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THE RELATIONSHIP BETWEEN THE PREMENSTRUAL SYNDROME EXPERIENCE AND ATTITUDES TOWARDS COMPLEMENTARY AND ALTERNATIVE MEDICINE OF HEALTH SCIENCES FACULTY STUDENTS
SAĞLIK BİLİMLERİ FAKÜLTESİ ÖĞRENCİLERİNİN PREMENSTRUAL SENDROM YAŞAMA DURUMU İLE TAMAMLAYICI VE ALTERNATİF TIBBA YÖNELİK TUTUMLARI ARASINDAKİ İLİŞKİ

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ABSTRACT

The objective of this study is to determine the relation between the premenstrual syndrome states of the Faculty of Health Sciences students and their attitudes towards holistic and complementary medicine. This descriptive and correlational study was carried out on the female students studying at the faculty of health sciences of a foundation university between the dates of 15 March–15 June 2023. The sample of the study included 470 students. Socio-demographic form, Premenstrual Syndrome Scale (PMSS) and Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ) were used as the data collection tools. The score average of the students in the Premenstrual Syndrome Scale was 141.79±36.24 and in the Holistic Complementary and Alternative Medicine Questionnaire was 26.87±6.26. No significant relation was found between the score averages of Premenstrual Syndrome Scale and Holistic Complementary and Alternative Medicine Questionnaire ($p>0.05$). The most commonly used complementary and alternative methods by the students were sleep/rest (92.6%), having hot drinks (85.7%), having a hot shower (84.9%), and massage on the abdomen(81.7%). It was determined that the students having irregular periods, smoking, not eating healthily and consuming too much coffee had more premenstrual syndrome symptoms ($p<0.05$). The students should gain healthy lifestyle behaviors in order to have fewer premenstrual syndrome symptoms. They should be told how they would use complementary and alternative treatment methods in symptom control and topics related to complementary and alternative treatment methods should be added in the course contents.

Keywords: Alternative medicine, complementary, premenstrual syndrome, student.

ÖZ

Bu çalışmanın amacı Sağlık Bilimleri Fakültesi öğrencilerinin premenstrual sendrom yaşama durumları ile tamamlayıcı ve alternatif tıbba yönelik tutumları arasındaki ilişkiyi belirlemektir. Tanımlayıcı ve ilişki arayıcı nitelikteki bu çalışma, 15 Mart–15 Haziran 2023 tarihleri arasında bir vakıf üniversitesinin Sağlık Bilimleri Fakültesi'nde öğrenim gören öğrenciler üzerinde gerçekleştirilmiştir. Araştırmanın örneklemini 470 öğrenci oluşturmuştur. Veri toplama aracı olarak sosyo-demografik form, Premenstrüel Sendrom Ölçeği (PMSS) ve Bütüncül Tamamlayıcı ve Alternatif Tıbba Karşı Tutum Ölçeği (BTATTÖ) kullanıldı. Öğrencilerin Premenstrüel Sendrom Ölçeği'nden puan ortalaması 141.79±36.24, Bütüncül Tamamlayıcı ve Alternatif Tıbba Karşı Tutum Ölçeği puan ortalaması ise 26.87±6.26'ydı. Premenstrüel Sendrom Ölçeği ve Bütüncül Tamamlayıcı ve Alternatif Tıbba Karşı Tutum Ölçeği puan ortalamaları arasında anlamlı ilişki bulunamadı ($p>0.05$). Öğrencilerin en sık kullandıkları tamamlayıcı ve alternatif yöntemler ise uyku/dinlenme (%92.6), sıcak içecek içmek (%85.7), sıcak duş almak (%84.9) ve karın bölgesine masaj yapmak (%81.7) oldu. Menstrualsiklusu düzensiz olan, sigara içen, sağlıklı beslenmeyen ve çok fazla kahve tüketen öğrencilerde premenstrüel sendrom belirtilerinin daha fazla olduğu belirlendi ($p<0.05$). Premenstrual sendrom belirtilerinin daha az görülmesi için öğrencilere sağlıklı yaşam tarzı davranışlarının kazandırılması gerekmektedir. Semptom kontrolünde tamamlayıcı ve alternatif tedavi yöntemlerini nasıl kullanacakları anlatılmalı ve ders içeriklerine tamamlayıcı ve alternatif tedavi yöntemleri ile ilgili konular eklenmelidir.

