

The Relationship of Cold and Hot Temperaments with Sexual Function among Women of Reproductive Age

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ABSTRACT

Background & aim: One of the most important factors for couples' happiness is having a good sexual function. One of the issues that affect couples' sexual function is their temperament. In this regard, the present study was conducted to determine the relationship of hot and cold temperaments with sexual function among women of reproductive age.

Methods: This descriptive-correlational study was conducted on 200 non-pregnant women aged 20-40 years referring to the health centers of Mashhad, Iran, in 2017. The study population was selected using convenience sampling technique. The data were collected using the temperament questionnaire, 21-Item Depression, Anxiety, and Stress Scale, Female *Sexual Function Index*, and Female Sexual Distress Scale. Data analysis was performed in SPSS software (version 16) using independent t-test, Mann-Whitney U test, and Spearman's rank-order correlation.

Results: Sexual function and all its subscales had a significant relationship with hot temperament. In this regard, the subjects with a higher score in sexual questionnaires had hot temperament ($P<0.05$). In addition, the total score of sexual function and subscales of libido, satisfaction, and pain during intercourse showed a significant relationship with cold temperament ($P<0.05$). The hot temperament subjects had a higher sexual function, compared to the cold temperament ones ($P<0.001$).

Conclusion: Based on the findings, women with hot temperament had a better sexual function, compared to the cold temperament ones. Consequently, the healthcare providers should pay more attention to women with cold temperament in order to promote their sexual function.

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Introduction

It is generally accepted that sexual health is one of the major factors affecting the sustainability of marital life. Desirable sexual function can be considered among the most significant elements determining couples' happiness (1). Sexual function is a real physiological-psychological experience that engages both brain and body. Sexual activity is also a pleasing bilateral communication to get

rid of emotional and physical stress. The sexual function cycle consists of libido, sexual stimulation, sexual satisfaction, and orgasm (2).

Lack of attention to sexual function can cause persistent and profound disorders in couples' relationship. Any unpleasant difference in this relationship leads to the feelings of deprivation, jealousy, suspicion, anxiety, quarrel-picking, blaming the other side for life problems,

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humiliation, exaggeration of problems, and hatred of the partner. The emergence of these feelings would ultimately result in a cold and spiritless life or marital life breakdown. This factor is the cause of 60-70% of divorces on average (3).

The rates of sexual function vary among women. For example, Leiblum et al. (2003) claimed that 25-63% of women suffered from such a dysfunction (4); however, Dobkin et al. (2006) reported this rate to be 25% (5). Mohammadi et al. (2008) found that 83% of the Iranian women had sexual dysfunction (6). In general, sexual behaviors are not identical in different individuals (7). It seems that an individuals' personality traits, interpersonal relationships, family conditions, social and cultural conditions, environment, background of sexual affairs, physical and mental health, temperament, and hormonal status affect his/her sexual function (8).

The term "temperament" literally means intermingling (9). In the Iranian traditional medicine, there are nine types of temperaments (i.e., cold, hot, moist, and dry known as singular temperament, as well as cold-moist, cold-dry, hot-moist, and hot-dry called compound temperaments, and finally moderate). There is no human being with a truly moderate temperament, and one of such temperaments is more or less dominant in each individual.

Accordingly, a fully moderate or singular temperament with a balanced mixture of two temperaments is rare (10). Among the factors determining the temperament, the hot and cold temperaments have been concerned and used more often as compared to the secondary ones. Accordingly, all individuals can generally be classified into two cold (i.e., cold, cold-moist, and cold-dry) and hot (i.e., hot, hot-moist, and hot-dry) groups (9).

The deficiency of temperament balance is one of the main causes of various diseases. According to the traditional medicine, the balance of these four tempers determines an individual's temperament. The dominance of each temper can determine the physical, psychological, and emotional attributes of a person (11). In a study performed by Mortazavi et al. (2013), marital conflicts were reported to increase with the enhancement of sexual frigidity (12).

In the same vein, McCup (1997) concluded that couples with more marital conflicts

reported higher sexual dysfunction (13). However, to the best of our knowledge, no research has investigated sexual function with respect to different temperaments. Regarding this, the present study was performed to determine the relationship of hot and cold temperaments with sexual function among the women of reproductive age.

