THE CORRELATION BETWEEN THE MENSTRUAL IRREGULARITY AND EATING ATTITUDE AND SOCIAL APPEARANCE ANXIETY AMONG UNIVERSITY STUDENTS

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ABSTRACT

The study was conducted with descriptive and correlational design to investigate the correlation of menstrual irregularity with eating attitude and social appearance anxiety among university students. The sample of the study consisted of a total of 576 students determined according to the power analysis. The data of the study were collected by using personal information form, eating attitude test and Social Appearance Anxiety Scale. Backward Stepwise Logistic Regression analysis, and Pearson's Correlation analysis were used to analyse the data. As a result of the logistic regression, it was suggested that experiencing menstrual irregularity in the past, having history of menstrual irregularity in the family and each unit increase in the eating attitude scale were important risk factors for menstrual irregularity in the

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students (p<0.005). In the study, it was determined that the eating attitudes of the students with irregular periods were worse and their social appearance anxiety was higher (p<0.005).

Keywords: Eating attitude, Menstrual irregularity, Nursing, Social Appearance Anxiety, University Student.

ÜNİVERSİTE ÖĞRENCİLERİNDE MENSTRUAL DÜZENSİZLİKLE YEME TUTUMU VE SOSYAL GÖRÜNÜŞ KAYGISI ARASINDAKI İLİŞKİ

ÖZ

Araştırma üniversite öğrencilerindeki menstrual düzensizliğin yeme tutumu ve sosyal görünüş kaygısı ile ilişkisini incelemek amacıyla yapıldı. Araştırmanın örneklemini yapılan güç analizine göre belirlenen 576 öğrenci oluşturdu. Araştırmanın verileri kişisel tanıtım formu, Yeme Tutum Testi ve Sosyal Görünüş Kaygısı Ölçeği kullanılarak toplandı. Verilerin analizinde Backward Stepwise Lojistik Regresyon analizi ve pearson korelasyon analizi kullanıldı. Lojistik regresyon sonucunda öğrencilerin geçmişte menstrual düzensizlik yaşaması, ailesinde menstrual düzensizlik öyküsünün olmasının ve yeme tutumu ölçeğindeki her bir birimlik artış durumunun menstrual düzensizlik için önemli risk etkenleri olduğu saptandı (p<0.005). Araştırmada düzensiz adet gören öğrencilerin yeme tutumlarının daha kötü, sosyal görünüş kaygılarının ise daha fazla olduğu saptandı (p<0.005).

Anahtar Kelimeler: Hemşirelik, Menstrual Düzensizlik, Sosyal Görünüş Kaygısı, Yeme Tutumu, Üniversite Öğrencisi.

INTRODUCTION

Menstrual irregularity is generally defined as abnormal change in the menstrual cycle length or variability of the menstrual cycle. Menstrual irregularities commonly seen in the adolescence and youth periods constitute an important part of the gynaecological complaints of these age groups. Menstrual irregularity affects 10-38% of menstruating women (Çetin & Aslan , 2019: 33-43; Fil & Adın, 2019: 215-231; Nooh, Abdul-Hady & El-Attar, 2016: 137-142; Omani Samani et al., 2018: 665-678). It is reported in the literature that many factors such as age, menarche age, body mass index, physical exercise, ethnicity, smoking/alcohol usage, caffeine consumption, chronic diseases and eating disorders cause menstrual irregularity (Çetin & Aslan , 2019: 33-43; Derya, Taşhan, & Uçar, 2015: 12-16; Martini et al., 2016: 553-557; Osayande, Ozoene, & Amabebe, 2014: 310-315; Singh, Rajoura, & Honnakamble, 2019: 2855-2858). In the studies, it has been found that menstrual irregularity is seen more frequently in