Anahtar kelimeler: Alternatif tıp, tamamlayıcı, premenstrüel sendrom, öğrenci.

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INTRODUCTION

Premenstrual syndrome (PMS) is a number of physiologic, physiologic and behavioral symptoms starting nearly 7-10 days before menstruation and disappearing with the beginning of menstruation.[1-4] Although the etiology of PMS is not known completely, it is believed that genetic factors, hypoglycemia, lack of progesterone, change in the serotonin and melatonin levels, fluid retention, increase in the amount of prostaglandin, deterioration in rennin angiotensin aldosterone mechanism and psychosocial factors lead up to PMS.[3,4] PMS is a situation emerging between menarche and menopause periods, bringing some difficulties to the daily lives of women and decreasing the quality of life.[2] A number of symptoms such as decrease in work performance, lack of attention, lack of sleep, communication problems, depressed mood, edema, breast tenderness and headache emerge.[1-3] Women use pharmacologic and non-pharmacologic methods to cope with these symptoms that occur every month Oral contraceptives, diuretics, analgesics and anxiolytics are recommended as pharmacological interventions.[1,4,5] However, due to the high side effects of pharmacological treatments, women are interested in non-pharmacological methods, traditional and complementary medicine practices, as they have fewer side effects, are cheaper, more reliable and more comfortable to use than pharmacological methods.[5,6]

While traditional medicine is widely used in developing countries, the use of complementary and alternative medicine is rapidly increasing in developed countries.[7] Although the terms alternative and complementary replace each other, actually they have different meanings. Applications used together with medical treatment are accepted as "complementary" and applications used instead of medical treatment are accepted as "alternative".[8]

According to the World Health Organization, traditional medicine includes manual techniques, spiritual therapies, various health applications including medicine based on herbs, animals and/or minerals, beliefs and knowledge that are applied singly or in combination in order to prevent, diagnose and treat diseases and to maintain health.[9] Limitation of sodium and caffeine in nutrition, exercise, pilates, herbal products, aromatherapy, yoga, acupuncture, reflexology and cognitive behavioral therapies are some of the alternative and complementary methods used in PMS.[1,4,10-16]

In related studies, it is determined that the frequency of PMS is high (20-80%).[10,17,18] Although there are many studies on the complementary and alternative methods young women use for PMS, there is no study determining the attitudes of young women experiencing PMS towards alternative and complementary methods. It is stated in the literature that having a positive attitude towards a certain subject is a factor that leads individuals to perform that behavior.[19] When it is thought that the young having high attitudes towards complementary and alternative treatments use these methods more, it is important to provide detailed information regarding treatment methods.

The effect of the attitudes of the students at the faculty of health sciences towards complementary and alternative medicine on coping with premenstrual syndrome will be determined through this study.

MATERIALS AND METHOD

Study Design

This study was conducted as a descriptive and correlational research.

Population and Sample

This study was carried out between 15 March and 15 June 2023. The population of the study consists of 568 female students studying at the Faculty of Health Sciences of a foundation university. No sample was taken from the population; instead, an attempt was made to reach the entire population. The study was completed with 470 female students who agreed to participate in the research. In this way, 83% of the population was reached. Students who were literate in Turkish and volunteered to participate in the research participated in the research.

Data Collection Tools

The data will be collected through Personal Information Form, Premenstrual Syndrome Scale (PMSS) and Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ).

Sociodemographic Form: The form includes 18 items questioning the sociodemographic characteristics of the students, menstrual period characteristics and the coping methods with the problems they have during the menstrual period.[1,3,5]

Premenstrual Syndrome Scale (PMSS): The scale, developed in accordance with DSM III and DSM IV-R by Gencdogan[20] in 2006, aims at measuring the severity of the premenstrual symptoms. This scale, which is widely used in Turkey, includes 44 items that individuals mark considering the “state of being in the one week before the period.” The scale is designed as a 5-point Likert scale and includes 9 subscales (depressive sensation, anxiety, fatigue, nervousness, depressive thoughts, pain, appetite changes, sleep pattern changes and swelling). The minimum score that can be obtained from the scale is 44 and the maximum is 220. In those having more than 50% of the total PMSS score, PMS is classified as positive. A higher PMSS score indicates more severe premenstrual symptoms. The Cronbach’s Alpha coefficient of the original scale is 0.75 and it has been found as 0.97 in our study.

Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ): Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ) was developed by Hyland, Lewith and Westboy. The adaptation of the scale into Turkish was carried out by Erci.[21] The scale includes two subscales as Complementary and Alternative Medicine (CAM) and Holistic Health (HH) and 11 items. It is a 6-point Likert scale and the scores in the scale range between 11 and 66. As the scores decrease, the attitude towards complementary and alternative medicine increases. The Cronbach’s Alpha coefficient of the scale is 0.72, CAM subscale reliability coefficient is 0.62 and HH subscale reliability coefficient is 0.60. In our study, the Cronbach’s Alpha coefficient of the scale is 0.72. Since the Cronbach alpha reliability coefficient of the sub-dimensions was below 0.70, analyzes were performed on the total score of the scale.

Data Collection

Surveys were created via a google form and the survey link was sent to students. A question was asked in the link regarding their consent to participate in the study.

Participants accessed the scales after giving their consent to participate in the study in the voluntary consent form. Filling out the research forms took 10 minutes.

Before the study, the research ethics committee approval was received from the Non-invasive Ethical Committee of a university (Date: 23/02/2023, Decision No: 2023/001-009), the institutional permission from the Faculty of Health Sciences and informed consent form from the students. The study was conducted in accordance with the Declaration of Helsinki.

Statistics Analysis

The data obtained from the study was evaluated by SPSS 28.0 program. Descriptive statistics such as number, percentage and mean±standard deviation were used in the analysis of the research. Kolmogrov-Smirnov test was used for the normality of the data. Since the data met the parametric conditions, independent sample t test was used for independent two groups, ANOVA for the comparisons with more than two groups, Tukey for the groups meeting homogeneous hypothesis to determine which group was different from the others, Tamhane's T2 for the groups that does not meet the homogeneous hypothesis. Pearson correlation coefficient was used to determine the relation and the level of significance was taken as 0.05.

RESULTS

Table 1 includes the descriptive characteristics of the students. 75.3% of the students have regular periods, 84.0% do not smoke and 80.2% do not do exercise. 55.1% of the participants occasionally eat healthily and 59.0% of them have fewer than 3 cups of coffee. 38.5%

Table 1. The distribution of the students in terms of the descriptive characteristics (n: 470)

Characteristics	Number (%)
Department	
Nursing	144 (30.6)
Physiotherapy and Rehabilitation	75 (16.0)
Nutrition and Dietetics	251 (53.4)
Grade	
1st grade	108 (23.0)
2nd grade	91 (19.4)
3rd grade	126 (26.8)
4th grade	145 (30.8)
Smoking	
Yes	75 (16.0)
No	395 (84.0)
Doing Exercise	
Yes	93 (19.8)
No	377 (80.2)
Healthy Eating	
Always	6 (1.3)
Usually	189 (40.2)
Occasionally	259 (55.1)
Never	16 (3.4)
Coffee Consumed Daily	
None	42 (8.9)
3 cups and below	277 (59.0)
3 cups and above	151 (32.1)
Menstrual Cycle	
Regular	354 (75.3)
Irregular	116 (24.7)
Pain Killer Use During Menstrual Period	
Every month	118 (25.1)
Occasionally	181 (38.5)
Never	171 (36.4)
The state of the effectiveness of the symptoms experienced during the menstrual period*	
My academic success is decreasing	212 (45.1)
It affects our interpersonal communication negatively	304 (64.7)
It affects my quality of life affectively	334 (71.1)
Knowing about complementary and alternative treatment methods	
I know	168 (35.7)
I don't know	302 (64.3)
How often do you use complementary and alternative treatment methods for the diseases you experience?**	
Always	8 (1.7)
Usually	27 (5.7)
Occasionally	97 (20.6)
Never	36 (7.7)
How much do you believe in the effectiveness of complementary and alternative treatments?**	
I believe very much	15 (3.2)
I believe	86 (18.3)
Undecided	61 (13.0)
I don't believe	4 (0.9)
I don't believe at all	2 (0.3)
Have you received training regarding complementary and alternative treatment methods?	
Yes	15 (3.2)
No	455 (96.8)
Menstrual pain (between 0-10 points) score average±ss	6.46±2.304
Menarch age average±ss	13.47±1.44
Menstruation cycle average±ss	28.65±7.02

* More than one option is selected

**Those who have information about complementary and alternative treatment methods answered.

of the participants occasionally take pain killers during their period and 71% state that the symptoms they have during their periods affect their quality of lives negatively. When they are told to score the pain they have during their periods between 0-10, the score average of the menstrual pain is 6.46±2.30. 35.7% of the students have knowledge about complementary and alternative treatment methods and 20.6% of them use these methods.