Materials and Methods

This descriptive-correlational study was conducted on 200 women within the age range of 20-40 years referring to five health centers in Mashhad, Iran, to receive maternity and child health services, vaccination, and family planning counseling in 2017. This study was approved by the Ethics Committee of Mashhad University of Medical Sciences, Mashhad, Iran. After obtaining a written introduction letter from the Faculty of Nursing and Midwifery of Mashhad University and making necessary coordination with the authorities of the concerned health centers, the researchers performed sampling using the convenience sampling technique.

Given the lack of similar articles on the relationship between sexual function and temperament, the sample size was estimated as 100 cases at the confidence intervals of 99% and 90% based on a study performed by Mortazavi et al. (2013). Regarding the issue under investigation and the possibility of further discussions about the temperament subcategories, 200 participants were included in the study.

The inclusion criteria were: 1) involvement in the first marital life, 2) having a sexual partner, 3) inhabitation in the same place with the husband, 4) no sexual dysfunction in husband, 5) no pregnancy, lactation, or intention to become pregnant, 6) a minimum interval of three months from child delivery, 7) non-consumption of traditional medicine to promote sexual function, 8) diagnosis of no medical illness in couples, 9) lack of mental illnesses, 10) non-use of mental health medications by couples, 11) no severe stressful incidents during the study, 12) lack of vaginal infections, 13) non-use of vaginal creams, and 14) willingness to participate in the study. On the other hand, the participants with sexual distress, moderate temperament, or stress, depressions, and anxiety scores greater than or equal to 25, 20, and 14,

respectively, were excluded from the study.

After receiving the participants' written informed consent and ensuring them about the data confidentiality, the participants completed the questionnaires individually in the presence of the researchers. The data collection instruments included a demographic form, a temperament questionnaire, 21-Item Depression, Anxiety and Stress Scale (DASS-21), Female Sexual Function Index (FSFI), and Female Sexual Distress Scale (FSDS).

Demographic form contained 8 items regarding personal attributes, the effects of which were measured in this study. These variables included age, age of the last child, age of marriage, duration of marriage, gravidity, number of children, type of child delivery, and frequency of sexual intercourse per month.

Temperament questionnaire consists of 10 items, the first 8 items of which facilitate the determination of the hot or cold temperament, and the last two assess the moist and dry temperaments. Each item was rated on a Likert scale (14). In this study, only the first eight items were employed, and individuals with moderate temperament were excluded from the study. In this instrument, the scores of ≤ 14 and $19 \leq$ for the first eight items represent having cold and hot temperaments, respectively.

The validity of this questionnaire was confirmed by Mojahedi et al. in 2013 (14). Furthermore, the reliability of this tool was estimated as 82% using the test-retest method and Spearman-Brown correlation coefficient by Jafarnejad et al. (2015) (15). In the present study, the content validity of the questionnaire was also confirmed. The reliability of this instrument was also measured by means of test-retest method. To this end, ten participants completed the questionnaire with a 10-day interval, rendering a Spearman-Brown correlation coefficient of 0.92.

The Female Sexual Function Index, developed by Rosen et al. (2000), contains 19 items in 6 subscales, including libido, sexual stimulation, vaginal moisture, orgasm, pain during intercourse, and sexual satisfaction. The items in the libido and sexual satisfaction subscales are rated on a 5-point Likert scale (ranging within 1-5), and the other items on sexual stimulation, vaginal moisture, orgasm, and pain during intercourse were scored on a 6-point Likert scale

(ranging within 0-5).

Score 0 indicates that the person has had no sexual intercourse during the past four weeks. In order to obtain the total score of the questionnaire, each subscale is multiplied by certain numerical coefficients (i.e., 0.6 for libido, 0.3 for sexual stimulation, vaginal moisture, and orgasms, and 0.4 for sexual satisfaction and sexual pain).

The libido subscale has a score range of 1.2-6, and the vaginal moisture, orgasm, sexual satisfaction, and sexual pain range within 0-6 with greater scores indicating lower amount of pain. The total scale had the minimum and maximum scores of 2 and 36, respectively (16). The validity of the Farsi version of this instrument in Iran was confirmed by Mohammadi in 2008 (17).

In the current study, the validity of this questionnaire confirmed using the content validity. The reliability of this tool was also approved by Mohammadi using internal consistency method and Cronbach's alpha coefficient, reporting a Cronbach's alpha coefficient of > 0.70 for the total scale and its subscales (17). In the present study, the reliability of this index was estimated as 0.89 using internal consistency method and Cronbach's alpha coefficient.

