Original Article

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Premenstrual Syndrome Experiences and Coping Levels of University Students: A Mixed Method Study

Üniversite Öğrencilerinin Premenstrüel Sendrom Deneyimleri ve Başa Çıkma Düzeyleri: Karma Yöntem Çalışması

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ABSTRACT

Objective: Premenstrual syndrome (PMS) is common among young female university students. Determining students' PMS experience and coping levels with them can contribute to the development of effective strategies. This research was carried out to determine the premenstrual symptoms, coping experiences of the students with them and coping levels of the students experiencing PMS.

Methods: This research is in a mixed method design that includes quantitative and qualitative data collection methods. The number of participants was 436 students. Quantitative data of the study were collected through an introductory information form, premenstrual coping measure (PCM), and qualitative data were collected through individual interviews using a semi-structured form.

Results: The mean age of the participants was 20.65±1.68, mean age at menarche was 12.96±1.22. The rate of students experiencing PMS frequently was 41.1%, the rate of those who had regular menstruation was 73.9%, and the rate of those with dysmenorrhea was 90.3%. The most common symptoms were anxiety (73.4%), fatigue (72.3%), breast tenderness (71.1%), appetite changes (70.6%). The students' coping skills with PMS were at a good level. The highest PCM sub-dimension score was in the self-care (14.82±3.81) and awareness and acceptance of premenstrual change (34.49±7.86) dimensions. Strategies used by students to cope with PMS included practices such as conflict avoidance, being alone, rest, sleep, massage, exercise and drinking herbal tea.

Conclusion: This study showed students' common PMS symptoms and coping strategies with thme. Health professionals should be

ÖZ

Amaç: Premenstrüel sendrom (PMS), üniversite öğrencisi genç kadınlarda yaygındır. Öğrencilerin PMS deneyimlerini ve bunlarla baş etme düzeylerini belirlemek etkili stratejilerin geliştirilmesine katkıda bulunabilir. Bu araştırma, PMS yaşayan öğrencilerin yaşadıkları premenstrüel belirtileri, bunlarla başa çıkma deneyimlerini ve başa çıkma düzeylerini belirlemek amacıyla yapılmıştır.

Yöntemler: Bu araştırma nicel ve nitel veri toplama yöntemlerini içeren karma yöntem tasarımındadır. Katılımcı sayısı 436 öğrencidir. Araştırmanın nicel verileri tanıtıcı bilgi formu ve premenstrüel semptomlarla baş etme ölçeği (PSBÖ) ile nitel veriler ise yarı yapılandırılmış form kullanılarak yapılan bireysel görüşmelerle toplanmıştır.

Bulgular: Katılımcıların ortalama yaşı 20,65±1,68, ortalama menarş yaşı 12,96±1,22 idi. Sık sık PMS yaşayan öğrencilerin oranı %41,1, düzenli adet görenlerin oranı %73,9 ve dismenore yaşayanların oranı %90,3 idi. En sık görülen premenstrual semptomlar anksiyete (%73,4), yorgunluk (%72,3), meme hassasiyeti (%71,1) ve iştah değişikliği (%70,6) idi. Öğrencilerin PMS ile başetme becerileri iyi düzeydeydi. En yüksek PSBÖ alt boyut puanı öz bakım (14,82±3,81) ve premenstrüel değişimin farkındalığı ve kabulü (34,49±7,86) boyutundaydı. Öğrencilerin PMS ile baş etmede kullandıkları stratejiler arasında çatışmadan kaçınma, yalnız kalma, dinlenme, uyku, masaj, egzersiz, bitki çayı içme gibi uygulamalar yer alıyordu.

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ABSTRACT

aware of students' problems and provide comprehensive health services that support them coping with PMS.

Keywords: Coping skills, premenstrual syndrome, students

ÖZ

Sonuç: Bu çalışmanın sonuçları, öğrencilerin genel olarak deneyimledikleri PMS semptomlarını ve başa çıkma stratejilerini göstermiştir. Sağlık profesyonelleri öğrencilerin sorunlarının farkında olarak PMS ile baş etmeyi destekleyen kapsamlı sağlık hizmetleri sunmalıdırlar.