women having an eating disorder such as anorexia nervosa (Çetin & Aslan , 2019: 33-43; Martini et al., 2016: 553-557). Frequent and excessive eating or refusing to eat, restricting, being vegetarian/vegan, disposing the food eaten without being digested immediately or irresistible nocturnal eating behaviours are commonly seen among people suffering from eating disorder (Kadıoğlu & Ergün, 2015: 96-104). The development of eating disorders among young people is shown to be due to the fact that eating attitudes are affected by many factors especially during this age period. When the related studies are examined, the incidence rate of eating disorders among young people varies between 0.3% and 36% (Albrahim et al., 2019: 698-707: Çaka, Çınar & Altınkaynak, 2018: 203-209; Özyurt, Öztürk & Akay, 2017: 81-96). In the literature, gender and age are the top factors affecting the eating attitude. When the effect of gender is examined, it is seen that especially young girls give more importance to body image and aesthetics than boys and they are more prone to eating disorders (Kadıoğlu & Ergün, 2015: 96-104; Özyurt et al., 2017: 81-96). Body image is feelings, thoughts, and perceptions of individuals about their own body. In addition to the people's perception of their own body, other people's perception about them is also important. The individuals who think they cannot make a good impression on other people experiences anxiety (Doğan, 2010: 151-159). This anxiety is called as Social Appearance Anxiety. Social appearance anxiety is an anxiety situation that emerges when the physical appearance of people is evaluated by other people (Ahmet, 2016: 95-106). Social appearance anxiety is seen more frequently among young people than among adults, and more frequently among women than men. (Çelik & Şenay Güzel, 2018: 235-256; Lunde & Frisén, 2011: 309-314; Özcan et al., 2013: 107-113). The main disadvantages of social appearance anxiety are body dissatisfaction, eating attitude disorders, anxiety, depression, body weight, and eating anxiety. Since body weight is a characteristic that other can see, prejudice and discrimination about weight and social pressures encouraging weakness explain the correlation between social appearance anxiety and eating disorder (Demirel, 2019: 664-667; Sanlier et al., 2018: 124-139.). In addition, the studies have showed that the only determinant of menstrual irregularity among women with eating disorder is body mass index (BMI) (Danasu, Rajalakshmi & Mary Christina, 2016: 2725-2729; Martini et al., 2016: 553-557; Thapa & Shrestha, 2015: 365-374). In accordance with the studies revealing the correlation between eating disorder and menstrual irregularity and showing the correlation between social appearance anxiety and eating disorder, this study was conducted to determine the correlation of eating attitude and social appearance anxiety with menstrual irregularity.

MATERIAL and METHOD

Aim: This study was conducted to determine the correlation of eating attitude and social appearance anxiety with menstrual irregularity.

Population and Sample of the Study

The study was planned as a descriptive and correlational study. The population of the study was composed of 2650 female students studying in the faculties of Education and Nursing of a state university in the Spring semester of 2018-2019 academic year. The sample of the study was composed of a total of 576 female students determined with α= 0.03 error rate and having the power of representing 96% of the population according to the power analysis. The number of students to be included in the sample from each faculty was determined by proportioning to the number of students to the cluster weights and 283 students from the faculty of education (49.5%) and 291 students from the nursing faculty (50.5%) were determined. The improbable random sampling method was used for including the students in the sample and the inclusion was continued until the sample size was reached. The inclusion criterion was to be students who regularly attend school.

Data Collection

The data of the study were collected by using face-to-face interview technique on weekdays and at other times when the students had no classes. The students were asked to fill the data collection forms by themselves and in their class. The researchers then took the students' weight, height and waist circumference measurements and added the values to the forms.

Personal Information Form, Eating Attitude Test (EAT) and Social Appearance Anxiety Scale (SAAS) were used to collect the data.

Personal Information Form contains questions related to the students' individual characteristics (age, income status, chronic illness, smoking, exercising, sleep time, etc.), menstruation experiences (menstruation period, frequency, amount, etc.) and eating behaviours (number of meals a day, status of skipping meal, reasons, etc.). While determining menstrual irregularity in the study,

→ Cycles shorter than 21 days and longer than 35 days;

→ Bleeding less than 3 days and longer than 7 days;

$\rightarrow$ The presence of any of the vaginal bleedings requiring more than one tampon or pad change within 1-2 hours were evaluated as menstrual irregularity (Derya, et al. 2019; Fil and Adın 2019;. Omani Samani et al. 2018; Uçar et al. 2015)