The FSDS entails three subscales, namely depression, anxiety, and stress, each of which included seven items. Each item is scored on a four-point Likert scale (ranging within 0-3). The final score of each subscale is obtained by summing up the scores of all items. The reliability of this scale was confirmed by Henry et al. (2005), reporting a Cronbach's alpha coefficient of 0.82 (18). In the current study, Cronbach's Alpha coefficients were estimated as 0.7, 0.75, 0.85, and 0.87 for the depression, anxiety, and stress subscales, and the whole scale, respectively.

Female Sexual Distress Scale contains 12 items rated on a 5-point Likert scale ranging from 0 (i.e., never) to 4 (i.e., always). In this scale, scores greater than 15 are used as a cut-off point for sexual distress. This questionnaire was first developed by DeRogatis et al. (2002) to measure individual sex-related distress in women. Its reliability was first confirmed by DeRogatis et al. (2002) using a test-retest

method with a one-week interval ($r=0.76$) (19). In this study, the reliability of this instrument was estimated as 0.93 using the internal consistency and Cronbach's alpha coefficient.

Firstly, the women who received sexual temperament scores of ≥ 19 and at least 14 were sexually considered to have hot temperament and sexual frigidity, respectively.

The participants were then examined in terms of sexual distress, depression, and anxiety. The subjects with the FSDS scores of < 15 and DASS-21 questionnaire score of ≤ 7 (i.e., sexual distress, moderate temperament, and stress, depression, and anxiety scores of ≥ 25 , 20, and 14, respectively) and those meeting the other inclusion criteria were included in the study. The FSFI was completed by the participants in both groups.

The data were analyzed using the SPSS

software, version 16. The normality of the data was investigated using the Shapiro-Wilk test. The mean and standard deviation were used to describe the data. Furthermore, Mann-Whitney U test, independent sample t-test, and Spearman's rank correlation coefficient were used to analyze the data. P-value less than 0.05 was statistically significant.

Results

According to the statistical tests, the two hot- and cold temperament groups were homogeneous in terms of the age, age of the last child, marriage age, duration of marriage, number of children, type of child delivery, frequency of intercourses per month, and sexual distress, stress, depression, and anxiety scores ($P<0.05$, Table 1).

Table 1. Mean distribution of participants in two groups with hot and cold temperaments based on demographic characteristics

Variable	Temperament		Sig.
	Hot temperament (n=100) SD Mean	Cold temperament (n=100) SD±Mean	
Age (year)	5.47±35.55	31.88±4.88	t=0.541 df=66 P*=0.591
Age of the last child (year)	1.13±4.27	4.67±1.60	z=-0.841 P**=0.401
Marriage age (year)	20.67± 3.70	19.65±3.65	z=-1.440 P**=0.150
Duration of marriage (year)	10.93±4.33	11.15±5.40	z=-0.309 P**=0.757
Gravidity	2.40±0.95	2.37±1.14	z=-0.406 P**=0.684
Number of vaginal delivery	1.95±1.28	1.75±1.29	z=-0.771 P**=0.441
Number of cesarean section	0.275±0.640	0.250±0.588	z=-1.051 P**=0.956
Number of children	1.95±1.28	1.97±6.51	z=-1.175 P**=0.240
Continuous of Table 1			
Frequency of intercourses per month	5.82±1.43	6.07±1.52	z=-0.800 P**=0.424
Sexual distress score	9.02±1.89	9.05±1.03	z=-0.404 P**=0.686
Sexual stress score	13.67±3.71	15.11±3.95	t=-1.549 df=66 P*=0.126
Sexual depression score	11.79±3.66	12.74±4.04	t=-1.0680 df=66 P*=0.289
Sexual anxiety score	10.85±2.04	11.02±2	z=-0.363 P**=0.716

P* Independent sample t-test P** Man-Whitney U test

Table 2. Relationship of cold and hot temperaments with the total score of sexual function and its subscales

Spearman coefficients and significance levels in Hot temperament score		Spearman coefficients and significance levels in Cold temperament score	
Total score of sexual function		Total score of sexual function	
Spearman' rank correlation coefficient	0.745	Spearman' rank correlation coefficient	0.269
Sig.	0.000	Sig.	0.016
Libido		Libido	
Spearman' rank correlation coefficient	0.529	Spearman' rank correlation coefficient	0.253
Sig.	0.000	Sig.	0.023
Sexual stimulation		Sexual stimulation	
Spearman' rank correlation coefficient	0.413	Spearman' rank correlation coefficient	0.112
Sig.	0.000	Sig.	0.323
Lubrication		Lubrication	
Spearman' rank correlation coefficient	0.269	Spearman' rank correlation coefficient	0.199
Sig.	0.029	Sig.	0.078
Sexual orgasm		Sexual orgasm	
Spearman' rank correlation coefficient	0.283	Spearman' rank correlation coefficient	0.329
Sig.	0.030	Sig.	0.918
Sexual satisfaction		Sexual satisfaction	
Spearman' rank correlation coefficient	0.264	Spearman' rank correlation coefficient	0.264
Sig.	0.037	Sig.	0.018
Pain during intercourse		Pain during intercourse	
Spearman' rank correlation coefficient	0.220	Spearman' rank correlation coefficient	0.313
Sig.	0.095	Sig.	0.005