Anahtar Sözcükler: Başa çıkma yöntemleri, premenstrüel sendrom, öğrenciler

Introduction

Menstruation is a cyclical physiological process and a natural part of women's life. In this cyclical process, physical and psychological changes can be seen in women (1). Premenstrual syndrome (PMS) is characterized by somatic and psychological symptoms that occur in the luteal phase of the menstrual cycle and decrease with menstruation (2). Women with PMS experience psychological and physiological symptoms that cause severe dysfunction in social or occupational realms (3). Among the most common symptoms are changes in appetite, skin changes, breast tenderness, headache, dizziness, abdominal cramps, abdominal bloating, nausea, constipation, diarrhea, anxiety, irritability, anger feeling, difficulty concentrating, fatigue, loss of energy, sleep changes, restlessness, crying, loss of productivity and mood swings (1,4-7).

PMS affects millions of women of reproductive age worldwide, including in Turkey. In a meta-analysis, the prevalence of PMS was 47.8%. The lowest prevalence in the study was reported in France (12%), and the highest prevalence in Iran (98%) (8). The prevalence of PMS was found to be 18.4% among university students in India (4), 37.9% in Ethiopia (5), 87.1% in Egypt (9), 33.8% in China (10). In different studies conducted in Turkey, the prevalence of PMS among university students was reported between 36.4% and 76.2% (11-14). PMS, which is more common among university students, negatively affects academic performance levels (4,15). In the study of Tolossa and Bekele (7) 28.3% of young female university students reported frequent class missing, 9.8% exam missing, 18.1% low grade scoring, and 1.7% reported withdrawal from their learning associated with their PMS.

Although there is no definitive treatment for PMS, most of the symptoms can be treated (1). Pharmacological and non-pharmacological methods reduce premenstrual symptoms (3,16,17). Among the methods commonly used by women to cope with PMS are rest, sleep, hot application, analgesics, massage, diet change, and exercise (5,6).

PMS is an important and common problem that negatively affects the quality of life (18). Supporting the coping skills of young women with PMS can positively affect their quality of life, protecting their physical and mental health. Therefore, learning the coping level and coping skills of young women with PMS is essential both in research and clinical terms. There are studies on PMS symptoms and coping methods in university students in Turkey (6,19). However, coping experiences have not been examined in detail. Combining qualitative and quantitative research methods can increase understanding of perceptions, experiences, and coping skills about PMS. This research was carried out to determine the premenstrual symptoms, coping experiences of the students with them, and coping levels of students experiencing PMS at a public university in Turkey. This research used qualitative and quantitative data collection methods to explore PMS experiences and coping.

Methods

Study Design

This research used the mixed method to determine the university students' experiences of PMS and their coping levels. In this design, quantitative and qualitative data were collected simultaneously, analyzed separately, and then the results were mixed during the interpretation of the data (20).

Sample Size and Sampling

The universe and sample of this study consisted of female students studying in the Faculty of Health Sciences of a university in the Black Sea Region of Turkey. The number of students enrolled at the time of data collection was 2,605. The sample size was determined as 360 students with 95% confidence interval, 5% marginal error and 50% response rate (on the Raosoft website). A total of 436 female students participated in the research between April 2022 and June 2022.

Inclusion criteria: Being 18 years and older, participating voluntarily in the research, communicating in Turkish.

Exclusion criteria: Students who did not speak Turkish, students who were pregnant and lactating, students who had depression and/or psychiatric illness, and students with amenorrhea.

Descriptive Data Form

The research data were collected with introductory information form and premenstrual coping measure (PCM).

Introductory information form this questionnaire, which consisted of 18 questions, was a form in which the students' sociodemographic characteristics, their specific nutritional habits (tea, coffee, smoking, alcohol), their menstrual periods,

their ways to deal with PMS, and their symptoms of PMS were questioned (5,6).

