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The Impact of the COVID-19 Pandemic on Premenstrual Symptoms and Its Relationship with the Quality of Life

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ABSTRACT

Lifestyle changes can negatively affect premenstrual symptoms. The purpose of this study is to determine the effect of changes in the lifestyle of students on premenstrual symptoms and their relationship with their quality of life during the global epidemic process. The research that was planned with a descriptive and correlational pattern was conducted who receive education in the Faculty of Health Sciences in the structure of a public university in İstanbul. The sample of the study consisted of 336 female students. "The Personal Information Form", "the Scale of Premenstrual Syndrome (PMSS)", "the Scale of Life Quality Short Form - SF-36" was implemented upon the students that were included in the study. The total PMSS score of the students participating in the study was 147.12±37.41. It was determined that 32.4% of the students had Covid-19 infection. When the total mean scores of PMSS were evaluated according to the lifestyle behaviors of the students; It was determined that PMSS total score differed significantly according to appetite status, exercise, tea and coffee consumption and sleep patterns. According to the results of the study, it was determined that nutritional behaviors, physical activity status, sleep and stress levels changed greatly with the COVID-19 epidemic and it affected PMS. It was determined that this situation affected the quality of life negatively both physically and mentally.

Keywords: COVID-19; premenstrual syndrome; quality of life; pandemic

INTRODUCTION

Lifestyle changes can negatively affect premenstrual symptoms, women who do not have premenstrual symptoms can get this diagnosis. During the Covid-19 pandemic, the lifestyle of women all over the world has changed in order to prevent transmission. Therefore, the aim of this study is to determine the effect of changes in the lifestyle of students on premenstrual symptoms and their relationship with their quality of life during the global epidemic.

That the infection of Covid-19 spread in a speedy way and that it lacked a specific treatment gave rise to the announcement of a pandemic and this imposed a huge burden upon the health systems. In order to prevent the contamination, implementations involving quarantine at home, social isolation intending for those who are infected and in contact (Wedri et al., 2023), the use of masks and social distancing that restricted life were adopted. All the said measures brought about changes in the lifestyles of people (Fathizadeh et al., 2020).

According to Flanagan and colleagues, it was determined that the emotional eating of the young women particularly showed an increase in the duration of the Covid-19 pandemic and that they consumed more foods with high glycemic index. It was established that there was an increase in weight; particularly, the individuals with obesity increased in weight (Flanagan et al., 2021). In the scope of a study that Ozkan and his colleagues made on women, it was found out that they experienced depression and anxiety at a medium level in the duration of the Covid-19 pandemic; they were inclined to unhealthy eating behaviors administer and tackle with the said situation (Ozkan et al., 2021).

Although the etiology of PMS is not known precisely, unhealthy, and irregular living conditions cause an increase in PMS symptoms. The increase in symptoms also negatively affects the quality of life of women. On the other hand, in the scope of the study of Genç Koyucu and Olmez, it was announced that the changes in the lifestyle that made a development due to the COVID-19 pandemic brought about the emergence of the symptoms of PMS or that the existing symptoms of PMS got intensified (Genc Koyucu & Olmez, 2021). Furthermore, that the intensification of the symptoms has an impact upon the daily lives in a negative way from the social, physical, and psychological aspects (Aydin-Kartal & Kaykisiz, 2020; Ozturk & Tanriverdi, 2010).

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The young women are among those who are impacted by PMS at maximum. It is well-known that the ratio of PMS within this group is at a high level, and it affects their life qualities and academic performances in a negative way (Yildirim-Gurkan & Bilgili, 2022; Kalsoom et al., 2018; Hussein-Shehadeh & Hamdan-Mansour, 2017). Therefore, to identify the factors that impact PMS from the angle of young women, to increase the interventions intended for the mitigation of the symptoms and to boost the life quality have to be from among the targets. Consequently, the said study was conducted in order to determine the impact of the changes in lifestyle changes that emerged during the duration of the COVID-19 pandemic as well as their relationship with the life quality as relevant to the young women who receive education in the Faculty of the Health Sciences of a public university. In line with the outcomes of the research, the development of the necessary strategies regarding the improvement of the symptoms of PMS in the duration of the pandemic was targeted.