The complementary and alternative methods students use during their periods are presented in Table 2. The most frequently used methods are, respectively, sleep/rest (92.6%), having hot drinks (85.7%), having hot shower (84.9%) and massage on abdomen (81.7%). Sleep/rest (82.6%), hot shower (72.4%), massage on abdomen (68.3%) and having hot drinks (65.1%) are among the methods that students find most useful.

Table 3 includes Premenstrual Syndrome Scale total score and subscale scores of the students in terms of the descriptive characteristics.All subscale scores, except for pain and appetite changes subscales, of the students having irregular menstrual cycle are higher when compared to those having regular menstrual cycle and the difference between them is statistically significant ($p<0.05$). The sleep changes (t:3.453 p:0.001) and swelling (t:2.043 p:0.042) subscales and total score average (t:2.027 p:0.043) of the smoking students are higher than those who smoke and the difference is statistically significant. The anxiety (F:4.486 p:0.004), fatigue (F:2.947 p:0.033), nervousness (F:4.415 p:0.004), depressive thoughts (F:5.813 p:0.001) and sleep changes (F:4.682 p:0.003) subscale score averages and total score averages (F:4.917 p:0.002) of the students stating they occasionally eat healthily are higher than those stating they eat healthily and the difference is statistically significant. The anxiety (F:4.252 p:0.015), fatigue (F:3.766 p:0.024), nervousness (F:6.273 p:0.002) and depressive thoughts (F:3.661 p:0.026) subscale score averages and total score averages (F:4.155 p:0.016) of the students having daily three and more cups of coffee are higher than that of those having three and fewer cups of coffee. The depressive sensation (F:4.509 p:0.011), fatigue (F:4.588 p:0.011), and sleep changes (F:12.094 p:0.000) subscale score averages and total score averages (F:4.897 p:0.008) of the students taking pain killers every month during their periods are higher than that of those using pain killers occasionally and those do not use painkillers.

Table 4 includes Holistic Complementary and Alternative Medicine Questionnaire total scores of the students in terms of their descriptive characteristics. Holistic Complementary and Alternative Medicine Questionnaire total score averages (F:5.339 p:0.005) of nutrition and dietetics students are found lower than that of nursing students and the difference is statistically significant. Students taking pain killers every month during their periods have higher total score averages (F:3.536 p:0.030) when compared to those do not take pain killers.

In Table 5, the comparison of the use of complementary and alternative treatments of the students during their periods the tot with al score averages of PMSS and HCAMQ is presented. The students having herbal tea (t: 3.652 $p<0.001$), going walking (t:2.807 p:0.005), having hot drinks (t:3.061 p:0.002), doing massage on the abdomen (t:3.853 $p<0.001$), and sleeping/resting (t:2.422 p:0.016) have higher premenstrual syndrome scale total score average than those who do not use these methods and the difference between them is statistically significant. While students going walking (t:-2.145 p:0.032) have lower score average in the holistic complementary and alternative medicine questionnaire

Table 2. Complementary and alternative treatment methods students use to cope with premenstrual syndrome (n: 470)

Method	Not use n (%)	Have benefit n (%)	Used but not have benefit n (%)	Don't know if helped n (%)
Sleep/rest	35 (7.4)	388 (82.6)	20 (4.3)	27 (5.7)
Hot shower	71 (15.1)	340 (72.4)	19 (4.0)	40 (8.5)
Massage on the abdomen	86 (18.3)	321 (68.3)	24 (5.1)	39 (8.3)
Hot drinks	67 (14.3)	306 (65.1)	28 (6.0)	69 (14.6)
Walking	166 (35.3)	236 (50.3)	26 (5.5)	42 (8.9)
Herbal tea	171 (36.4)	184 (39.1)	39 (8.3)	76 (16.2)
Listening to music	173 (36.8)	181 (38.6)	41 (8.6)	75 (16.0)
Physical exercise	267 (56.8)	160 (34.0)	12 (2.6)	31 (6.6)
Breathing exercise	294 (62.6)	125 (26.6)	18 (3.8)	33 (7.0)
Pilates	398 (84.7)	51 (10.9)	5 (1.1)	16 (3.3)
Yoga	404 (86.0)	40 (8.5)	7 (1.5)	19 (4.0)
Acupuncture	451 (96.0)	9 (1.9)	2 (0.4)	8 (1.7)
Reflexology	441 (93.8)	18 (3.9)	3 (0.6)	8 (1.7)