Premenstrual coping measure: It was developed by Read et al. (21) to evaluate the ability to cope with PMS in women aged 18-49 years. The Turkish validity and reliability of the scale was performed by Abay and Kaplan (22). The scale is a five-point Likert type (1= not applicable to me, 5= almost always applicable to me) has 27 items and six sub-dimensions. The content validity index of the scale was determined as 0.997. Cronbach's alpha coefficient was between 0.751-0.890. As the score obtained from the sub-dimensions of the scale increases, the level of coping with PMS increases. The PCM provides premenstrual coping subscales scores, but use of a total coping score calculated from these subscales is not recommended. The focus of the measure is on ways of coping, not amount of coping, and the subscale scores provide this information.

Data Collection

Female students were distributed anonymized questionnaires after obtaining the necessary permissions to conduct the research. Participants were asked to answer the questions one by one. Data collection took approximately 5-10 minutes. After applying the questionnaires, semi-structured interviews were conducted with 20 female students in the qualitative part of the research. The average twenty-minute interviews were conducted face to face by an experienced researcher (EKE). Three open-ended questions were asked to the participants in the individual interviews (What are the symptoms you experience in the premenstrual period? How do you think these problems affect your quality of life? What methods do you use to deal with premenstrual symptoms?). All interviews were audio recorded. All interviews were transcribed verbatim immediately after the interview. Data collection was stopped when no new information emerged from the interviews, assuming data saturation was reached.

Statistical Analysis

Data were analysed via SPSS (v.20) software. The distribution of data was investigated with the Kolmogorov-Smirnov test. Mann-Whitney U, Kruskal-Wallis test, chi-square test were used in the analysis of the data. The categorical variables were presented as frequency and percentages. For continuous variables, data were expressed as mean ± standard deviation, median, and range (minimum-maximum). Results were at 95% confidence interval and significance level was $p<0.05$.

Qualitative Data Analysis

As regards qualitative data, content analysis was used (23). In this process, data were read repeatedly to reach a holistic understanding, similar and different expressions were brought together to form codes and themes and subthemes were reached by organizing similar and different codes. The Lincoln and Guba (24) criteria were used for the rigor of findings. In the study, the researchers separately coded the data. For the confirmability of the results, opinions were obtained from an independent researcher about the codes, sub-themes and themes. The results were presented with strong citations in line with the findings to ensure credibility in the study. The transferability of the research process, sample, and data analysis were explained in detail.

Results

Quantitative findings

The mean age of the participants was 20.65±1.68 (18-29) years; 97.8% were single, their income was equal to expense in 61.0% and 72.2% were staying in dormitories. The body mass index of most of the participants (74.1%) was between 18.5 kg/m^2 and 24.9 kg/m^2. According to findings, 14.2% of the students smoked, and 83.7% did not exercise regularly. The descriptive characteristics of the students are presented in Table 1.

The mean age of menarche of the students was 12.96±1.22 9-17. The rate of regular menstruation was 73.9%. Most of the

Table 1. Socio-demographic characteristics of study participants (n=436)

Variables		n	%
Mean age	20.65±1.68 (18-29)		
Marital status	Single	427	97.9
	Married	9	2.1
Income level	Income less than expense	144	33.0
	Income equal to expense	266	61.0
	Income more than expense	26	6.0
Residence	With family	86	19.7
	In the dorm	315	72.2
	At home with friends	35	8.0
Body mass index (kg/m^2)	<18.5	43	9.9
	18.5-24.9	323	74.1
	25-29.9	53	12.1
	30-39.9	16	3.7
	<40	1	0.2
Smoking	Yes	62	14.2
	No	374	85.8
Alcohol	Yes	25	5.7
	No	411	94.3
Do you drink tea daily?	Yes	396	90.8
	No	40	9.2
Do you drink cofee daily?	Yes	350	80.3
	No	86	19.7
Do you drink fizzy daily?	Yes	279	64.0
	No	157	36.0
Regular physical excercise	Yes	71	16.3
	No	365	83.7
Do you have a chronic disease?	Yes	23	5.3
	No	413	94.7

