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ORIGINAL ARTICLE / ARAŞTIRMA YAZISI

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Determination Of Non-pharmacological Methods Used by Midwifery Students in Premenstrual Syndrome

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ABSTRACT

Purpose: To determine the non-pharmacological methods used by midwifery students with premenstrual syndrome.

Methods: This descriptive study was conducted with 293 midwifery students online between February and May 2021 using the Premenstrual Syndrome Scale (PMSS) and Nonpharmacological Methods Questionnaire Form.

Results: The mean score of PMSS was 124.38±39.1 and the 54.6% of the students experienced PMS of moderate severity. While the rate of applying only non-pharmacological methods for PMS was 27.3%, the rate of applying in addition to pharmacological methods was 37.5%. The most commonly used non-pharmacological methods were hot application, shower with hot water, and plenty of water consumption

Conclusion: Most of the midwifery students who participated in the study had moderate PMS. Students preferred non-pharmacological methods more in addition to pharmacological methods. It may be recommended to plan interventions to increase the level of knowledge and awareness of midwifery students about non-pharmacological methods that can be used for PMS.

Keywords: premenstrual syndrome; non-pharmacological method; midwifery; PMS

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Ebelik Öğrencilerinin Premenstuel Sendromda Kullandığı Non-farmakolojik Yöntemlerin Belirlenmesi

ÖZET

Amaç: Premenstrüel sendrom yaşayan ebelik öğrencilerinin kullandıkları nonfarmakolojik yöntemleri belirlemek.

Yöntem: Bu tanımlayıcı çalışma 293 ebelik öğrencisiyle Şubat-Mayıs 2021 arasında online olarak Premenstrüel Sendrom Ölçeği (PMSÖ) ve Nonfarmakolojik Yöntemlere İlişkin Anket Formu kullanılarak ile gerçekleştirildi.

Bulgular: PMSÖ puan ortalaması 124.38±39.1 bulundu ve öğrencilerin %54,6'sının orta şiddette PMS yaşadığı belirlendi. PMS için sadece non-farmakolojik yöntemleri uygulama oranı %27,3 iken, farmakolojik yöntemlere ek uygulama oranı ise %37,5 idi. En sık kullanılan nonfarmakolojik yöntemlerin sıcak uygulama, sıcak su ile duş ve bol su tüketimi olduğu saptandı.

Sonuç: Çalışmaya katılan ebelik öğrencilerinin çoğunun orta düzeyde PMS yaşadığı ve çoğunun nonfarmakolojik yöntemleri farmakolojik yöntemlere ek olarak tercih ettiği belirlendi. Ebelik öğrencilerinin PMS için kullanılabilecek nonfarmakolojik yöntemleri yeterince uygulamadığı belirlendiği için bu konudaki bilgi ve farkındalık düzeylerini artıracak müdahalelerin planlanması önerilmektedir.

Anahtar Kelimeler: premenstruel sendrom; non-farmakolojik yöntem; ebelik, öğrenci; PMS

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Premenstrual syndrome (PMS) is a disorder that usually occurs in the second half of the menstrual cycle and is characterized by physical and behavioral symptoms that affect certain aspects of a woman's life. The difference between PMS and normal premenstrual symptoms experienced by many women is that it affects daily life (1,2). According to the American College of Obstetricians and Gynaecologists (ACOG), if a woman has at least one emotional and at least one physical symptom that affects her social, academic, or work life, PMS can be mentioned, but these symptoms appear about five days before menstruation and must be seen during at least three menstrual cycles. The distinctive emotional symptoms of PMS; anxiety, depression, irritability, confusion, tantrums, social isolation while physical symptoms; breast tenderness, headache, swelling in the extremities, and swelling in the abdomen (3,4). It is seen that the changes in estrogen and progesterone hormone levels are effective in the formation of these symptoms (5,6).

Approximately 80% of women are exposed to some changes that can be considered as PMS symptoms in the premenstrual period, and the majority of this group is people in the 15-25 age group (7,8). Some women experience PMS symptoms at a much more severe level, which can negatively affect work/school attendance, academic success, social life, and quality of life (8). According to Bilir, et al. (9), the rate of university students with PMS is 71.3% and the most common symptoms are abdominal bloating and irritability. It was also observed that 7.6% of these students used oral contraceptive drugs for treatment purposes (9). According to Işık, et al. (10), the most common PMS problems experienced by the students participating in the study were fatigue and outbursts of anger, while 33.2% of them had severe PMS, and 70.4% of these students used medication for their symptoms (10).