Eating Attitude Test; The scale was developed by Garner and Garfinkel to measure the eating attitudes of individuals with eating disorder and the symptoms of possible eating disorders in humans. The scale, whose Turkish adaptation was conducted by Savaşır and Erol (1989), is a 6-point Likert type scale consisting of 40 items. While scoring the scale, "sometimes" is rated as 1 point, "rarely" is rated as 2 points and "never" is rated as 3 points in the items 1, 18, 19, 23, 27 and 39 and the other options are rated as 0 point. In the other items of the scale, "always" is rated as 3 points, "very often" is rated as 1 point and other options are rated as 0 point. For the total score obtained by summing the scores obtained for each question, minimum value is 0 and the maximum value is 120. The score obtained from the scale is directly proportional to the eating disorder and scores of 30 points and higher constitute a risk for eating disorder (Savasır & Erol, 1989: 132-136). In their study, Savaşır and Erol found the Cronbach's alpha value of the scale as 0.70. In this study, the Cronbach's alpha value of the scale was found as 0.86.

Social Appearance Anxiety Scale; It is a self-report scale developed by Hart et al., (2008) used to measure emotional, cognitive, and behavioural anxieties experienced by the individuals regarding their appearance. Its Turkish adaptation was conducted by Dogan (2010). The scale is a 5-point Likert type scale consisting of 16 items. The items of the scale have an answer key so that (1) Not appropriate, (5) Fully appropriate. The 1st item of the scale is coded reversely. The scale is one-dimensional and the maximum score is 80 and the minimum score is 16. High score indicates high appearance anxiety (Doğan, 2010: 151-159). The Cronbach's alpha coefficient of the scale was found as 0.93. In this study, the Cronbach's alpha coefficient of the Social Appearance Anxiety Scale was calculated as 0.91.

Data Evaluation

In the analysis of the data obtained as a result of the study, SPSS for Windows 22 program was used. In the statistical analysis, chi-square test, significance test of the difference between two means (t) and Backward Stepwise logistic regression analysis were used. Measurable data were given together with mean ($\overline{X}$) and standard deviation (SD). According to the Backward Stepwise Logistic Regression analysis formed with the variables that are significant based on bivariate analysis results, variables affecting the suspicion of menstrual irregularity were

determined. Statistical significance was accepted as $p<0.05$. By examining the weight and height values stated by the students participating in the study, BMI of all students was calculated (weight (kg)/ height^2 (m^2)).

Ethical Considerations

In order to conduct the study, approval (2019/5-8) was obtained from Inonu University Health Sciences Non-Invasive Clinical Trials Ethics Committee before starting the study. In addition, written permission was obtained from the deans of the faculties where the study was conducted. Before starting to collect the study data, the students were informed about the study and their personal information would be protected and the voluntary students were included in the study.

RESULTS

The results obtained from the study conducted to determine the correlation of menstrual irregularity with eating attitude and social appearance anxiety in university students were given in tables.

The mean age of the students participating in the study was 20.87±1.60 (min:18, max:34) and 72.0% were 21 years old and younger. When their income status was examined, 55.1% had an income equal to their expenses. Besides, 7.6% of the students had a chronic illness and 8.5% were using medication regularly. It was found that 9% of the students were smokers and only 12.8% of them were doing exercises 3 or more times a week for averagely 40.64 ±31.13(min:10 max:180). When the eating behaviours of the students were examined, 39.9% of them always skipped meal and 38.4% of them sometimes skipped meals. When examining which meal was skipped, it was determined that 40.6% of the students skipped lunch and 34.2% skipped breakfast. Considering the reason for skipping meals, it was seen that 39.6% of the students skipped meals to lose weight, 15.5% could not find ready-made food due to lack of time and 5.6%. It was seen that 56.1% of the students had a change in their appetite before menstrual period and 91.5% preferred sweet foods. When the food groups predominantly consumed by the students in the last 24 hours were examined, they were found to prefer bread/cereal group at the rate of 86.5%, meat/eggs/legumes group at the rate of 72.2%, vegetable/fruit at the rate of 69.8% and fast food/snacks at the rate of 55.2%.