METHOD

Study Design and Participants

The research designed with a descriptive correlational pattern was conducted among the female students of the Faculty of Health Sciences of a public university in İstanbul from December 2021 to June 2022. The PMS and Covid 19 symptoms and lifestyle behaviors experienced by the students included in the study during the pandemic period (January-December 2021) were evaluated. 2672 female students in total who receive education in the faculty of health sciences of a public university constitute the sphere of the study.

In the first phase, it was implemented on all of the young women who gave consent to the participation in the research of PMS scale in order to identify the students who go through Premenstrual Syndrome intending the identification of the sampling of the research (N: 1872). If the highest score (max: 220) that may be obtained from the total scale of PMSS surpasses % 50, it was evaluated in the way that PMS is present (n: 648). The students coming from each department were included in the sampling using a student-layered sampling method. The research was conducted online due to Covid-19 social distancing and quarantine rules. The Google Forms link of the research was communicated to the students via WhatsApp and e-mail through the class representatives.

In the scope of the studies that were made together with the university students in Turkey, it was determined that the PMS prevalence differentiated in between % 5 and 79 % (Yasar et al., 2019; Abay & Kaplan, 2021; Saglam & Basar, 2019). In the scope of the sampling of the study, the frequency of PMS on average was evaluated to be 50 % on an approximate basis if the prevalence of PMS is taken into consideration. At the phase of the calculation of the dimension of the sampling, as regards the frequency of the incident that is put to examination, the data involving the frequency of PMS (50 %) in young women was made use of; the numbers of sampling were calculated as 336 by considering the ratios that are made up of the confidence interval of 95 % , 80 percent power, Type 1 error rate of 0.05, and Type 2 error rate of 0.20.

That they receive education in the structure of the Faculty of Health Sciences of a related public university, they volunteer for participation in the research, they do not receive a medical therapy intending for PMS, they do not have any gynecological disease, they do not have a mental distress, or they did not receive a therapy intending for it take place among the criteria of getting included in the study.

Data Collection Tools

The data were collected using “the Personal Information Form”, “The Scale of Premenstrual Syndrome (PMSS)”, “the Scale of Life Quality Short Form – SF 36”. The research was carried out in Turkey during the social isolation period, where the number of Covid 19 cases was high and home quarantine was applied, and the data were collected with a digital questionnaire.

Personal Information Form: It was arranged by way of doing literature research by the hand of the researchers. The form includes questions intending for identify of the sociodemographic characteristics of the students general health history of them. Moreover, questions intending for the menstruation history of the female students, their attitudes and behaviors in relation to the premenstrual period, the PMS risk factors as well as their behaviors in the lifestyle in the duration of the Covid-19 period were included.

Scale of Premenstrual Syndrome (PMSS): The scale of PMS is the one that was developed by Gencdogan (2006) in order to measure the severity of premenstrual symptoms (Gencdogan, 2006). The PMSS Total Score is obtained from the total of the scores that are obtained from the whole of the sub-dimensions. The lowest score that may be obtained from the scale is equal to 44; on the other hand, the highest score is equal to 220. The increase in the scores indicates that the intensity of the symptoms of premenstrual syndrome was upgraded. The advice is given such that in the case that

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the highest score that may be obtained from the PMS scale in total as well as the scale of PMSS being the lower scale in total (220) surpasses 50 % of it, the evaluation that the PMS is present has to be made.

Scale of Life Quality Short Form (SF-36): It was developed in order to make an evaluation of quality of life. The validity and reliability study on Turkish was conducted by Pinar (1995). (Pinar, 1995). The scale consists of 8 sub-dimensions and 36 articles. At the scale evaluation phase, the total score will not be calculated at all. While 0 indicates "bad state of health", 100 refers to "good state of health."

Ethical Considerations

The study was initiated after obtaining permission from the ethics committee and the necessary institution. The female students forming the sample group were informed about the purpose and content of the research, and their consent was obtained.

Data Analysis

The findings obtained in the research scope were evaluated in the computer environment through the statistics program of SPSS 22.0. At the phase of analyses of the data, the methods with parametric quality were made use of. The relationship between the dimensions that determine the scale levels relevant to the students was examined using Pearson correlation. On the other hand, analyses including t-test, one-way analysis of variance (ANOVA), and post hoc (Tukey, LSD) were used to examine the differences in scale levels depending on the descriptive characteristics of the students.

RESULT

The socio-demographic characteristics of the students participating in the study are given in Table 1.