Table 3. The comparison of the students' PMSS total score and subscale scores in terms of their descriptive characteristics (n: 470)

Descriptive Characteristic	n	Premenstrual Syndrome Scale									
		Depressive Sensation	Anxiety	Fatigue	Nervousness	Depressive Thoughts	Pain	Appetite Changes	Sleep Changes	Swelling	Total
		X±SD	X±SD	X±SD	X±SD	X±SD	X±SD	X±SD	X±SD	X±SD	X±SD
Menstrual cycle											
Regular	354		18.51±7.22	20.57±5.83	17.15±5.11	20.27±7.74	9.66±3.34	9.91±3.60	8.84±3.53	9.79±3.52	138.92±37.50
Irregular	116		20.18±5.99	22.55±5.15	18.42±4.73	22.25±6.65	10.14±3.31	10.56±3.46	9.70±3.14	10.55±3.25	150.55±30.60
			t: -2.468	t: -3.260	t: -2.363	t: -2.671	t: -1.352	t: -1.686	t: -2.342	t: -2.032	t: -3.349
			p: 0.014*	*p*: 0.001*	*p*: 0.019*	*p*: 0.008*	*p*: 0.177	*p*: 0.092	*p*: 0.020*	*p*: 0.043*	*p*<0.001*
Smoking											
Yes	75	25.62±5.96	20.37±6.91	22.05±5.19	18.46±4.93	21.54±7.67	10.20±3.04	10.24±3.84	10.30±3.35	10.73±2.88	149.54±33.62
No	395	24.49±6.44	18.65±6.96	20.87±5.81	17.27±5.05	20.61±7.50	9.70±3.38	10.04±3.53	8.82±3.42	9.84±3.55	140.32±36.57
		t: 1.416	t: 1.958	t: 1.638	t: 1.878	t: 0.979	t: 1.180	t: 0.436	t: 3.453	t: 2.043	t: 2.027
		p: 0.157	*p*: 0.051	*p*: 0.102	*p*: 0.061	*p*: 0.328	*p*: 0.239	*p*: 0.663	*p*: 0.001*	*p*: 0.042*	*p*: 0.043*
Healthy eating											
Always[a]	6	22.33±9.15	16.00±9.33	19.66±7.96	14.66±5.81	15.33±7.63	9.33±3.88	9.66±5.50	9.16±4.11	11.16±4.44	127.33±51.82
Usually[b]	189	23.87±6.16	17.61±6.66	20.16±5.13	16.63±4.75	19.48±6.90	9.42±3.34	9.62±3.55	8.34±3.48	9.73±3.50	134.90±34.13
Occasionally[c]	259	25.15±6.32	19.88±6.99	21.66±5.93	18.00±5.09	21.55±7.63	9.97±3.26	10.40±3.48	9.50±3.30	10.09±3.42	146.24±35.96
Never[d]	16	27.18±7.52	20.25±7.29	22.37±7.11	19.68±5.81	25.18±9.40	11.00±4.08	10.12±4.47	10.06±4.07	10.81±3.52	156.68±45.38
		F: 2.611	F: 4.486	F: 2.947	F: 4.415	F: 5.813	F: 1.754	F: 1.784	F: 4.682	F: 0.957	F: 4.917
		p: 0.051	*p*: 0.004*	*p*: 0.033*	*p*: 0.004*	*p*: 0.001*	*p*: 0.155	*p*: 0.149	*p*: 0.003*	*p*: 0.413	*p*: 0.002*
			b<c	b<c	b<c	a<d, b<c,d			b<c		b<c
Coffee consumeddaily											
None[a]	42	24.14±6.19	19.02±7.22	20.16±5.42	17.07±5.42	20.76±8.23	9.88±3.34	9.66±3.62	9.38±3.16	9.73±3.27	139.83±36.81
3 cups and below[b]	277	24.19±6.66	18.20±6.99	20.63±5.89	16.88±5.16	20.04±7.48	9.64±3.45	10.03±3.64	8.93±3.54	9.74±3.61	138.31±37.60
3 cups and above[c]	151	25.68±5.76	20.24±6.72	22.09±5.39	18.64±4.53	22.09±7.26	10.01±3.12	10.26±3.45	9.18±3.38	10.49±3.21	148.72±32.58
		F: 2.852	F: 4.252	F: 3.766	F: 6.273	F: 3.661	F: 0.621	F: 0.503	F: 0.450	F: 2.430	F: 4.155
		p: 0.059	*p*: 0.015*	*p*: 0.024*	*p*: 0.002*	*p*: 0.026*	*p*: 0.538	*p*: 0.605	*p*: 0.638	*p*: 0.089	*p*: 0.016*
			b<c	b<c	b<c	b<c					b<c
Pain Killer Use During Menstrual Period											
Every month[a]	118	26.15±5.57	20.04±6.80	22.41±5.34	18.16±4.98	22.06±7.27	10.64±3.02	9.99±3.58	10.24±3.09	10.62±3.28	150.34±32.56
Occasionally[b]	181	24.35±6.43	18.52±6.66	20.73±5.76	17.38±4.67	20.48±7.29	9.81±3.39	10.30±3.65	9.02±3.47	9.91±3.52	140.54±35.78
Never[c]	171	23.97±6.69	18.58±7.37	20.46±5.83	17.06±5.44	20.15±7.87	9.14±3.37	9.88±3.50	8.25±3.46	9.61±3.50	137.14±38.29
		F: 4.509	F: 2.030	F: 4.588	F: 1.719	F: 2.481	F: 7.262	F: 0.664	F: 12.094	F: 3.045	F: 4.897
		p: 0.011*	*p*: 0.133	*p*: 0.011*	*p*: 0.180	*p*: 0.085	*p*: 0.001*	*p*:0.515	*p*:0.001*	*p*: 0.049*	*p*: 0.008*
		a>b,c		a>b,c			a>c		a>b,c	a>c	a>b,c
Total		24.67±6.37	18.93±6.97	21.06±5.73	17.46±5.04	20.76±7.52	9.78±3.33	10.07±3.58	9.05±3.45	9.98±3.47	141.79±36.24