The comparison of sexual function and its subscales between the two groups with hot and cold temperaments showed that women with

hot temperament had a significantly better sexual function ($P=0.001$, Table 3).

Table 3. Comparison between sexual function score and its subscales in two groups with hot and cold temperaments

Variable	Temperament		Sig.
	Hot temperament (n=100)	Cold temperament (n=100)	
	SD±Mean	SD±Mean	
Total score of sexual function	31.2±4.4	24.25±2.78	z=-7.008 P* <0.001
Libido score	5.57±0.67	4.80±0.75	z=-4.637 P* <0.001
Sexual stimulation score	5.97±1.42	4.17±1.27	z=-5.421 P* <0.001
Vaginal moisture score	5.52±.64	3.97±0.97	z=-6.481 P* <0.001
Sexual orgasm score	4.15±1.25	3.35±0.97	z=-2.709 P* <0.007
Sexual satisfaction score	5±1.63	3.95±0.66	z=-5.270 P* <0.001
Pain score during intercourse	5.47±1.51	3.85±0.80	z=-5.171 P* <0.001

P* Man-Whitney U test

Discussion

Sex is one of the important dimensions of individuals' lives, which can be influenced by their personality traits, interpersonal relationships, family, social and cultural

conditions, environment, couple's background of sexual affairs, physical and mental health, and hormonal status (20). Sexual function in women is a type of ability to achieve sexual stimulation, lubrication, orgasm, and satisfaction. Moreover,

this function leads to women's well-being and health, along with high quality of life (21). Therefore, sexual function is a multidimensional phenomenon affected by a large number of biological, psychological, and social factors, and a process that involves a combination of different organs and necessitates the coordination among neurological, vascular, and endocrine systems (21).

The present study mainly aimed to determine the relationship between hot and cold temperaments and sexual function among the women of reproductive age. The results indicated that the total score of sexual function and all its subscales, except for pain during intercourse, had a significant relationship with hot temperament. Furthermore, the total score of sexual function and some sexual subscales (i.e., libido, sexual satisfaction, and pain during intercourse) showed a significant relationship with cold temperament. The comparison of cold- and hot temperament individuals revealed that those with hot temperament had a better sexual function.

To the extent of the researchers' knowledge, no study has measured the relationship between the type of temperament and sexual function. Therefore, the researchers used similar findings discussing the relationship between the type of temperament and other variables. Mortazavi et al. (2013) documented a significant relationship between sexual frigidity and marital conflicts, showing that marital conflict enhances with an increase in sexual frigidity. Their finding is in line with the results of the current study. In the present study, those with cold temperament and lower sexual function had lower sexual stimulation, lower vaginal moisture, and higher pain during intercourse. This sexual dysfunction may provide the grounds for marital conflicts (13).

The present study measured both hot and cold temperaments; however, Mortazavi et al. investigated cold temperament women and disregarded the possibility of marital conflicts in women with hot temperaments. They also adopted the questionnaire developed by Bahrami and Eshghi, which examines cold temperament in four cognitive, behavioral, emotional, and physical aspects. However, our study just examined individuals' temperament

using a different questionnaire (12). In their study, all subscales of marital conflicts were in line with cold temperament. On the contrary, libido, sexual satisfaction, and pain during intercourse were significant in the individuals with cold temperament participating in the present study.

Libido is a mental state that can be instigated by intrinsic (e.g., sexual gestures and dreams) and extrinsic (e.g., loving one's sex partner) sexual stimulants. It can be specified by such attributes as sexual thoughts, provocative tendency towards others, and sexual volunteer from an outside world (22). The cold temperament women might experience sexual desire because of their love for their husbands; however, they experience no orgasm, reach no sexual stimulation, and have no enough vaginal moisture, and consequently suffer from more pain during intercourse.