students were experiencing dysmenorrhea (91.3%). The rate of students experiencing PMS frequently was 41.1%. The most common symptoms were anxiety (73.4%), fatigue (72.3%), breast tenderness (71.1%) and appetite changes (70.6%). To cope with PMS, 72.7% of the students used relaxation practices (massage, bath, etc.), 63.8% rested, and 58.3% shared problems with family/friends (Table 2).

Table 2. Participants' menstrual period, PMS symptoms and their coping characteristics

Variables		n	%
Menarche age	<13	171	39.2
	13-15	254	58.3
	16-18	11	2.5
Menstrual cycle	Regular	322	73.9
	Irregular	114	26.1
Dysmenorrhea	None	38	8.7
	Mild/moderate	259	59.4
	Severe	139	31.9
PMS status	Sometimes	257	58.9
	Constantly	179	41.1
PMS symptoms*	Anxiety	320	73.4
	Fatigue	315	72.3
	Breast tenderness	310	71.1
	Appetite changes	308	70.6
	Groin cramps	304	69.7
	Feel blue	297	68.1
	Depressive thoughts	274	62.8
	Edema	266	61.0
	Skin change	224	51.4
	Increase in body temperature	196	45
	Difficulty concentrating	176	40.4
	Sleep change	177	40.0
	Pessimism	148	33.9
	Stomach cramps	143	32.8
	Diarrhea	104	23.9
	Nausea-vomiting	97	22.3
	Constipation	60	13.8
Strategies of coping with PMS*	Relaxing treatments (massage, sleep, bath, etc.)	317	72.7
	Having a rest	278	63.8
	Sharing problems with family/friends etc.		58.3
	Taking pain killers	166	38.1
	Doing relaxation exercises	159	36.5
	Paying attention to diet	93	21.3

*Multiple response
PMS: Premenstrual syndrome

A significant difference was found between experiencing dysmenorrhea and PMS (χ^2=5.809, p=0.016). There was no difference between the student's sociodemographic characteristics, nutritional habits, menarche age, menstrual cycle and their PMS experience (p>0.05). The PCM sub-dimension scores of the students are shown in Table 3. The highest PCM sub-dimension score was in the self-care dimension (14.82±3.81) and awareness and acceptance of premenstrual change dimension (34.49±7.86).

Qualitative Findings

According to the qualitative findings, two themes and four sub-themes were determined for premenstrual symptoms and coping methods. The themes identified in this study were "PMS experience" and "experience of coping with PMS."

PMS Experience

The theme of "PMS experience" included "psychological symptoms" and "physical symptoms" sub-themes.

Psychological Symptoms

All interviewed students experienced emotions such as anger and anxiety in the premenstrual period. In addition, the feeling of crying, reluctance, and depressed were among the other symptoms. Some students expressed that:

I don't feel like doing anything. I want to cry and I feel anger. I don't want to talk to people. All this starts 2 or 3 days before the period (20 years old).

I feel very touchy a week before my period. When my friends say something, I wonder if they are talking about me, and I get sorry (20 years old).

Some other students who stated that they felt anger in the premenstrual period explained as follows:

I feel furious. Also, I feel sad. It starts 3-4 days before my period and continues for 3-4 days after it ends. I can't cope with it (21 years old).

Table 3. Participants' PCM sub-dimension scores

PCM sub-dimension	Mean ± SD	Min-max
Avoiding harm	20.83 ± 6.29	7-35
Awareness and acceptance of premenstrual change	34.49 ± 7.86	9-45
Adjusting energy	8.79 ± 2.91	3-15
Self-care	14.82 ± 3.81	4-20
Communicating	12.36 ± 4.13	4-20

PCM: Premenstrual coping measure, SD: Standard deviation, Min: Minimum, Max: Maximum

I feel unfortunate and cry unnecessarily. I'm getting angry unnecessarily. I experience both happiness and anger at the extremes. These symptoms start a week before my period and worsen three days before (22 years old).