Table 1. Distribution of the Students' Descriptive Characteristics (N:576)

Descriptive Characteristics		N	%
Age	21 years old and below	415	72.0
	22 years old and above	161	28.0
Income status	Income less than expenses	202	35.1
	Income equal to expenses	321	55.1
	Income higher than expenses	53	9.2
Chronic Illness	Yes	44	7.6
	No	532	92.4
Medication	Yes	49	8.5
	No	527	91.5
Smoking	Yes	52	9.0
	No	524	91.0
*Exercise (Weekly ≥ 3)(n=74)	Yes	74	12.8
	No	502	87.2
Skipping Meals	Yes	230	39.9
	No	125	21.7
	Sometimes	221	38.4
**Reason of skipping meals (n=451)	Insufficient time	228	39.6
	Lack of appetite	87	15.1
	To lose weight	34	5.6
	Could not find a convenience food	89	15.5
Changes in appetite in the premenstrual period	Increases	323	56.1
	Decreases	113	19.6
	No change	140	24.3
Food type frequently preferred in the premenstrual period	Sweet	527	91.5
	Hot	18	4.5
	Sour	15	2.5
	Salty	15	2.5
& Food group consumed in the last 24 hours	Dairy products	333	57.8
	Meat / eggs / legumes	416	72.2
	Bread / Cereal	498	86.5
	Vegetables/Fruit	402	69.8
	Fastfood/ Snack	318	55.2
	Carbonated beverage /fruit juice	161	30.0
	Tea/Coffee	502	87.1
Total daily sleep time (hours)	< 7 hours	256	44.4
	>7 hours	320	55.6
Eating attitude test	< 30	546	94.8
	>30	30	5.2
Body mass index	Lightweight	87	15.1
	Normal weight	435	75.5
	Overweight	54	9.4
	Mean ± SD / (min- max.)		
Weight circumference	69.15±9.54 / (48-170)		
SAAS	32.51±11.09 / (16-76)		

*Students doing exercises responded (n: 74) **Students skipping meals responded (n: 451) &Multiple options were marked

Besides, it was determined that the students preferred tea/coffee at the rate of 87.1% and carbonated beverage/fruit juice at the rate of 30.0%. It was also seen that the students slept for averagely 7.71±1.49 hours and 55.6% slept for more than 7 hours. The eating attitude test mean score of the students was 15.05±8.85 and 5.2% had the risk for eating disorder. In the study, mean BMI of the students was 21.11±2.77(min:15.24 max:36.13). and 75.7% had a normal weight, 15.1% were lightweight, and 9.4% were overweight. Besides, the waist circumference of the students was 69.15±9.54 cm and SAAS mean score was 32.51±11.09 (Table 1).

Table 2: Distribution of Students' Characteristics Regarding their Menstrual Cycles (N:576)

Menstrual Cycle Characteristics		N	%
Menstrual cycle pattern	Regular	441	76.6
	Irregular	135	23.4
Experiencing menstrual irregularity in the past	Yes	327	56.8
	No	249	43.2
Menstrual irregularity in the family	Yes	184	31.9
	No	321	55.7
	I do not know	71	12.3
Intensity of menstrual bleeding	Mild	312	54.1
	Moderate	46	8.0
	Severe	218	38.8
Consulting a doctor for menstrual irregularity	Yes	118	20.5
	No	458	79.5
	Mean ± SD / (min- max)		
Menstrual bleeding time (Days)	5.56 ±1.27 / (3-10)		
Menstrual cycle length (Days)	27.65±2.56 / (21- 35)		

When the menstrual cycles characteristics of the students were examined, it was found that 76.6% had regular irregular menstrual cycles and 23.4% had irregular menstrual cycles. In addition, 56.8% of the students had menstrual irregularity in the past and 31.9% had at least one woman in their family who experienced menstrual irregularity. When the intensity of the students' bleedings was examined, 54.1% had mild bleeding, 38.8% had severe bleeding and 20.5% consulted a doctor for their menstrual irregularity. In addition, the menstrual cycle length of the students was averagely 27.65±2.56/(min:21- max:35) and the bleeding lasted for averagely 5.56 ±1.27/(min:3-max:10) days (Table 2).