Table 1. Socio-demographic Characteristics of Students

Characteristic	Mean ± SD	Min-max
Age	20.45 ± 2.64	18-38
BMI	21.60 ± 3.26	15.04-35.25
	N	%
Age		
18-22	305	90.8
>22	31	9.2
BMI		
Normal Weight (18.5-24.9)	227	67.6
Underweight (0-18.4)	58	17.3
> Overweight (>25)	51	15.2
Marital Status		
Single	327	97.3
Married	9	2.7
Financial Situation		
Income equals expense	212	63.1
Income less than expense	69	20.5
Income more than expense	55	16.4
Working Status		
No	304	90.5
Yes	32	9.5
Insurance		
Yes	272	81.0
No	64	19.0
Family Type		
Elementary Family	263	78.3
Wider Family	57	17.0
Broken Family	16	4.8

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Characteristic	Mean ± SD	Min-max
Living Place		
With Family	205	61.0
Dorm	81	24.1
Private House	50	14.9
Smoking		
No	291	86.6
Yes	45	13.4
Drinking Alcohol		
No	288	85.7
Yes	48	14.3
Have a Chronic Disease		
No	296	88.1
Yes	40	11.9
Regular Medication		
No	303	90.2
Yes	33	9.8

It was determined that 11.9% of the participants were determined to have a chronic disease. The said chronic diseases, 6.8% was asthma, 2.1% was migraine and 0.9% was lymphocytic thyroiditis that took place on the whole. It was determined that the menarche age of the students that took part in the research was equal to 12.84±1.27 on average, the time of menstruation was in intervals of 3-7 days and the menstruation cycle differentiated in the interval of 21-35 days. It was established that 38.7% of the students had a family that were diagnosed with PMS and regarding the families in which PMS was present, the symptoms were confronted with the mothers at the utmost (19.0%). The symptoms that were confronted in the duration of the menstruation period were determined to be the feeling of tension (85.7%), backache (77.77%), nervousness (77.4%), weakness (76.2%), emotionality (72.6%), sensitivity in breasts (69%) and dysmenorrhea (57.3%). It was established that the students kept track of the news about the Covid-19 pandemic through social media (87.8%), the internet (61.3%), and television (55.4%) at the utmost. On the other hand, considering the frequency that the participants kept track of the news about the infection, it was determined that they kept track of it at a ratio of 8.6% and with an interval of 0-1 hours. While 32.4% of the students were determined to have Covid-19 infection, 74.7% came into contact with a positive case of Covid-19.

Table 2. Lifestyle Behaviors of Students During the COVID-19 Pandemic Period (n=336)

Lifestyle Behavior	n	%
Appetite changes during the pandemic process		
It increased	146	43.5
Has not changed	133	39.6
Decreased	57	17.0
Nutritional-Vitamin Supplement Usage Status during the pandemic process		
Decreased	195	58.0
It increased	141	42.0
*Supplementary Nutrient-Vitamin Used during the pandemic process		
Vitamin D	138	41.1
Vitamin C	108	32.1
Iron Preparation	40	11.9
Probiotics	37	11.0
Zinc	31	9.2
Fish Oil	28	8.3
Propolis	20	6.0
Vitamin B12	7	2.1
Curcumin	5	1.5
Collagen	3	0.9
Multivitamin	1	0.3
Olive Leaf Extract	1	0.3
Folic Acid	1	0.3

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Lifestyle Behavior	n	%
Changed physical activity level during the pandemic process		
Decreased	229	68.2
Has not changed	60	17.9
It increased	47	14.0
The sports order that has changed during the pandemic process		
Not doing sports	126	37.5
Has not changed	91	27.1
Increased exercise frequency	69	20.5
Reduced exercise frequency	50	14.9
Exercising for 20 minutes at least 3 times a week		
No	249	74.1
Yes	87	25.9
Change in tea and coffee consumption during the pandemic process		
It increased	221	65.8
Has not changed	103	30.7
Decreased	12	3.6
Weight change during the pandemic process		
Has not changed	135	40.2
It increased	118	35.1
Decreased	83	24.7
Sleep pattern change during the pandemic process		
Yes	264	78.6
No	72	21.4
Increase in PMS complaints during the pandemic process		
Has not changed	164	48.8
It increased	102	30.4
Decreased	70	20.8
Increase in the frequency of analgesic use related to PMS during the pandemic process		
No	175	52.1
Yes	161	47.9
Menstrual pattern change during the pandemic process		
No	228	67.9
Yes	108	32.1
The Effect of the Covid-19 Pandemic on Smoking		
Never used	135	40.2
Quit	102	30.4
Smoking decreased	68	20.2
Smoking increased	26	7.7
Started smoking	5	1.5

