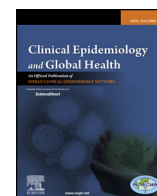




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Original article

## The relationship between warm and cold temperament and dysmenorrhea

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### ABSTRACT

**Background:** Dysmenorrhea or painful menstruation is one of the most important common health problems in women. Improving temperament could decrease painful menstruation by decreasing menstrual blood flow. The aim of this study is to investigate the relationship between warm and cold temperament and dysmenorrhea among Iranian female students.

**Methods:** This is a cross-sectional analytical study which was conducted on 112 nursing and midwifery female students. The data were obtained by two questionnaires. The first questionnaire contained questions about the general characteristics of the participants, obstetrical information and menstruation pattern (including bleeding severity) and pain ruler. Finally, the data were analyzed by SPSS software version 16 using mean, standard deviation) and chi-square. P-value less than 0.05 was considered significant.

**Results:** The mean age of participants was  $20.26 \pm 0.91$  and the average May be number of consumed pads was  $3.25 \pm 1.42$ . Pain had been started less than one year after the onset of the first menstruation (46.4% of participants), 1–3 years after onset of menstruation (17.9%), and more than three years after onset of menstruation (35.7%). Also, the results of this study revealed a significant relationship between pain severity and temperament, in addition, severe dysmenorrhea was seen in 66.7% of people with cold temperament ( $p = 0.001$ )

**Conclusion:** The results of this study showed that the pain is more observable in cold temperament group, therefore we can empower the gynecologists, midwives and nurses in this field by practical training for them and accordingly contribute to reduce the use of chemical drugs by women with primary dysmenorrhea as well as increasing their efficacy in daily activities and improving their quality of life and their physical and mental health.

### 1. Introduction

Dysmenorrhea or painful menstruation is one of the common health problems in women. It is derived from a Greek word, in which 'dys' means pain, 'meno' means the moon, and 'rrhea' means 'flow'. In total, it means a painful monthly flow of blood. Dysmenorrhea is a pain with uterine contractions in the lower abdomen that is sometimes associated with suprapubic cramp and low back pain in lumbosacral area. The pain spread to anterior thigh with nausea, vomiting, depression, headache and diarrhea. The occurrence of this pain is usually few hours before the starting time of the menstrual cycle and might continue a few hours after this. It is due to an increase in the level of prostaglandins and uterine contractions.<sup>1–4</sup> Wong and Khoo (2010) revealed that prevalence of painful menstruation in Asian teenage girls was 74.5%.<sup>5</sup>

In addition, 79%<sup>6</sup> of Indian girls and 74.3%<sup>7</sup> of the Lebanon girls had dysmenorrhea. It is also reported that its prevalence in different cities of Iran is ranged from 64.9 to 74.2%.<sup>8</sup> There are two kinds of dysmenorrhea: primary and secondary types. Primary dysmenorrhea is the pain in the absence of pelvic pathology due to uterine contractions in menstrual cycle.<sup>9,10</sup> Primary dysmenorrhea leads to many psychological and economic consequences and might have detrimental impacts on the young women's quality of life and their social activity in a way that is the most important cause of the loss of work and school time. For this reason, it led to loss of millions of work hours and billions of dollars each year.<sup>11–14</sup> The results of the previous studies reported some experience which limited an activity in women with this type of dysmenorrhea as 53 to 66% and experience work or school absenteeism as 31 to 42.1%.<sup>15–17</sup>

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Temperament literally means intermingling. In traditional medicine in Iran, it is a fundamental concept in defining human health and disease, also it is considered as turning point in determining physiopathology of diseases.<sup>18</sup> The human body consists of four elements such as air, water, soil and fair. The proportion and amount of these elements in component cause four Temperament like cold, warm, wet and dry in the person's body.<sup>19</sup>

The temperament regulates the physical and mental actions of each individual for a specific purpose, which is the preservation of life that is genetically inherited and controlled by the neurohormonal system and regulates the individual's response to external and internal environmental factors.<sup>20</sup> Dysmenorrhea is like a genetic disorder that is affected by the neurohormonal system.<sup>21</sup> In this regard, studies have been conducted on the relationship between temperament and some gynecological diseases. In Sohrabvand et al. (2014) study showed that there is a significant relationship between personal temperament and uterine temperament. Cold temperament in infertile women and cold wet temperament in the infertile women's uterus are common.<sup>22</sup> Since dysmenorrhea is one of the most common pelvic pain,<sup>21</sup> and according to the Cloninger model, the experience of pain in individuals depends on biological interaction, individual differences, and specific personality traits, many studies using the same model have described the association between temperament and severity of pain. As an illustration, Fachin et al.'s (2016) study showed that there is a relationship between the severity of chronic pelvic pain due to endometriosis and the type of temper.<sup>23</sup> According to the results of the studies, temperament is an influential factor in various physical conditions and diseases. On the other hand, menstrual cycles are one of the most important influential periods of women's life and in most cases, they disrupt their daily activities. Therefore, the present study aimed to determine the relationship between type of temperament and severity of bleeding and dysmenorrhea.