Table 3. Comparison of the students' status of experiencing menstrual irregularity and some variables

Socio-Demographic Characteristics	Menstrual irregularity		Statistical analysis
	Yes N (%)	**No** N (%)	
Age			
21 years old and younger	102 (24.6)	313 (75.4)	$X^2 = 1.077$
22 years old and older	33 (20.5)	128 (79.5)	p=.325
Income status			
Income less than expenses	55(27.2)	147(72.8)	$X^2 = 2.544$
Income equal to expenses	68(21.2)	253(78.8)	p= .280
Income more than expenses	12(22.6)	41(77.4)	
BMI			
Lightweight	17(19.5)	70(80.5)	**$X^2 = 8.235$**
Normal weight	97(22.3)	338(77.7)	**P= .016**
Overweight	21(38.9)	33(61.1)	
Smoking			$X^2 = .932$
Yes	15(28,8)	37(71,2)	p= .211
No	120(22.9)	404(77.1)	
Chronic disease			$X^2 = 1.865$
Yes	14(31.8)	30(68.2)	p= .121
No	121(22.7)	411(77.3)	
Doing Exercise			
Yes	20(27.0)	54(73.0)	$X^2 = .610$
No	115(29.9)	387(77.1)	p= .259
Total daily sleep time (hour)*			
< 7 hours	58(22.7)	198(77.3)	
>7 hours	77(24.1)	243(75.9)	
Status of experiencing menstrual irregularity in the past			
Yes	116(35.5)	211(64.5)	**$X^2 = 61.072$**
No	19(7.6)	230(92.4)	**p= .000**
History of menstrual irregularity in the family			
Yes	55(29.9)	129(70.1)	**$X^2 = 18.974$**
No	54(16.8)	264(83.2)	**p= .000**
Unknown	26(36.6)	45(63.4)	
	Mean ±SD	**Mean ±SD**	
Eating Attitude Test	18.15±9.99	14.09 ± 8.25	**t= -4.744** **P= .000**
SAAS	36.36±13.52	31.33±9.95	**t= -4.691** **P= .000**
Waist circumference (n:472)	71.09 ± 13.14	68.57± 8.08	**t= -2.427** **P= .016**

*Fisher's Exact Test was used.

Table 3 shows the comparison of the students' status of experiencing menstrual irregularity and some variables. When the students' menstrual irregularity and variables were examined, it was found that menstrual irregularity had no significant correlation with age, income status, smoking status, having a chronic disease, doing regular exercise and daily total sleep time (p>0.05). Besides, BMI of the students affected the menstrual irregularity and this difference was observed between normal weight students and overweight ones (p<0.05). It was also seen that there was a statistically significant correlation between waist circumference with and menstrual irregularities of the students (p<0.05, Table 3). When the students' menstrual

characteristics and status of experiencing menstrual irregularity were compared, a highly significant correlation was detected between the status of experiencing menstrual irregularity in the past and having menstrual irregularity history in the family (p<0.001, Table 3). When the students' eating attitude and status of experiencing menstrual irregularity were compared, it was seen that the students having menstrual irregularity had higher eating disorder risk compared to those without menstrual irregularity. This also has a statistically highly significant correlation (p<0.001, Table 3). Social appearance anxiety of students with menstrual irregularity was significantly higher than students without menstrual irregularity.

In the study, bivariate analysis was performed to all independent variables that may be associated with menstrual irregularity. According to the result of this analysis, a significant correlation was found between the status of experiencing menstrual irregularity in the past, having menstrual irregularity in the family, BMI, eating attitude test, SAAS and waist circumference (p<0.05, Table 3).