Physical Symptoms

Physical symptoms experienced by students included edema, distension, breast tenderness, pain in the abdomen and legs, oily skin, acne, loss of appetite, nausea-vomiting, diarrhea, and weakness. Some students said that:

My breasts are getting very distension. My stomach is swelling. My acne is coming out. My skin is getting oily. When I sweat, my body odor is change (22 years old).

Three or four days before my period, I feel tenderness, swelling, and pain in my groin. My breasts are getting swollen and tender. When someone hugs me, I say don't hug me too hard. I can't eat when my period is near. I think I feel full. I usually eat sweets (26 years old).

Another student said that:

Two weeks before my period, my breasts get tension. I feel pain in my legs and back. I am uncomfortable while sleeping. I wake up in pain. Also, my appetite is increasing. I overeat. It doesn't matter if it's sweet or salty (22 years old).

Experience of Coping with PMS

The theme of "Experience of coping with PMS" included "avoidance of stress and conflict" and "making relaxation practices".

Avoidance of Stress and Conflict

Participants stated that they used practices such as staying away from people, being alone, listening to music, watching TV, using the telephone, etc., in order to avoid conflict. Some students expressed that:

Premenstrual problems affect my relationships with people. I tell my friends I'm not feeling well. I don't want to and talk to them. I go to my room and sleep. I want to be alone. I love doing sports. It relaxes me (22 years old).

I don't want to communicate with people. Because I can break their hearts. I get angry sometimes. That's when I watch movies. I'm busy with the phone. I rest or sleep (23 years old).

A student explained that she was trying to relax by writing down her feelings. She sait that;

Wait for the panic to pass, move on with your life; that's my logic. I feel depressed. My life is getting very hard when I am walking around aggressively. I can't tell anyone what I feel. I hold it inside, I lie down on my pillow and cry. I like to write. I write my feelings so that there is no resentment. After I write, I delete it and get away from this feeling (21 years old).

Another student explained that she enjoyed the symptoms she experienced.

I am feeling emotional and crying. I love this situation so much that I cry and relax. I don't want to feel like I'm different than usual. I like to know that there is something in my body (22 years old).

Making Relaxation Practices

The students' practices for relaxation included drinking herbal tea, sleeping, resting, hot application, taking painkillers, walking, doing sports.

Massage is good for my stomach and legs, doing sports relaxes me (19 years old).

I am drinking herbal tea. I drink lime tea, chamomile tea, ginger, and fennel. I think it relaxes. After drinking tea, I lie down and relax. I take painkillers if I have a lot of pain (22 years old).

A student stated that she tried to relax by resting as follows;

If there is something I have to do, I will do it. I'm postponing what I can expect. I never want to move. I want to rest beforehand as I will have more difficulty when I get my period (20 years old).

Discussion

This study aimed to provide information about PMS and coping experiences in university students. It was determined that 58.3% of the student's menarche age was between 13 and 15 (mean =12.96±1.22), 73.9% had regular menstruation cycles and 91.3% (mild/moderate 59.4%, severe 31.9%) experienced dysmenorrhea. In a study, it was determined that 92% of university students with PMS were between 13-16 years of age at menarche, 98% (41% severe, 57% mild-moderate) experienced dysmenorrhea and 35.1% had regular menstrual cycles (25).

In Turkey, Aba et al. (26) determined that the age of menarche was 13.25±1.32. Karabulutlu (27) determined that 86.4% of students experienced dysmenorrhea. Bakir and Yang (28) determined that 73.3% of university students were between 13-15 years of age at menarche, 87.6% had regular menstruation cycles and 81.4% experienced dysmenorrhea.