## 2. Methods

### 2.1. Design and subjects

This is a cross-sectional analytical study which is conducted on 112 female elementary students of Nursing and Midwifery Faculty of in Shahrekord in 2018. This project was approved by the Ethics Committee of Shahrekord University of Medical Sciences by the code of IR.SKUMS.REC.1397.169. Sampling started after obtaining the necessary permissions from the Research Committee.

The inclusion criteria of the study included female students of Shahrekord University of Medical Sciences, willingness to participate in the study, being single, age between 20 and 40 years, regular 21–35 day menstrual cycles with a duration of 3–10 day bleeding, primary dysmenorrhea, no pregnancy, no chronic diseases (hypertension, heart, kidney, respiratory tract, asthma, headache, migraine, thyroid, anemia, nervous system and psychosis diseases), the lack of continuous use of drugs (antihistamines, antihypertensive, antidepressant, anticholinergic, hormonal drugs), and non-use of traditional medicine methods to reduce symptoms (acupuncture and herbal medicines). The exclusion criteria also included non-willingness to continue, abnormal menstrual cycle over the past two months, and regular exercise for more than 7 h per week. Sampling was done using census method from all female students of Shahrekord Nursing and Midwifery Faculty.

### 2.2. Data collection tool

Two questionnaires were used in this study. The first questionnaire contained questions about the general characteristics of the participants and 12 questions related to obstetrical information and menstruation pattern (including bleeding severity) and one question on pain ruler. The score lower than 4 in this ruler indicates mild dysmenorrhea, the score between 4 and 7 indicates moderate dysmenorrhea, and the score

between 8 and 10 indicates severe dysmenorrhea. To determine the level of bleeding, the volume of bleeding in the first 3 days of the menstrual cycle was evaluated. If one cloth pad was completely stained with blood during 2 h, it was considered as severe bleeding, if two-third of the cloth pad was completely stained with blood, it was considered as moderate bleeding, and if two-third of the cloth was completely stained with blood, it was considered as mild bleeding. This questionnaire was approved by Nasri et al., in 2015 with a content validity and reliability of 91%.<sup>24</sup>

The second questionnaire was related to the type of temperament and included 8 objective items scored from one to three. A score greater than or equal to 19 was considered as a warm temperament and a score less than or equal to 14 was considered as a cold temperament, and a score between 15 and 18 suggests moderate temperament.

The validity of this questionnaire was approved by Mohebbi et al., in 2013. The reliability of this questionnaire was estimated 0.82 through test-retest method by Spearman-Brown correlation coefficient ( $P < 0.05$ ).<sup>25</sup>

### 2.3. Data analysis

Finally, the data were analyzed by SPSS software (version 16) using descriptive statistics (mean, standard deviation, Chi-square) and inferential statistics (Chi-square). P-value less than 0.05 was considered significant.

## 3. Results

The mean age of participants was  $20.26 \pm 0.91$  and mean age of menstruation onset was  $13.25 \pm 1.01$ . Pain had been started less than one year after the onset of the first menstruation in 46.4% of participants, 1–3 years after onset of menstruation in 17.9% of them, and more than three years after onset of menstruation in 35.7% of them. The menstrual cycle was abnormal in 64 patients (58.2%) and regular in 48 patients (42.8%). Moreover, 38.4% of the subjects had severe pelvic pain, 0.33% had severe low back pain, 0.17% had severe leg pain, 0.8% had nausea and vomiting, 1.7% had diarrhea and 0.8% had dizziness.

Among the studied samples, 95 (84.8%) had cold temper and 17 (16.2%) had hot temper. The results of this study revealed a significant relationship between pain severity and temperament, so that severe dysmenorrhea was seen in 66.7% of participants with cold temperament ( $p = 0.001$ ) (Table 1).