There is no specific treatment for this problem, which greatly affects the quality of life, but it is known that using natural products during this period alleviates the symptoms. Thus, non-pharmacological treatment types are recommended first for people with PMS symptoms (11,12). Nonpharmacological treatment methods; diet arrangements, regular exercise, psychotherapy, massage, yoga, relaxation exercises, hot application, breathing exercises, alcohol, caffeine, and nicotine restriction, regular sleep, edema, salt restriction in the diet to reduce breast pain and tenderness, herbal teas such as chamomile tea, lemon balm tea teas; aromatherapy (lavender, rose, geranium, oil) acupressure, acupuncture, vitamin B6, calcium and magnesium supplementation is a wide range of applications (13-15). Recently, non-pharmacological applications are frequently preferred because they are accessible, easily applicable, and inexpensive (16). In the study of Tufan (17), the most frequently used non-pharmacological method for PMS by midwifery and nursing students was hot application, while the least used methods were aromatherapy, yoga, and meditation.

Although non-pharmacological methods that can be used for PMS are quite diverse (11), studies on non-pharmacological methods preferred by students in PMS are limited. Students should be informed and educated about various non-pharmacological methods that are accessible and easily applicable in PMS (17). This study was carried out to determine the non-pharmacological methods preferred by midwifery students who have PMS problems.

Research Questions

1. What is the incidence of PMS in midwifery students?

2. What are the non-pharmacological methods used by midwifery students with PMS?

Material and Methods

Type of the Study: This research was conducted in a cross-sectional descriptive type to determine the non-pharmacological methods used by midwifery students of a university who have PMS problems.

Place and Time: The study was carried out on the online platform between February and May 2021, as universities continue their education processes with distance education methods due to the pandemic.

Population and the Sample: The universe consisted of all midwifery students in the midwifery department of a university (n=326). All students between the ages of 18-40 who were midwifery students and met the criteria for voluntarily participating in the study were included in the sample (n=293). Participants who did not want to participate voluntarily in the study were excluded.

Data Collection Tools: Nonpharmacological Methods Questionnaire and Premenstrual Syndrome Scale used for collecting the data.

Nonpharmacological Methods Questionnaire: This form, which was prepared by the researchers using the literature (17-19), and consists of 33 questions

about sociodemographic characteristics and non-pharmacological methods applied in premenstrual syndrome.

Premenstural Syndrome Scale (PMSS): The scale was developed by Gençdoğan (20) based on DSM-III and DSM-IV-R criteria to detect the presence of PMS (1=Never, 2=Very little, 3=Sometimes, 4=Often, 5=Continuously). It is a scale consisting of 44 questions. The total score obtained from the scale varies between 44-220 and 0-44 points are evaluated as no PMS, 45-103 points as mild PMS, 104-163 points as moderate PMS, 164-220 points as severe PMS (20).

Data Collection: The data were collected on the online platform due to distance education. With the approval of the department chair, the online survey links were delivered to all students by determining when on which day and at what time they would be shared. "Premenstrual Syndrome Scale (PMSS)" and "Nonpharmacological Methods Questionnaire" were used for data collection. It took approximately 20 minutes for the participants to answer the scales and questionnaires.

Statistical Analysis: A statistical package program was used for data analysis. The normal distribution of variables was analyzed according to the Kolmogorov Smirnov test, data were analyzed using descriptive statistical methods (number, percentage, mean and standard deviation) and independent t-test, Mann-Whitney U test, One Way ANOVA, and Spearman correlation tests.

Ethical Approval: The principles of the Declaration of Helsinki were complied with in the study and online consent form was obtained from the participants. The study was approved by Istinye University Ethical Committee of Human Research (Protocol Number: 2020/135).

Results

Table 1 shows the sociodemographic characteristics of the participants. The mean age of the students participating in the study was 21.11±2.05, the mean body mass index (BMI) was determined to be 21.75±3.63. It was determined that 96.6% of the participants were single and 79.9% had a nuclear family, 76.8% of them lived with their families during the education period, and 68.6% of them had income equal to their expenses.

When the ages of menarche were questioned, it was found that 74.4% of them had menarche between the ages of 9-13. It was observed that the menstrual cycle length was between 21-35 days for 86.3% of the students and the mean menstrual cycle duration was between 3-10 days for 94.9% of them (Table 1).

In Table 2, the scores of the participants in PMSS and their PMS severity are given. The total mean score of the participants in PMSS was found to be 124.38±39.19 points, and when the severity of PMS was analyzed, it was found that 54.6% (n=160) of the participants had moderately severe PMS (Table 2).