PMS is a common problem among female university students. This study determined that 41.1% of university students experienced PMS in each menstrual cycle. The most common symptoms experienced by the students included anxiety, feeling sad and depressed, fatigue, breast tenderness, changes in appetite, pain in the abdomen and groin. Results of the studies in the literature are similar to our study results. Eshetu et al. (5) determined that the most common premenstrual symptoms experienced by students were abdominal cramp (78.8%), depression (73.3%) and fatigue (72.9%). According to Hashim et al. (29), depressed mood (95%), lethargy/fatigue/decreased energy (92%), muscle, joint, abdominal and back pain (89.3%), feelings of anger (85.7%) and craving for certain foods (84.7%) were frequently experienced by students with PMS. Mohib et al. (30) determined that students experienced irritability (81.7%), angry outbursts (66.9%), depression

(53.1%), anxiety (46.9%), skin problems (42.7%) and breast tenderness (39.6%). In a study conducted in Turkey, the most common symptoms experienced by students with PMS were anxiety (76.4%), edema (72.7%), also/weakness (70.8%), and pain (60.2%) (6). Similar results were found in different studies (1,4,28).

In this study, all sub-dimensions of the students' PCM scores were at a good level. In addition, the highest score was in the sub-dimensions of self-care, awareness and acceptance of the premenstrual change. The awareness and acceptance of the premenstrual change subdimensions address the way a woman copes by being aware of both physical and emotional changes, accepting that they are a normal part of her experience. The self-care subdimension describes a coping style which involves a woman focusing on her own physical and emotional needs by engaging in activities which make her feel more comfortable and relaxed (21). This study involving interviews with women with PMS revealed that women used a range of coping strategies to reduce or avoid distress. These included avoiding stress and conflict, being alone, and not expressing anger. Sleeping, resting, having showers, taking painkillers, drinking herbal tea, exercising were the most commonly identified other coping strategies in this research. All of these strategies supported PCM subdimensions. In a qualitative study supporting the above findings, women's coping strategies with PMS included stress avoidance, self-care, being alone, not expressing anger, seeking social support, and taking supplements or medication (31). In a study conducted in Ethiopia, it was determined that university students most frequently used strategies such as taking rest (67.6%) and sleeping (60.7%), applying hot packs (29.5%) and taking anti-pain drugs (28.1%) (5). In a study conducted in Pakistan, it was determined that 49.4% of university students did nothing to cope with PMS, 41% took painkillers, 17.7% exercised, and 13.8% used traditional medicines (30). In Korea, it was determined that young women frequently used practices such as sleeping (79.7%), showering (69.1%) and overeating (54.4%) to cope with PMS (32). In Turkey, Yorulmaz and Karadeniz (6) determined that 35.9% of students used hot application, 23.4% took rest, 10.9% took painkillers. When the results of this research and literature are examined, it is seen that various methods are used to relieve PMS symptoms, and there are similarities between them.

Conclusion

This study determined that the most common premenstrual symptoms experienced by students were anger and anxiety. The most common physical PMS symptom was breast distension/tenderness. The intense feeling of anger affected the students' interpersonal relationships. To cope with this situation, students preferred to avoid stress and conflict, and to be alone. The results of this study point to the importance of health professionals being aware of students' problems and providing comprehensive services. It is recommended to increase studies using qualitative and quantitative approaches, including the effectiveness of coping strategies with PMS.

Ethics

Ethics Committee Approval: Ethical permission (ethics committee permission number: 2022-194) from the relevant Ondokuz Mayıs University Social and Human Sciences Research Ethics Committee, institutional permission from the Faculty of Health Sciences.

Informed Consent: Written informed consent from the participants wasz obtained for the study

Peer-review: Externally peer reviewed.

Authorship Contributions

Concept: E.K.E., Design: E.K.E., M.K., Data Collection or Processing: E.K.E., Analysis or Interpretation: E.K.E., M.K., Literature Search: E.K.E., M.K., Writing: E.K.E., M.K.

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