

## Functional and emotional disturbances of university students with dysmenorrhea and their health-seeking behaviors

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### ABSTRACT

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**Introduction:** Dysmenorrhea is a common gynecological health problem in young individuals.

**Purpose:** To determine the functional and emotional disturbances of university students with dysmenorrhea and their health-seeking behaviors for dysmenorrhea.

**Materials and methods:** The research was carried out with 437 students between November 2021 and January 2022. Data were collected with an individual introduction form, a visual analog scale to determine the severity of dysmenorrhea, and the Functional and Emotional Measure of Dysmenorrhea. In addition, data were evaluated with Mann Whitney U, Kruskal Wallis, and Spearman correlation tests.

**Results:** The mean age of the students was 20.25±1.37, and 96.8% of them had experienced dysmenorrhea at least once in their menstrual period in the last six months. The score of the students on

FEMD subscales were 25.11±7.46 (7-35) for functional disturbance and 21.00±7.84 (7-35) for emotional disturbance. There was a strong and significant positive correlation between the two subscales. In addition, 21.3% of the students had consulted a doctor due to dysmenorrhea; 43.9% had always used analgesics; 34.3% had sometimes used analgesics; 85.8% had applied non-drug methods for pain.

**Conclusions:** Dysmenorrhea is quite common among university students. Students' functional and emotional disturbance levels increase as the severity of dysmenorrhea increases. As a health-seeking behavior, they had mainly used non-pharmacological methods.

**Keywords:** Student, dysmenorrhea, pain, menstruation

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## INTRODUCTION

Dysmenorrhea is defined as pelvic pain associated with menstruation. This colic-like pain is usually felt in the lower abdomen, and symptoms such as dizziness, vomiting, fatigue, and insomnia can often accompany the pain [1].

Dysmenorrhea is classified into two categories. Primary dysmenorrhea is usually seen after ovulation cycles and is not due to pelvic pathology. Secondary dysmenorrhea is associated with pelvic pathology [2].

Dysmenorrhea is a common gynecological problem in young individuals [3-5]; its prevalence was 71.1% in a systematic review study [6]. Especially, it negatively affects university students in activities such as fulfilling their daily routine roles, attending school, academic success, communicating with family and friends, and sports activities [6-8].

Students resort to various health-seeking behaviors to cope with dysmenorrhea [9]. Health-seeking behavior is defined as any action taken by an individual who thinks he/she has a disease or a health problem to find a suitable solution for this situation [10]. Individuals with dysmenorrhea may exhibit health-seeking behaviors such as applying to hospitals, using drugs on their own and applying herbal treatments [9,11,12].

In Turkey, Yilmaz et al. (2020) reported that dysmenorrhea students mostly use non-drug pain relief methods [13].

Süt et al. (2019) found that more than half of the students with dysmenorrhea use complementary and alternative therapy [14]. In another study, Kizilirmak et al. (2019) stated that students use more painkillers to reduce dysmenorrhea[15].

Dysmenorrhea is a gynecological problem because of its high prevalence and effects. Some studies in the literature focused on the effects of dysmenorrhea on daily life; however, studies on health-seeking behaviors are limited. Especially in Turkey, there are data on the status of students with dysmenorrhea going to a health institution or consulting a health care professional. For this reason, this research was carried out to determine the emotional and physical disturbances of dysmenorrhea among students receiving education at a university in western Turkey and their health-seeking behaviors.

## MATERIALS AND METHODS

### Design

This cross-sectional and descriptive study was conducted at the Ege University Nursing Faculty in Izmir, Turkey, between November 2021 and January 2022.

### Participants

The research population consisted of a total of 1327 students receiving education at the Nursing Faculty. This faculty was preferred since the researchers had easy access to the sample, and this faculty had the highest number of female students. The sample size was calculated using the formula for known population ( $n = (t^2 \times Pq) / d^2$ ); the prevalence of dysmenorrhea was taken as 85% [16], and the sample size was determined as 195. It aimed to include approximately 30-40% of students from each grade to avoid data loss. After obtaining written permission from the faculty, the students were invited to study between the lessons. The study was completed with 437 volunteer students selected by convenience sampling technique.

Female students who had regular menstrual cycles and volunteered were included in the study. Those with mental illness, secondary dysmenorrhea, or other gynecological problems were excluded from the study.

### Measurements

Research data were collected by face-to-face survey method. The data were collected with an individual introduction form, including questions on the introductory characteristics of the students, the Visual analog scale (VAS) to determine the severity of dysmenorrhea, and the Functional and Emotional Measure of Dysmenorrhea (FEMD).

### Individual Introduction Form

The form questions the students' age, grade, employment status, economic status, age at menarche, severity, and duration of dysmenorrhea. The severity of dysmenorrhea was assessed with VAS [17]. In addition, the female students participating in the research were asked to mark their pain level on a 10-cm ruler of VAS, one end indicating painlessness and the other end indicating the most severe pain. The form also includes questions about the health-seeking behaviors related to dysmenorrhea, such as consulting a doctor, drugs, and non-drug pain relief methods.