*$p<0.05$ was considered statistically significant..
Data are expressed as mean ± standard error mean and standard deviation (X±SD). t: independent sample t test, F: ANOVA test.
Superscripts a, b, c, d indicate intra-group differences in each group.

Table 4. Comparison of the Holistic Complementary and Alternative Medicine Questionnaire total score averages of the students in terms of descriptive characteristics (n: 470)

Descriptive Characteristics	n	HCAMQ Total X±SD
Department		
Nursing[a]	144	28.06±4.71
Nutrition and dietetics[b]	251	26.43±7.05
Physiotherapy and rehabilitation[c]	75	26.05±5.82
		F: 5.339
		p: 0.005*
		a>b,c
Pain killer use during menstrual period		
Every month[a]	118	28.18±6.99
Occasionally[b]	181	26.49±6.00
Never[c]	171	26.36±5.90
		F: 3.536
		p: 0.030*
		a>c
Knowing about complementary and alternative treatment methods		
Yes	168	27.53±6.26
No	302	26.47±6.23
		t: 1.763
		p: 0.079
How often do you use of complementary and alternative treatment methods for the diseases experienced		
Always[a]	8	24.00±8.68
Usually[b]	27	27.51±4.39
Occasionally[c]	97	26.84±5.78
Never[d]	36	26.90±6.64
		F: 0.670
		p: 0.571
How much do you believe in the effectiveness of complementary and alternative treatments		
I believe very much[a]	15	23.95±7.07
I believe[b]	86	26.78±5.89
Undecided[c]	61	27.12±6.27
I don't believe[d]	4	27.18±6.49
I don't believe at all[e]	2	26.70±7.80
		F: 1.219
		p: 0.302
Total		26.87±6.26

*$p<0.05$ was considered statistically significant.
Data are expressed as mean ± standard error mean and standard deviation (X±SD). t: independent sample t test, F: ANOVA test
Superscripts a, b, c, d indicate intra-group differences in each group.

than those who do not go walking, students having sleep/rest (t:2.297 p:0.022) have higher score average than those who do not sleep/rest and the difference between them is statistically significant.