While it was determined that 43.5 % of the students that took part in the research had an increase in their appetite, with 40.2 % of them, the BMM did not change at all (Aralık-Ocak, 2021). The 42 % of the participants were determined to use fortified food- vitamins at an increased rate; however, the level of physical activity during the pandemic process diminished at a ratio of 68.2 %.

The total average scores of PMSS of the participants were determined to be 147.12±37.41. When the average scores that the students that took part in the study obtained from the sub-dimensions of PMSS were evaluated; it was found out that the Depressed Affection was equal to 25.15 ± 6.52. Fatigue to 22.24 ± 5.76. Depressed Thinking to 21.71 ± 7.98. Anxiety to 19.23 ± 7.52. Nervousness to 17.91 ± 5.22. Sleep to 10.75 ± 3.36. Swelling to 10.48 ± 3.74. Pain to 10.17 ± 3.40 and Changes in Appetite to 9.45 ± 3.59.

When the average scores of the sub-dimensions of SF-36 of the students that took part in the study were evaluated, it was determined that Physical Functionality to be 85.50 ± 17.16. Physical Role to be 58.18 ± 38.68. Vividity to be 52.58 ± 16.02. Body Pain to 50.86 ± 19.05. Health in General to 50.12 ± 11.43. Mental Health to 49.63 ± 15.16. Social Functionality to 49.44 ± 13.21 and Emotional Role to 47.61 ± 42.72.

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Table 3. SF-36 Sub-Dimension and PMSS Total Score Averages According to Students' Lifestyle Behaviors