### FEMD

The 14-item scale used to evaluate dysmenorrhea is a Likert-type scale with two subscales as functional and emotional disturbance [18]. Each item is scored from 1 to 5, and a minimum of 7 and a maximum of 35 points can be obtained from each subscale. As the score obtained from the scale increases, the level of disturbance of the individual also increases. The validity and reliability study of the scale was performed by Gun (2014), and the Cronbach alpha coefficient was found to be 0.91 [19]. In this study, the Cronbach alpha coefficient was 0.95 for the overall scale, 0.92 for the functional disturbance subscale, and 0.91 for the emotional disturbance subscale.

### Data analysis

The data were evaluated in the Statistical Package for Social Science (SPSS) 24 package program. Descriptive data were presented with numbers and percentages. The mean, standard deviation, minimum and maximum scores of the FEMD subscales were calculated. Next, the fitness of the data to normal distribution was evaluated with the Kolmogorov-Smirnov test. Since the data did not show normal distribution, the relationship between categorical variables and FEMD scores was tested with Mann-Whitney U and Kruskal Wallis tests. Finally, the Spearman correlation coefficient calculated the correlation between continuous variables and FEMD scores. The results were evaluated at the 95% confidence interval with a  $p < 0.05$ .

### Ethics

In order to conduct the research, approval (dated 10.28.2021, numbered 12/04) was obtained from the Health Sciences Scientific Research and Publication Ethics Committee of Ege University,

and written institutional permission was obtained from the faculty. Furthermore, the purpose of the study was explained to the students, and their verbal and written consent was taken.

## RESULTS

### Descriptive characteristics

The mean age of the students was  $20.25 \pm 1.37$  (17-22); the economic status of 56.3% of them was moderate; 96.8% were not employed in any job. The mean age of the first menstrual period was  $12.94 \pm 1.18$ , and 96.8% of the students stated that they had experienced dysmenorrhea at least once in their menstrual period in the last six months. The severity of dysmenorrhea in the last menstrual period, which was evaluated with VAS, was determined as  $6.26 \pm 2.24$  (Min: 0, Max: 10), and 51.5% stated that the pain was primarily experienced in the first three days of menstruation (Table 1).

**Table 1.** Data related to descriptive characteristics and functional and emotional disturbance scores

	n (%)	Functional Disturbance	Emotional Disturbance
<b>Economic status</b>			
Good	34 (7.8)	25.17±7.52	22.23±8.25
Moderate	246(56.3)	25.02±7.39	20.38±7.52
High	157(35.9)	25.25±7.61	21.71±8.19
		KW:3.627/ p:0.891	KW:0.232/ p:0.163
<b>Employment status</b>			
Employed	14(3.2)	23.71±4.58	20.57±5.50
Unemployed	423(96.8)	25.16±7.54	21.02±7.91
		U/Z:2394.00/ -1.221	U/Z:2878.00/ -0.178
		p:0.222	p:0.859
<b>Severity of dysmenorrhea (VAS scores)</b>	6.26±2.24 (0-10)	r:0.555 <b>p:0.001</b>	r:0.533 <b>p:0.001*</b>
<b>Time of dysmenorrhea</b>			
First day			
First 3 days	190(43.5)	24.00±8.14	19.95±7.99
Always	225(51.5)	25.77±6.87	21.55±7.67
	22(5.0)	28.04±5.49	24.50±6.91
		KW:6480 / <b>p:0.039**</b>	X <sup>2</sup> :8.631/ <b>p:0.013**</b>

r: Spearman correlation coefficient, KW: Kruskal Wallis test, U/Z: Mann Whitney U test, \* $p < 0.01$ , \*\* $p < 0.05$

### Mean FEMD scores

The students' mean scores on the FEMD subscales were  $25.11 \pm 7.46$  (7-35) for the functional disturbance subscale and  $21.00 \pm 7.84$  (7-35) for the emotional disturbance subscale. The relationship between the two subscales was evaluated with the spearman correlation coefficient, and a strong and significant positive correlation was determined ( $r:0.81$ ,  $p < 0.01$ ) (Table 2).

### Health-Seeking Behaviors

Of the students, 21.3% stated that they consulted a doctor due to dysmenorrhea; 43.9% stated that they had always used analgesics; 34.3% stated they had sometimes used analgesics; 85.8% had applied non-drug methods for pain. The most frequently applied methods were hot application (71.2%), rest (65.7%), and massage (38.9%) (Table 3).

### Factors associated with FEMD scores

When the relationship between severity of dysmenorrhea and functional and emotional disturbance scores is examined with the spearman correlation coefficient, there was a moderate, positive, and significant relationship (for functional disturbance  $r:0.555$ ,  $p<0.001$ ; for emotional disturbance  $r:0.533$ ,  $p<0.001$ ). As the severity of dysmenorrhea increases, functional and emotional disturbance increase (Table 1).

When functional and emotional disturbance scores are examined according to the time of

dysmenorrhea, those who always had pain during menstruation were found to have a higher level of functional and emotional disturbance scores ( $p<0.05$ ) (Table 1).