There is no significant relation between the total score averages of Premenstrual Syndrome Scale and Holistic Complementary and Alternative Medicine Questionnaire (p>0.05) (Table 6).

DISCUSSION

The PMSS total score average of the students studying at the faculty of health sciences is 141.79±36.24 and 82.1% of the students have premenstrual syndrome. The PMSS total score averages of the students in the study of Şimşek Küçükkelepçe et al.[5], Çevik and Alan[22] are similar to our study (respectively, 139.16±34.00 and 137.37±39.07). We believe that this similarity arises from that the research groups have similar characteristics (age, school and university students)

Sufficient and quality sleep is important in the management of premenstrual syndrome.[23] The most frequently used method by students to cope with premenstrual syndrome is sleep/rest (82.6%). It is followed by hot shower with 72.4%, massage on the abdomen with 68.3% and having hot drinks with 65.1%. It is determined in our study that students experiencing premenstrual syndrome severely have herbal tea and hot drinks, go walking, massage their abdomens and sleep/rest more than those who do not (p<0.05). According to the study by Şimşek Küçükkelepçe et al.[5], 61.7% of the students massage and 87.7% do hot application on the abdomen. It is stated in the study by Karaküçük et al.[24] that 55% of the students do hot application, 54.5% massage and 53.1% have herbal tea.

The consumption of caffeine should be reduced since too much caffeine increases irritability and sleeplessness.[23] In our study, it is determined that students having three and more cups of coffee experience more premenstrual syndrome (p<0.05). Similar to our study, in the study by Bakır and Balcı Yangın[25] it is found that coffee consumption increases the rate of premenstrual syndrome. However, in the study by Ababneh et al.[26] it

Table 5. The comparison of the complementary and alternative treatment methods students use to cope with premenstrual syndrome symptoms with PMSS and HCAMQ total score averages (n: 470)

Method	n	PMSS X±SS	HCAMQ X±SS
Having herbal tea			
Yes	299	146.35±34.65	26.85±6.63
No	171	133.83±37.65	26.91±5.58
		t: 3.652	t: -0.099
		p: 0.001*	*p*: 0.921
Physical exercise			
Yes	203	143.04±33.37	26.64±6.64
No	267	140.85±38.30	27.04±5.97
		t: 0.662	t: -0.691
		p: 0.508	*p*: 0.490
Yoga			
Yes	66	142.89±32.57	27.40±8.54
No	404	141.61±36.83	26.78±5.82
		t: 0.265	t: 0.747
		p: 0.791	*p*: 0.456
Pilates			
Yes	72	135.93±32.95	27.16±8.53
No	398	142.85±36.74	26.82±5.77
		t: -1.495	t: 0.429
		p: 0.136	*p*: 0.668
Walking			
Yes	304	145.24±35.62	26.41±6.58
No	166	135.49±36.62	27.71±5.57
		t: 2.807	t: -2.145
		p: 0.005*	*p*: 0.032*
Hot shower			
Yes	399	143.12±36.39	26.73±6.34
No	71	134.33±34.65	27.63±5.80
		t: 1.888	t: -1.108
		p: 0.060	*p*: 0.268
Having hot drinks			
Yes	403	143.86± 35.45	26.81±6.29
No	67	129.35±38.65	27.20±6.14
		t: 3.061	t: -0.471
		p: 0.002*	*p*: 0.638
Acupuncture			
Yes	19	138.52±31.36	27.26±8.13
No	451	141.93±36.45	26.85±6.18
		t: -0.401	t: 0.214
		p: 0.688	*p*: 0.833
Massage on the abdomen			
Yes	384	144.80±35.62	27.05±6.26
No	86	128.38±36.11	26.06±6.27
		t: 3.853	t: 1.318
		p<0.001*	*p*: 0.188
Reflexology			
Yes	29	140.89±33.22	27.27±7.25
No	441	141.96±36.43	26.83±6.20
		t: -0.154	t: 0.369
		p: 0.878	*p*: 0.712
Sleep/rest			
Yes	435	142.94±36.23	27.06±6.21
No	35	127.60±33.60	24.54±6.62
		t: 2.422	t: 2.297
		p: 0.016*	*p*: 0.022*

*$p<0.05$ was considered statistically significant.
Data are expressed as mean ± standard error mean and standard deviation (X±SD). t: independent sample t test.