## 4. Discussion

The purpose of this study was to investigate the relationship between hot and cold temperament and dysmenorrhea among female students of Nursing and Midwifery Faculty of Shahrekord, Iran. The results of the study by Adhami et al. showed that the majority of patients (73.7% in case group and 26.3% in control group) had cold tempered vaginitis.<sup>26</sup> In Soltana et al.'s study, 68.33% of people were cold tempered.<sup>27</sup>

According to the results of the present study, there was a significant relationship between individuals' pain characteristics (severity and duration) and type of temper. However, Vecina has listed two causes for physical pain. 1 – Diffraction connection: Diffraction means

**Table 1**  
Relationship between pain severity and temperament.

| Temperament/Pain Severity | Mild     | Average  | Severe   | p-value   |
|---------------------------|----------|----------|----------|-----------|
| Cold                      | 2(7.4)   | 7(25.9)  | 18(66.7) | P = 0.001 |
| Mild                      | 18(26.5) | 28(41.2) | 22(32.4) |           |
| Warm                      | 3(17.6)  | 12(70.6) | 2(11.8)  |           |

dispersion and connection means continuity. In the texts, this combination refers in general to any disruption that occurs in any singular or composite member, which is specifically named after its context and location. Maltemper: A contradiction arises between the member's major temperament and the maltemper on which the simple cold maltemper itself, causing the components to be pulled apart by creating contraction and proliferation.<sup>28,29</sup> In this regard, the findings of Fachin et al.'s (2016) study showed that there is a relationship between the severity of pelvic pain due to endometriosis and the type of temperament.<sup>23</sup> The positive association between temperament and pain profiles in a variety of diseases has been demonstrated in many studies. As an example, headaches in the study of Senches-Roman et al.,<sup>30</sup> the association of temperaments with muscle pain in Melmegren et al.'s study<sup>31</sup> and patients with fibromyalgia in Guerensy-Kenney et al.'s study.<sup>32</sup> On the other hand, the results of the study by Nuster et al. (2012) showed that temperament assessment can enhance the professionals' understanding of pain and behavioral experience in patients with chronic pain.<sup>33</sup> A study by Granott et al. in women with Vestibulitis Velar<sup>34</sup> described the association between severity and duration of pain with temperament, so it is likely that physical pain may be alleviated by assessing temperament and improving maltempered.

According to the results of this study, there was a significant relationship between dysmenorrhea and temperament. The warmer the temperament, the less severe the severity of dysmenorrhea; Cold temperament increases the potassium level of the blood, causing viscosity and obstructions, which make the blood not easily withdrawn from the uterus, and the uterine response also increased by muscle contractions, thereby causing pain during menstruation and prolonging its duration.<sup>35,36</sup> The results of a study by Zafarghandi et al., Which aimed to evaluate the frequency of positive symptoms of abnormalities from the perspective of Iranian medicine in patients with increased uterine hemorrhage, showed that most of them have cold temperament, it was found that the majority of affected individuals had cold temperament, so that temperament is an influential factor in identifying the pathogenesis of uterine diseases.<sup>19</sup> A study by Mohebbi et al. showed that in cold temperament people with premenstrual syndrome, the symptoms are more likely presented as bloating, nausea, diarrhea, constipation, increased appetite, forgetfulness, irritability, tendency alone, and appeared as, dizziness and hot flashes and over-sensitivity in hot tempered individuals.<sup>37</sup> Also, the results of Jafarnejad et al. (2016) and Shakeri et al. (1396) study revealed that aerobic exercise reduces physical and psychological symptoms of PMS in warm and cold temperaments but the most significant decrease is observable in cold temperaments.<sup>38,39</sup> A review of traditional medicine texts suggests that temperament correction can affect physical and psychological symptoms. Tabatabai et al. (2016) also found that there was a significant relationship between temperament correction and severity of migraine headaches.<sup>40</sup> The results of the study by Conrad et al. (2013) also showed that patients with chronic pain have a common personality and temperament and can improve the process of treatment by determining the type of temperament and personality by using indicators and modifying it.<sup>41</sup>

## 5. Conclusion

As temperament of each person affects the severity of his or her dysmenorrhea, the severity of dysmenorrhea can be reduced by applying appropriate therapeutic measures and modifying temperament imbalance. In addition, we can empower the gynecologists, midwives and nurses in this field by practical training of them and accordingly contribute to reduce the use of chemical drugs by women with primary dysmenorrhea and increase their efficacy in daily activities and improve their quality of life and their physical and mental health.

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## Declaration of competing interest

The authors declare that they have no conflict of interest.

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