Participants who had consulted a doctor due to dysmenorrhea, who had used analgesics, and who used non-drug pain relief methods were found to have a higher level of functional and emotional disturbance scores ( $p<0.01$ ) (Table 3).

**Table 2.** The total mean of functional and emotional disturbance scores and relationship between them

	<b>X±SD</b>	<b>r/p</b>
Functional Subscale	25.11±7.46	0.813/ p:0.001*
Emotional Subscale	21.00±7.84	

r: Spearman correlation coefficient, \* $p<0.000$

**Table 3.** Data related to dysmenorrhea health-seeking behaviors and functional and emotional disturbance scores

	<b>n / %</b>	<b>Functional Disturbance</b>	<b>Emotional Disturbance</b>
<b>Consulting a doctor</b>		29.97±5.53	25.98±6.76
Yes	93(21.3)	23.80±7.38	19.65±7.57
No	344(78.7)	U/Z:67075.00/ -7.654	U/Z:67884.00/ -6.901
		<b>p:0.001*</b>	<b>p:0.001*</b>
<b>Use of analgesics</b>			
Yes	192(43.9)	28.21±5.95	24.10±7.11
No	95(21.7)	20.22±8.21	16.82±7.57
Sometimes	150(34.3)	24.24±6.83	21.00±7.84
		KW:70.522/ <b>p:0.001*</b>	KW:61.165/ <b>p:0.001*</b>
<b>Use of non-drug methods</b>		25.89±7.04	21.59±7.71
Yes		20.43±8.25	17.45±7.73
No	375(85.8)	U/Z:9135.50/ -4.828	U/Z:10008.00/ -3.878
	62(14.2)	<b>p:0.001*</b>	<b>p:0.001*</b>

KW: Kruskal Wallis test, U/Z: Mann Whitney U test, \* $p<0.01$

## DISCUSSION

In this study, the prevalence of dysmenorrhea was quite high in university students. The prevalence was 92.9% among university students in Egypt [4], 85.2% in Spain [20], and 85.7% in another study conducted in Turkey. Our study findings are consistent with the literature. It can be said that dysmenorrhea is common among university students.

Although dysmenorrhea is common in young individuals, its severity can vary. Our study determined the severity of dysmenorrhea as  $6.26±2.24$  (0-10). This finding is consistent with the result obtained in the study of Potur et al. (2014) ( $6.33±2.32$ ) [21]. However, in the study conducted by Li et al., the severity of dysmenorrhea was found to be  $2.7±2.5$  and lower [18]. This difference is

thought to be due to the geographical differences of the samples.

Dysmenorrhea both limits the functional activities of young individuals and increases their emotional stress [7,18,22]. In our study, the functional disturbance scores of the young individuals were higher than their emotional disturbance scores. Considering that the minimum and maximum scores obtainable are 7 and 35, respectively, it can be said that the level of functional disturbance was above the average, and the level of emotional disturbance was at the exact mid-score. In the study of Li et al. (2012), the scores in both subscales were lower than those in our study [18]. The scores obtained in the study conducted by Yilmaz and Sahin (2019) in Turkey were similar to

our study [23]. Although our study findings support the findings of the study conducted by Yilmaz and Sahin (2019) in our country, they differ from those obtained in the study of Li et al. (2012). This difference is thought to be due to the relationship between the severity of dysmenorrhea and disturbance. In Li et al.'s (2012) study, the disturbance might have been less due to the low severity of dysmenorrhea. Indeed, a significant correlation was found between the severity of dysmenorrhea and FEMD scores in our study. Functional and emotional disturbances increase as the severity of dysmenorrhea increases.

University students have different health-seeking behaviors for dysmenorrhea. Health-seeking behaviors can be pharmacological and non-pharmacological [7,12,22]. In our study, a small number of students had consulted a doctor, and most of them had used drugs and non-pharmacological pain relief techniques. Among the non-pharmacological methods, they mainly had preferred hot application, rest, and massage. Likewise, in the literature, the rate of using drugs and herbal treatment was higher, and the rate of consulting a doctor was lower in the study conducted by Alsaleem (2018) [9].

In Abubakar et al.'s (2020) study, the non-pharmacological methods were similarly rest, hot application, and massage [24]. On the contrary, Karaout et al. (2021) stated that sleep, rest, and increased fluid intake were the most frequently applied methods [25]. Differences may be due to the methods used by societies to cope with pain culturally.

There were some limitations to our study. Firstly, FEMD is a self-report scale. Therefore, functional and emotional disturbances have not been tested clinically. Secondly, the study results cannot be generalized since they belong to students only from one faculty.

## CONCLUSIONS

This study determined that dysmenorrhea was quite common in university students and that its severity was above moderate. Functional and emotional disturbances increase as the severity and duration of dysmenorrhea increase. As a health-seeking behavior, university students mostly resort to non-pharmacological methods, followed by pharmacological methods and consulting a doctor. Reliable and evidence-based methods should be suggested for developing coping behaviors for dysmenorrhea, which affects most students.

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## Conflicts of interest

No potential conflict of interest.

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