Table 6. The relation between PMSS and HCAMQ

		HCAMQ Total
PMSS Total	r	-0.014
	p	0.770

r:pearson correlation analysis

is stated that coffee consumption and premenstrual syndrome have no relation. It is believed that this difference arises from the fact that sample groups have different cultures and lifestyle behaviors and from other factors affecting premenstrual syndrome.

In the study, smoking students experience premenstrual syndrome more than those who do not smoke ($p<0.05$). Ababneh et al.[26], Ferna´ndez et al.[27] and Salem et al.[28] find in their studies that those who smoke experience more premenstrual syndrome. Tobacco affects gonadotropic hormone regulation as well as the sex hormones such as estrogen, progesterone and androgens, and, accordingly, the risk of premenstrual syndrome development increases.[27]

According to our study, students eating healthily experience less premenstrual syndrome ($p<0.05$). It is determined in the study by Hashim et al.[29] that those who eat food with calorie, fat, sugar and salt experience premenstrual syndrome more, and those who consume a lot of fruit at the same time experience less. Işın Atıcı et al.[30] state that teenagers having a high quality of diet experience less depressive sensation, anxiety or sleep changes than those having a lowquality diet. Jafari et al.[31] have found that zinc supplement for 12 weeks in women having PMS have an effect on physical and psychological symptoms. It is known that calcium, vitamin D and B6 may have a relieving effect on premenstrual syndrome symptoms. A healthy diet (fresh and whole food based and avoiding from salt, refined oil, alcohol and stimulative drinks) is one of the strategies efficient in the prevention and management of premenstrual syndrome.[32]

It is known that physical activity and exercise leads to happiness by increasing endorphin level, reduces stress and has important effect on the decrease of pain by reducing adrenal cortisol.[33] It has been determined that doing exercise has no effect on students' PMSS total scores ($p>0.05$). However, 50.3% of the students going walking to cope with premenstrual syndrome, 34% of those doing physical exercise, 8.5% of those doing yoga, 26.6% of those doing breathing exercises and 10.9% of those doing pilates state that they have benefitted from the mentioned exercises. Studies reveal that exercises done in menstrual period reduce pain,[34,35] muscle cramps,[34,35] fatigue,[36] edema,[37] anxiety and depressive thoughts[11] and increase concentration.[34,36]

Students' HCAMQ score average is 26.87±6.26 and 35.7% of them state that they have knowledge about complementary and alternative treatment methods. Similarly, in the study by Hotun Şahin et al.,[38] the HCAMQ score average of the students is 28.44±4.31 but 94.4% of the students have state that they have knowledge about complementary and alternative treatment methods. Although more than half of the students in our study group state that they do not have knowledge about complementary and alternative treatment methods, it has been determined that they use alternative methods to reduce the symptoms of premenstrual syndrome (herbal tea, hot application, massage, walking, rest, listening to music and exercise) and that they benefit from these methods. In the study by Çay and Güner Emül[39] it has been found that 28.6% of the midwives and nurses having bachelor's degree have knowledge about complementary and holistic applications used in premenstrual syndrome. In related studies it has been seen that women experiencing premenstrual syndrome frequently use alternative methods among coping ways.[3,5,24,40]

CONCLUSION

It has been determined that the students included in the study experience premenstrual syndrome heavily, they use herbal tea, hot drinks, hot shower, physical exercise, rest/sleep, massage on the abdomen, listening to music and walking as coping methods but less than half of them have knowledge about complementary and alternative treatment methods. Trainings can be organized for students to gain healthy lifestyle behaviors so that they experience less symptoms of premenstrual syndrome. We recommend that subjects of what complementary and alternative methods are and how they should be used in healthcare should be integrated into course content.

Ethics Committee Approval: Before the study, the research ethics committee approval was received from the Non-invasive Ethical Committee of a university (Date: 23/02/2023, Decision No: 2023/001-009), the institutional permission from the Faculty of Health Sciences and informed consent form from the students. The study was conducted in accordance with the Declaration of Helsinki.

Informed Consent: Written and/or verbal consent was obtained from students participating in the study.

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