Variable	SF 36-Physical Functionality	SF 36-Physical Role	SF 36-Body Pain	SF 36-Health in General	SF 36-Vividity	SF 36-Social Functionality	SF 36-Emotional Role	SF 36-Mental Health	PMSS Total Score
	X±Ss	X±Ss	X±Ss	X±Ss	X±Ss	X±Ss	X±Ss	X±Ss	X±Ss
Appetite Changes during the pandemic process									
[1]Increased	83.39±17.76	51.20±39.86	47.58±19.47	50.73±12.75	54.45±16.52	47.69±13.29	39.73±41.30	51.89±16.99	151.84±36.31
[2]Decreased	81.14±19.73	54.39±36.63	48.56±18.71	49.26±11.57	54.65±16.71	53.07±11.40	37.43±39.88	51.16±13.47	154.02±34.91
[3]Has not changed	89.70±14.31	67.48±36.54	55.47±17.90	49.83±9.78	49.66±14.80	49.81±13.59	60.65±42.41	46.50±13.16	139.01±38.42
F	7.179	6.719	6.692	0.405	3.738	3.540	10.912	4.858	5.392
p	0.001	0.001	0.001	0.667	0.025	0.030	0.000	0.008	0.005
PostHoc	3>1, 3>2	3>1, 3>2	3>1, 3>2		1>3, 2>3	2>1	3>1, 3>2	1>3	
Nutritional-Vitamin Supplement Usage Status during the pandemic process									
Decreased	86.64±16.83	58.59±39.89	52.23±18.90	49.57±10.11	50.69±15.10	49.68±12.91	49.57±43.91	48.37±13.92	144.59±37.29
Increased	83.94±17.54	57.62±37.07	48.99±19.17	50.89±13.04	55.21±16.92	49.11±13.66	44.92±41.02	51.38±16.63	150.64±37.43
t	-1.428	-0.226	-1.542	1.048	2.574	-0.387	-0.986	1.799	1.465
p	0.154	0.822	0.124	0.315	0.010	0.699	0.320	0.081	0.144
Exercising for 20 minutes at least 3 times a week									
No	84.04±17.86	57.03±40.23	49.82±18.63	49.61±10.59	51.97±15.60	49.30±13.36	46.99±42.97	48.82±14.23	149.80±35.58
Yes	89.71±14.27	61.49±33.84	53.85±20.02	51.60±13.51	54.37±17.15	49.86±12.86	49.43±42.18	51.95±17.45	139.47±41.51
t	2.680	0.927	1.702	1.398	1.204	0.339	0.458	1.664	-2.230
p	0.003	0.315	0.090	0.216	0.230	0.735	0.648	0.134	0.040
Tea and coffee consumption during the pandemic process									
[1]Increased	85.48±16.80	57.69±37.80	49.44±19.03	50.33±11.06	51.92±15.51	50.45±12.66	47.66±42.29	49.56±14.37	151.19±34.94
[2]Decreased	84.17±20.43	41.67±35.89	49.75±25.18	45.17±11.05	52.92±17.51	52.08±16.71	22.22±35.77	54.00±17.60	161.42±43.02
[3]Has not changed	85.73±17.70	61.17±40.63	54.05±18.10	50.27±12.23	53.98±16.98	46.97±13.72	50.49±43.75	49.28±16.56	136.75±39.95
F	0.045	1.421	2.087	1.172	0.580	2.722	2.372	0.526	6.337
p	0.956	0.243	0.126	0.311	0.560	0.067	0.095	0.591	**0.002**
PostHoc									1>3, 2>3
Weight change during the pandemic process									
[1]Increased	83.35±16.74	48.52±39.13	48.25±19.39	50.73±12.58	53.60±16.68	47.88±13.70	42.66±41.32	50.37±16.89	150.22±36.68
[2]Decreased	86.93±16.21	61.75±35.00	50.95±20.55	51.41±10.35	53.31±15.70	49.70±12.80	42.97±40.17	52.05±14.17	144.12±37.09
[3]Has not changed	86.52±18.01	64.44±39.05	53.10±17.59	48.81±10.95	51.26±15.65	50.65±12.99	54.81±44.70	47.50±13.95	146.27±38.32
F	1.457	5.978	2.061	1.591	0.784	1.405	3.245	2.556	0.705
p	0.234	**0.003**	0.129	0.205	0.457	0.247	**0.040**	0.079	0.495
PostHoc		2>1, 3>1					3>1, 3>2		
Sleep pattern change during the pandemic process									
Yes	85.53±17.39	55.30±39.00	58.97±18.19	49.85±10.97	52.58±15.90	49.20±12.71	43.81±42.27	49.59±14.83	149.79±36.86
No	85.42±16.40	68.75±35.79	48.66±18.71	51.13±13.02	52.64±16.57	50.35±14.98	61.57±41.74	49.78±16.44	137.36±38.07
t	0.050	-2.638	-4.172	-0.837	-0.030	-0.655	-3.169	-0.093	2.519

When the total average scores of PMSS belonging to the students were evaluated depending on the behaviors of the students in relation to the lifestyle, the total score of PMSS was determined to be much lower significantly with the students who had a changing appetite in comparison to those who did not; with the students who exercised for 20 min. in 3 days on a weekly basis at minimum in comparison to those who did not. Moreover, the total score of PMSS was determined to be much higher significantly with those that went through an increase in the tea and coffee consumption in comparison to those who did not; whereas, with those who went through a change in the sleep routine in comparison to those who did not.

A significant negative correlation was found between PMSS total score averages and sub-dimensions of SF-36 physical role (r=-0.208; p=0.000), physical functionality (r=-0.208; p=0.000), body pain (r=-0.335; p=0.000), mental health (r=-0.138; p=0.011). and emotional role (r=-0.226; p=0.000).

DISCUSSION

A very restricted number of studies exist in the literature upon the relation between PMS and COVID-19 (Genc-Koyucu & Olmez, 2021; Sahin et al., 2022; Aydin-Kartal & Kaykisiz, 2021; Bruinvels et al., 2022). Since PMS symptoms are affected by lifestyle changes, it is expected that lifestyle changes occurring during the Covid-19 pandemic period will affect PMS symptoms. In addition, this situation is thought to affect the quality of life.

