and annotated by Deborah Houlding. Skyscript. Originally published in Culpeper's Complete Herbal (English Physician) London: Peter Cole. 2009.
24. Ibn Sina H. al-Qanun in pharmacology correction A. Masoudi. Tehran Alma Publishing. 2002;2:662-4.
25. Khosravi S. Traditional Medicine of Sina, 4 ed. [In Persian]. Tehran: Muhammad Publication. 1997.
26. Jorjani S. Medical Goals and Allaii's Discussions (Al Aghraz Al Tebbia Val Mabahess Al-Alaiia). [In Persian]. Tehran: The Academy of Sciences of IR of Iran. 2005.
27. Abduvaliev A. Modern views on the theory of nature (mizadj) by ibn sina in medicine. Lik Sprava. 2003;3(4):102-5.
28. Shahidi S, Shirafkan S. Psychotherapy and Spirituality. Tehran:Roshad Publication. 2003.
29. Chamanzari H, Saghebi A, Harati KH, Hoseini MR, Zarghi N, Mazlom R. Evaluation of Temperament–based diet education on Quality of Life in patients with GERD. Evidence Based Care. 2014;4(9).
30. Morteza M, Mohsen N, Reza M, Mansoor K, Mohammad E, Esmaeil N, et al. Reliability and Validity Assessment of Mizaj Questionnaire: A Novel Self-report Scale in Iranian Traditional Medicine. Iran Red Crescent Med J. 2014;16(3).
31. Mollakazemi. M. the role of medicine in the moral. Journal of Moral Education. 2013(34).
32. Ahanchi o, Saeedimehr m. Rereading the Concept of Temperament Based on the Modern Medicine. J Science Philosophy. 2011;1(2):1-23.
33. Dehnavi ZM, Jafarnejad F, Kamali Z. The Effect of aerobic exercise on primary dysmenorrhea: A clinical trial study. J Edu Health Promot [serial online] 2018 [cited 2018 Mar 1];7:3. Available from: http://www.jehp.net/text.asp?2018/7/1/3/22274937