Table 3 shows the findings regarding the non-pharmacological methods used by the participants for PMS. 27.3% of the participants preferred non-pharmacological methods, and 37.5% preferred both pharmacological and non-pharmacological methods. It was determined that PMS complaints decreased in 96.2% of the participants who exercised regularly for PMS. While 55.3% of the participants did not do any application to reduce the breast pain seen in PMS, it was observed that the practitioners mostly used unsupported bras (25.3%). It was determined that 51.9% of the participants consumed herbal teas for PMS, and it was seen that the most preferred herbal tea was lemon balm tea (30.8%). It was observed that 33.4% of the participants preferred hot water bags to reduce back, head, and abdominal pain in PMS. When the participants' use of the acupuncture method for PMS was questioned, it was determined that there were no participants using acupuncture. It was determined that only 10.6% of the participants applied aromatherapy and the method of application was massaging the painful area with the oil used for aromatherapy (28.1%). When the changes in eating habits in the premenstrual period were examined, it was seen that 51.5% of the participants increased their tendency to foods such as chocolate and pastry.

It has been determined that non-pharmacological methods are mostly used to relieve pain (66.6%), and information about non-pharmacological methods that can be used in PMS is mostly obtained through lectures (28.3%) and internet/social media (22.9%) (Table 3).

In Table 1, PMSS scores were analyzed according to the characteristics of the participants. It was determined that there was a statistically significant difference between the PMSS scores of the participants according to their grade levels (F:2.882; p:0.036), and according to this difference, the PMSS scores of the fourth-grade students were lower than the other grades.

Table 1. Characteristics of the Participants and Comparison with PMSS Scores				
Features		**Mean±S.D**	**Min-max**	**Test/p**
Age		21.11±2.05	18-38	*rs: -.000 / p: 0.089*
Height		163.64±5.49	147-183	*rs: 0.071 / p: 0.226*
Weight		58.34±10.54	41-115	*rs: 0.081 /p: 0.166*
BMI		21.75±3.63	14.19-36.30	*rs: -0.053 /p: 0.371*
		n	**%**	
Grade	1	67	22.9	***F: 2.882 / p: 0.036****
	2	88	30.0	
	3	82	28.0	
	4	56	19.1	
Income level	Less than expenses	34	11.6	*F: 1.046 / p: 0.352*
	Equal to expenses	201	68.6	
	More than expenses	58	19.8	
Social insurance	Yes	223	76.1	*t: 1.083 / p: 0.281*
	No	70	23.9	
Marital status	Single	283	96.6	*t: 1.140 / p: 0.255*
	Married	10	3.4	
Family type	Nuclear	234	79.9	*F: 1.565 / p: 0.211*
	Extended	39	13.3	
	Broken (divorced)	20	6.8	
Where do you stay during the training period?	With family	225	76.8	*F: 0.115 / p: 0.951*
	With relatives	14	4.8	
	Student home	19	6.5	
	At dormitory	35	11.9	
Weight range by BMI	Thin	50	17.1	*F: 0.688 / p: 0.601*
	Normal	193	66.1	
	Slightly obese	39	13.4	
	Moderately obese	9	3.1	
	Heavily obese	2	0.3	
Menarche age	<9	2	0.7	*t :-0.151 / p: 0.880*
	9-13	218	74.4	
	>13	73	24.9	
Frequency of menstrual period	<21 days	14	4.8	*F: 1.731 / p: 0.179*
	21-35 days	253	86.3	
	>35 days	26	8.9	
Length of menstrual period	<3 days	13	4.4	*t: 0.330 / p: 0.742*
	3-10 days	278	94.9	
	>10 days	2	0.7	
Are you sexually active?	Yes	17	5.8	*t: 0.197 / p: 0.846*
		276	94.2	
F: One Way ANOVA, t : independent t test				

Table 2. PMSS Scores			
Features		**Mean±S.D**	**min-max**
PMSS Total Score (44-220)		124.38±39.19	44-219
		n	%
PMS Severity	No PMS	5	1.7
	Low PMS	79	27.0
	Moderate PMS	160	54.6
	Severe PMS	49	16.7