It was determined that the students that took a part in the research experienced the symptoms of PMS above the medium level (in the form of 147.12±37.41). In the scope of the study that was made by Genç Koyucu and Olmez with the young women in the duration of the pandemic, it was conveyed that they experienced the symptoms of PMS more severely

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(173.00±40.73); on the other hand, it was determined that 34.2 % out of them were nourished on an irregular basis. While the changes in the diet and weight may affect the symptoms of PMS in the duration of the pandemic, the fluctuations in hormones may have an impact upon the control of appetite and behaviors of nourishment additionally (Slyepchenko et al., 2021; Van-Dorelaman et al., 2020). It was established in the scope of the present study that the symptoms of PMS were found to be much higher significantly as relevant to the students in whom the changes in appetite showed an increase. In the scope of the study of Aydin Kartal and Kaykisiz (2020), it was conveyed that the complaints regarding PMS made by the students with whom there was an increase in appetite in the duration of the pandemic occurred more severely. The pandemic and the process of social isolation depending on the pandemic assumes a triggering part upon the behaviors of nourishment. The individuals may have the feeling of eating even at the times when they were not hungry intending for keeping the negative feelings under control that they have in the duration of this process and to become more happier and secure. The said emotional hunger may show an increase in the situations in which the perception of uncertainty and threat are high just like the pandemic (Serin & Sanlier, 2018; Armini et al., 2022). The change in the behaviors of nourishment may have an impact upon the symptoms of PMS. In order to mitigate the severity of the symptom of PMS, there is a need for development of protocols of nourishment.

PMS symptoms are less common in women who exercise regularly (Ozturk & Tanriverdi, 2010). However, the individuals found themselves in a life with a sedentary nature in the process of the pandemic as a consequence of the quarantine and social isolation at home. In the scope of the research, the complaints made by those who did exercise for 20 minutes in 3 days on a weekly basis were found out to be much lower significantly in comparison to those who did not do it. Likewise, in the scope of the study of Guney and his colleagues (2017), the outcome that as relevant to the students who performed a physical activity at a much lower rate, the symptoms of PMS; particularly, the depressed affect, anxiety, nervousness and depressed thinking showed an increase was derived. As based on the outcomes, the advice on a regular exercise may be brought forward to the part of the individuals, who aspire to diminish the impact of PMS (Guney et al., 2017; Sari et al., 2022).

The anxiety, stress, the lengthening of the time of stay at home, loneliness and social isolation that are gone through in the duration of the pandemic may bring about an increase in tea-coffee consumption (Simsek et al., 2021; Ghalayini & Kaplan, 2022). In the scope of the study, the total scores of PMSS of those in whom there was a change in the habit of tea-coffee consumption during the pandemic process were determined to be much higher than those in whom the total scores of PMSS did not show a change. As a matter of fact, excessive intake of beverages known to contain caffeine such as tea, coffee and cola drinks should be avoided because they increase PMS symptoms such as breast tenderness, insomnia and nervousness (Bianco et al., 2014). Also, while that the quality of sleep is at a low rate is a variable that triggers the symptoms of PMS, the quality of sleep diminishes with the individuals that go through PMS likewise (Celik & Uskun, 2022).

The results of the research support the literature. It can be said that PMS negatively affects the quality of life of individuals both physically and psychologically. In addition, deterioration in quality of life can be both a cause and a consequence of PMS. Most importantly, it can be recommended to increase the awareness of PMS in the society and the family, and to increase various counseling and information in order to provide support in alleviating the symptoms.

CONCLUSION

Together with the COVID-19 pandemic, the behaviors of nourishment, the state of the physical activity, the levels of sleep and stress showed a change to a great extent and considering the findings of the study, such changes gave rise to an increase in the symptoms of PMS. It was established that the said situation had an impact upon the life quality in a negative way both from the physical and mental aspects.

LIMITATIONS AND STRENGTHS

Although the results of the study provide some practical and useful information about the impact of lifestyle changes on PMS symptoms and quality of life in female students during the Covid 19 pandemic, there are many limitations to consider. Participants are students studying in the field of health sciences. The findings of this occupational group cannot be generalized to populations with different demographic characteristics. In addition, conducting the study in a single center may limit the generalizability of the findings. On the other hand, since it includes a large group of individuals, it gives important clues about female students studying in the field of health sciences. Another limitation is as with the majority of questionnaire-based research, researchers are reliable upon true responses from the participants and accuracy when recall is required.

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Although the fact that the study was conducted only in Istanbul is a limitation, it is also important in terms of revealing the relationship between PMS levels and quality of life of health science students, whether PMS symptoms differ according to demographic characteristics and changing lifestyle behaviors due to the pandemic. In addition, it will contribute to developing necessary strategies to increase the attempts to alleviate PMS symptoms, improve the quality of life during the pandemic, and shed light on future studies.

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