Table 4. Analysis of the Students' General Risk Factors Associated with Menstrual Irregularity*

Menstrual Irregularity Risk Factors	β	SE[a]	df[b]	p	OR[c]	95% CI[d]	
						Lowest value	Highest value
Experiencing menstrual irregularity in the past							
Yes	2.175	.368	1	**.000**	8.802	4.283	18.089
No (Reference)							
Menstrual Irregularity History in the Family							
Yes	.561	.284	1	**.048**	1.753	1.004	3.060
No (Reference)							
Eating Attitude Test	.054	.014	1	**.000**	1.055	1.026	1.086
Constant	-3.827	.453	1	**.000**	.022		

*Backward stepwise logistic regression;   SE[a]: Standard error;   df[b]: Degree of freedom;   OR[c]: Odd's ration   CI[d]: Confidence interval

The variables found to be significant as a result of these analyses were included in the logistic regression model. Table 4 shows the result of the Backward Stepwise Logistic Regression analysis. According to the analysis results, experiencing menstrual irregularity in the past (OR: 8.80), having menstrual irregularity history in the family (OR: 1.75) and status of each unit increase in the eating attitude test (OR: 1.05) were found to be important risk factors for menstrual irregularity of the students.

DISCUSSION

Menstrual irregularity is a common gynaecological problem seen in young girls (Rafique & Al-Sheikh, 2018: 67-73: Shiferaw & Mamo Wubshet, 2014: 1-9). In the studies, it has been determined that the rate of menstrual irregularity was between 6.1% and 38% (Derya, Erdemoglu, & Ozşahin, 2019: 176-181; Singh et al., 2019: 2855-2858; Sreelakshmi, Bindu, Subhashini, & Saritha, 2019: 1271-1276). In the present study, it was found that almost one fourth of the students experienced menstrual irregularity. Menstrual irregularity is often seen with menstrual cycle length, changes in intensity of menstrual bleeding and pain accompanying the menstrual cycle (Çetin & Aslan , 2019: 33-43; Fil & Adın, 2019: 215-231; Samani et al., 2018: 665-678). It was found in the present study that the menstrual cycle length of the students was averagely 27.65±2.56 days, bleeding time was 5.56 ±1.27 days and 54% of them had mild bleeding (Table 2). In their study, Uçar et al., found that the menstrual cycle length of the students was averagely 27.06±4.57 days, bleeding time was 5.61±1.88 days (Uçar, Derya, & Taşhan, 2015: 215-221). In their study, Sönmez et al., found that the mean menstrual cycle length was 28.98±6.69 days and the mean menstruation period was 6.02±1.45 days (Sönmez, Çapık, & Akkaş, 2019: 25-32). In addition to these studies, in the study by Sreelakshmi et al., the cycle length and bleeding time of the students were examined and they observed that 66% of the participants had a cycle length of 21-35 days and menstruation of 62% lasted for averagely 3-5 days (Sreelakshmi et al., 2019: 1271-1276). When examining results of national and international studies, results of the present study were found to be similar in terms of menstrual cycle length, bleeding time and bleeding intensity. Another factor associated with menstrual irregularity was seen to be body mass index (Derya et al., 2015: 12-16; Hızlı et al., 2013: 67-69; Temür et al., 2017: 153-158). 27.6% of women with low BMI in the study of Thaba and Shrestha, and 34.16% of women in the study of Jena et al. experienced menstrual irregularity (Jena, Panda, Mishra, & Agasti, 2017: 29-31; Thapa & Shrestha, 2015: 2350-1324). Although the result of the present study supports the literature, as a result of the logistic regression analysis, it was found that BMI did not affect the risk of experiencing menstrual irregularity. However, in the logistic regression analysis performed in the present study, it was determined that waist circumference width did not affect the risk of experiencing menstrual irregularity.

Social appearance anxiety is expressed as a type of social anxiety that individuals feel about their appearance against its evaluation by other people in their social lives (Erdoğan,

Eryürek, & Ünübol, 2019: 85-94). In the present study, the students' mean score from SAAS was determined as 32.51±11.09 (Table 1). When the studies were examined, SAAS mean score was found as 34,53±12,67 in the study conducted by Erdoğan et al., (2019) with university students and 34.11±11.52 in the study conducted by Sanlier et al., (2018) (Erdoğan et al., 2019: 85-94 Sanlier et al., 2018: 124-139). The results obtained from the present study showed similarities with the studies of Erdoğan et al., (2019) and Sanlier et al., (2018). Besides, it was determined in the present study that there was a statistically significant correlation between social appearance anxiety and menstrual irregularity. However, in the logistic regression analysis, it was determined that social appearance anxiety was not a risk factor for menstrual irregularity. When the studies conducted on the subject were examined, this was seen to be associated with the stress and mental problems experienced by students as a result of social appearance anxiety (p<0.005). In the emergence of menstrual irregularity, women's status of experiencing menstrual irregularity in the past may play a role (Derya et al., 2015: 12-16; Erenel & Şentürk, 2007: 48-60).