Table 3. Non-pharmacological Methods Used by the Participants and Comparison with PMSS Scores				
Questions		**n**	**%**	**Test/p**
Which one would you apply for PMS?	Pharmacological methods	47	16.0	*KW: 4.053 p: 0.256*
	Non-pharmacological methods	80	27.3	
	Both	110	37.5	
	None	56	19.1	
Do you know about non-pharmacological methods?	Have no idea	36	12.3	*F: 1.571 p: 0.196*
	Little	100	34.1	
	Moderately	134	45.7	
	Too much	23	7.8	
Do you exercise regularly for PMS?	Yes	53	17.7	*t: -0.126 p: 0.900*
	No	240	82.3	
What methods do you use for breast pain during PMS?	Hot application	36	12.3	*F: 1.130 p: 0.343*
	Unsupported bras	74	25.3	
	Massage	17	5.8	
	Applying cabbage to breasts	4**	1.4	
	Nothing	162	55.3	
Do you apply to herbal teas during the PMS period?	Yes	159	51.9	*t: -1.369 p: 0.172*
	No	134	48.1	
If you are applying. which herbs and herbal teas do you consume the most? (n=159)	Mint tea	21	13.2	*F: 0.774 p: 0.544*
	Lemon balm tea	49	30.8	
	Ginger tea	17	10.7	
	Camomile tea	26	16.4	
	Other	46	28.9	
What methods do you use for your back-head-abdominal pain?	Herbal oils	21	7.2	*F: 1.157 p: 0.330*
	Hot water bag	98	33.4	
	Massage	49	16.7	
	Sash tying	19	6.5	
	Shower with hot water	66	22.5	
	None	40	13.7	
Do you use acupuncture for PMS?	No	239	100	**
Do you use aromatherapy for PMS?	Yes	32	10.6	*Z: -0.382 p: 0.702*
	No	261	89.4	

If so, what is your aromatherapy method? (n=32)	Massage to the painful area	9	28.1	*F: 0.220 p: 0.925*
	Dripping in bath water	5	15.6	
	Inhale the steam by dripping into the water	7	21.9	
	Applying essential oil to the wrists	7	21.9	
	Smelling	4	12.5	
What do you do to reduce swelling in your body?	Detox	41	14.0	*F: 0.492 p: 0.688*
	Sport	27	9.2	
	Abundant water consumption	147	50.2	
	Nothing	78	26.6	
How does your eating habits change in PMS?	Increase in fruit and vegetable consumption	22	7.5	*KW: 6.846 p: 0.232*
	Increase in tea. caffeine and carbonated beverage consumption	39	13.3	
	Increase in consumption of chocolate and pastries	151	51.5	
	Increase in nut consumption	30	10.9	
	Decreased appetite	32	10.9	
		19	6.5	
How do you manage mood swings in PMS?	Self-suggestion	50	17.1	*F: 1.136 p: 0.340*
	Sharing with relatives	38	13.0	
	Divert attention	60	20.5	
	Avoiding environments that cause mood changes	85	29.0	
	Nothing	60	20.5	
What is your purpose of using non-pharmacological applications in the premenstrual period?	To reduce pain	195	66.6	*F: 0.896 p: 0.444*
	To relieve	57	19.5	
	For being natural	41	13.9	
Where did you learn about non-pharmacological and pharmacological methods?	Internet/social media	67	22.9	*F: 1.210 p: 0.307*
	Healthcare professionals	45	15.4	
	Friend-family	63	21.5	
	Curriculum	83	28.3	
	All	35	11.9	

*F: One Way ANOVA test; t: student t test; KW: Kruskal Wallis test; Z: Mann Whitney-U test; **: Not included to analysis*

It was determined that there was no significant relationship between the participants' age (rs:-.000; p:0.089), weight (rs: 0.081 p:0.166) and height (rs:0.071; p:0.226) and PMSS scores. There was no significant difference between the PMSS scores according to the participants' income status, social security, marital status, family type, place of residence during the education period, age of first menstrual period, menstrual cycle length, and frequency, and being sexually active (p>0.05).

In Table 3, the PMSS scores of the participants and the non-pharmacological methods they applied were compared. According to this; it was observed that there was no significant difference between the PMSS scores of the participants according to the non-pharmacological method they preferred for PMS, the purpose of using these methods, and the sources of information (p>0.05).

Discussion

In this study, it was determined that the mean score of the participants in PMSS was 124.38±39.19 points, and 54.6% of the participants had moderately severe PMS. In response to the research question, it was determined that 98.3% of midwifery students had PMS problems. In Çıtak's (21) study, the mean PMSS score was 116.96±31.06. In the study of Uçar (22), it was found that women with PMS got an average of 129.67±19.17 points from PMSS. In Akmalı's (23) study, it was determined that women of reproductive age scored an average of 111.42±35.88 on PMSS. The mean PMSS score in Erbil's study (24) was 120.82±33, and it was 122.05±33.93 in Şener's (25) study. The PMSS score obtained in our study is similar to the study of Şener and Erbil.