Pain during sexual intercourse is referred to a persistent or repetitive and unpleasant genital pain experienced by women during, before, or after sexual intercourse (23). This pain is not significant in individuals with hot temperament since they are sexually stimulated and have adequate vaginal moisture. The participants in the present study were examined in terms of a history of vaginitis and other causes of pain during intercourse and found to suffer from none of the associated causes.

Sohrabvand et al. (2012) carried out a descriptive analytical (cross-sectional) study on 54 infertile women with the aim of determining individual's temperament and womb temperament in the infertile women referring to the traditional medicine clinic of Imam Khomeini Hospital in Tehran, Iran. Their findings revealed that the most common womb mal-temperaments in infertile women were cold, moist, and cold-moist temperaments. In addition, they reported a significant relationship between the individual and womb temperaments. In this regard, the women with cold-moist temperament were more likely to experience infertility and sexual dysfunction. In a similar vein, the present study showed that those with cold temperament had lower sexual function (24). In the mentioned study, the researchers used the womb temperament questionnaire and standardized temperament questionnaire adopted from the

study by Yousofi (25); however, in the present study, temperament scale developed by Mojahedi was employed.

In a descriptive, analytical (cross-sectional) study, Gerim et al. (2015) aimed to determine the relationship between temperament and libido among 16,571 women who were 21-45 years of age and called for interviews via Internet in Brazil. In the mentioned study, they used the combined model of the effect of temper and emotions model for a large statistical population and reported that 59.5% of men and 49.2% of women had sexual desire for the opposite gender. Based on their findings, the individuals' sexual orientation significantly varied based on their emotional temperaments. Furthermore, they reported that sexual orientations had a relationship with emotional characteristics and emotional temperaments. Individuals with heterosexual orientation are significantly more likely to show comparative features (e.g., moodiness) and non-comparative features (e.g., less sensitivity and sensation). The unstable and exotic emotional temperaments are mostly observed in bisexuals (26). These findings are consistent with the results obtained in the present study. The only difference between these two studies was that the former examined the relationship between emotional temperament and libido, while the present study considered individuals' temperament based on their total score of sexual function and its dimensions.

In the present study, the total sexual function score was correlated with both hot and cold temperaments. The comparison of the two groups revealed that the hot temperament individuals had a better sexual function, compared to the cold temperament ones. This significant difference might be due to the fact that the women with cold temperament do not often take steps to initiate sexual activity and reluctantly accept it if they feel a sign of sexual desire from their partner. Generally, these women have few sexual experiences; however, in some cases, they are engaged in sexual affairs because of their desire for intimacy with their spouse or their obligation to meet the sexual needs of their spouse (27).

In a study conducted by Juliajil (2002), the sexual responses of women with cold

temperament, while having no internal sexual motivation, varied from the active avoidance responses to sexual contact to active participation in sexual activity with the spouse (28). This can be the cause of higher pain during intercourse in cold temperament women, though their sexual desire and satisfaction were higher as well. These women cannot reach orgasm and feel sexual stimulation; however, the difference was not significant in this study. In hot temperament individuals, no pain during sexual intercourse was reported because they might have reached the sexual desire, stimulation, enough vaginal moisture, and orgasm.

In the traditional medicine books, the most common sexual mal-temperament leading to sexual dysfunction and infertility is cold temperament. An individual's personality and temperament have a close relationship with the level of sexual hormones. This confirms the link between an individual's temperament and sexual hormones (24). In the present study, cold temperament individuals had a higher sexual dysfunction, compared to the hot temperament ones. Ziolkiewicz et al. (2012) showed that women with hot temperament and high extroversion traits have estradiol hormones twice as much as those lacking such traits (29). This means that a person's personality and temperament are closely related to sex hormones, confirming the consistency between one's temperament and sexual function.

As one of the limitations of this research, most of the participants refused to answer to the research question due to the fact that the sexual issues are taboo and bear a cultural burden. However, the researchers tried to resolve the problem through enhancing the sample size.

Conclusion

The findings of the present study revealed that sexual function was associated with individuals' temperament, and that cold temperament individuals had lower sexual function, compared to the hot temperament ones. Furthermore, hot temperament individuals had a higher desire for sexual function, compared to the cold temperament women. Consequently, more effort should be made by to improve sexual function through

balancing the temperament by the implementation of training sessions in this regard. It is recommended to perform further examinations regarding sexual temperament and sexual function among the women of reproductive age, postmenopausal women, and men in order to achieve more accurate and generalizable results.

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Conflicts of interest

The authors declare no conflicts of interest.

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