In the present study, more than half of the students were seen to experience menstrual irregularity in the past and it was found in the logistic regression analysis that students who experienced menstrual irregularity in the past had the risk of experiencing menstrual irregularity 8.8 times greater. Although the rate of experiencing menstrual irregularity was 23.8% in the study of Uçar et al., it was found that 39.7% of the students experienced menstrual irregularity in the past (Uçar et al., 2015: 215-221). Along with the menstrual irregularity, it was determined in the study of Güvenç et al., that 31.2% of the students who suffered from dysmenorrhea experienced dysmenorrhea again in each cycle and 58.4% of them experienced dysmenorrhea in some cycles (Guvenc, Kilic, Akyuz, & Ustunsoz, 2012: 106-111). Results of the present study show similarities with the studies conducted by Güvenç et al. (2012), and Uçar et al. (2015). Although it is reported in the literature that menstrual irregularity is not a genetic condition, it is known to be associated with family history (Uçar et al. 2015; Sahin et al. 2014; Erenel & Sentürk. 2007). In the study of Uçar et al., it was determined that 37.8% of the students had women in their families who had menstrual irregularity. In the studies by Akmalı et al. (2020), and Kim et al. (2019), a significant correlation was found between the status of experiencing premenstrual syndrome and the presence of women who experienced PMS in the family and relatives (Akmalı, Ozerdoğan, & Gursoy, 2020: 63-74: Kim, Choi, & Min, 2019: 423-433). In the study by Şahin et al., the incidence of dysmenorrhea was found to be higher in those who had dysmenorrhea in their family history (Sahin, Ozdemir, Unsal, & Arslan, 2014:

61-66). Differently from the present study, in the study of Erdoğan, 68.2% of the participants had history of dysmenorrhea in their family (Erdoğan, 2013). Similarly, in the present study, it was found that more than one fourth of the students with menstrual irregularity had at least one woman in their family with menstrual irregularity and as a result of the logistic regression, the status of experiencing menstrual irregularity was 1.7 times greater in the students who had menstrual irregularity history in their families than the students without menstrual irregularity history in their families.

In addition, when the studies are examined, it is seen that the diet type and predominantly consumed foods can affect the menstrual pattern (Farasati et al., 2015: 2016-2021; Mizgier, Jarzabek-Bielecka, Jakubek, & Kedzia, 2019: 256-261; Sreelakshmi et al., 2019: 1271-1276). In their study, Farasti et al.(2015), found that the participants who ate sweet, fatty foods and foods rich in sodium but poor in magnesium had more severe premenstrual symptoms (Farasati et al., 2015: 2016-2021). It was seen in another study that eating mainly fatty and sweet foods was associated with experiencing premenstrual dystrophic disease (Yen et al., 2010: 1203-1212). Besides, in another study investigating the correlation between the fast food consumption and menstrual irregularity, fast-food consumption was correlated with experiencing menstrual irregularity (Pramanik & Dhar, 2014: 61-66). In their study, Amgain and Neupane found a correlation between not having a vegetable-based diet and menstrual irregularity (Amgain & Neupane, 2019: 53-61). In the present study, each unit increase in the eating attitude test was determined to increase the risk of experiencing menstrual irregularity by 1.05 times. This indicated that eating attitude disorder and eating behaviours were correlated with menstrual irregularity, which is similar to the related literature.

Conclusion and Recommendations

Consequently, it was determined that experiencing menstrual irregularity in the past, having history of menstrual irregularity in the family and eating attitude were risk factors for menstrual irregularity. In addition, it was determined that BMI, waist circumference with and social appearance anxiety were associated with menstrual irregularity. In line with the results, it is recommended that healthcare professionals raise awareness about menstrual irregularity and related factors and provide healthcare for preventing reproductive health problems by eliminating eating attitudes of women and related risk factors through appropriate training and counselling services while evaluating the menstrual irregularity.

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