It was determined that 74.4% of the participants had their first menarche between the ages of 9-13. According to Gökçe (26), the age of menarche in 87.6% of the participants is 10-15 years. In the study of Kısa, et al. (18), the mean age of menarche was found to be 13.21 years. This finding obtained in our study is similar to the literature. In our study, 86.3% of the students had menstrual cycle length between 21-35 days. In Şener's study (25), it was found that 57.9% of his students had a menstrual cycle between 28-31 days. In Vatansever's study (12), 80% of the students stated that the cycle duration was between 22-34 days. A normal menstrual cycle period is 22-30 days (27). According to this result, the menstrual cycle length obtained in our study is similar to the literature.

It was found that 27.3% of the participants used non-pharmacological methods for PMS, while 37.5% used both pharmacological and non-pharmacological methods. In Tufan's study (17), 76.2% of the students stated that they primarily used non-pharmacological methods in the premenstrual period. In response to the research question, the most commonly used non-pharmacological methods were determined as herbal tea, plenty of water consumption, hot application, and hot water bag. In Tufan's study, hot application, sleeping/resting, and taking a shower are preferred the most (17). The data in our study are similar to the literature.

It was determined that 51.9% of the participants applied to herbal teas for PMS complaints, according to Dönmez and Gümüşsoy (28) 34.5% of the participants in the study applied to herbal teas. In our study, 50.2% of the participants consume water to reduce swelling in the body. According to Topatan and Kahraman (29), 34.2% of the participants drank plenty of warm water and herbal tea. The data in this study are similar to the literature.

There were no participants using acupuncture in this study. Jang et al. (30) found that the application of acupuncture in the luteal or follicular phase reduced PMS symptoms by 50% or more. Armour et al. (31) mention in their review that acupuncture can reduce PMS symptoms. It is seen that our study is not similar to the literature. It is thought that this situation is due to the lack of knowledge of the participants about acupuncture and the cost of acupuncture application. The rate of participants using aromatherapy for PMS complaints was 10.6%. The rate of participants using aromatherapy in Tufan's (17) study was 3.1%. and Turan et al. (32) found that aromatherapy prevented pain in PMS. In the study of Uzunçakmak and Alkaya (33), lavender oil inhalation was found to be effective on PMS. In the study of Bolsoy (34), the most frequently used oils in aromatherapy are; evening primrose and lavender oil. Our study is similar to the literature.

It was found that 33.4% of the students preferred hot water bags to reduce back, head, and abdominal pain in PMS. In the study of Aşçı et al. (35), one of the three most commonly used methods in dysmenorrhea is applying heat to the abdomen. In the study of Tufan (17), the most frequently used non-pharmacological method in the premenstrual period is hot application (75.6%). In this direction, the rate of application of heat to the waist, head, and abdomen is similar to the literature.

It was determined that 17.7% of the participants exercised regularly. According to Çitil and Kaya (36), the rate of midwifery students who exercise regularly is 20.8%. It was determined that 40% of the participants in Yeşildere Sağlam's (37) study exercise. Our study was similar to study performed by Çitil and Kaya (36). When the nutritional habits of the students in the premenstrual period were examined, it was found that the consumption of chocolate and pastry foods increased by 51.5%. In the study of Selçuk et al. (38), the prevalence of PMS is high in those who consume fast food the most frequently. It was determined that the participants mostly (29.0%) preferred the option of "staying away from environments that would cause mood changes" in the management of mood changes in PMS. In the study of Özmermer (39), 40.9% of the participants stated that for mood management; and they applied massage, music, rest, and exercise.

Conclusion

More than half of the students had moderate PMS, 27.3% of the students preferred non-pharmacological methods for PMS complaints, and 37.5% preferred non-pharmacological methods in addition to pharmacological methods. The participants mostly used non-pharmacological methods to relieve pain. The non-pharmacological applications preferred by the participants for PMS complaints were herbal teas, aromatherapy, hot compresses, and massage. It has been found that the situation of doing regular exercise is very low, students' awareness of exercise should be increased. Consumption of chocolate and pastry increases in eating habits during the PMS period and it is thought that this affects PMS, therefore it is recommended to improve eating habits. It was observed that none of the students preferred acupuncture. In reducing PMS symptoms, students should be given more information about non-pharmacological methods and they should be enabled to use these methods effectively. There is a need for multidisciplinary and multidimensional studies on nonpharmacological methods in PMS.

Declarations

Funding

'Not applicable'.

Conflict of Interest

'Not applicable'.

Ethics Approval

The study was approved by Istinye University Ethical Committee of Human Research (Protocol Number: 2020/135).

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Availability of Data and Material (Data Transparency)

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Authors' Contributions

EB and RGK: Design, EB: Literature search, EB: Data collection and interpreting, EB and RGK: Statistical analysis and reporting EB, and RGK: Writing, EB and RGK: Critical reading.

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