

Prevalence of Premenstrual Syndrome among Female Students in Nursing Institute, Kuwait

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Title

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<u>Abstract</u>

Background: Premenstrual syndrome (PMS) is one of the common problems in women of childbearing age that can have significant manifestations. However, the proportion of scientific research to prove the symptoms of this syndrome are very minimal and insufficient to provide enough statistical indications to do other studies based on the results.

Aim: To investigate the prevalence of premenstrual syndrome among Female Students in Nursing Institute in Kuwait.

Methods: A cross-sectional study of 308 female students was undertaken at the Nursing Institute in Kuwait. The survey was conducted by providing a Google Forms link to a self-evaluating questionnaire that included socio-demographic questions as well as PMS questions. SPSS version 25 was used to analyse the data.

Results: Cronbach alpha coefficient is about 0.940 indicating excellent internal consistency. Among 308 respondents,303 (98.4%) suffered from at least one or more of PMS symptoms, with varied levels of severity, with 301 (97.7%) having physical symptoms, 291 (95.5%) having psychological symptoms, and 228 (74%) having behavioral PMS symptoms.

Conclusion: Premenstrual syndrome is a common problem among women that can have a detrimental impact on their health. PMS must be thoroughly researched in order to optimize and guide its management in order to improve women's health.

Keywords: Premenstrual syndrome (PMS), Prevalence, Female students.

i. Introduction

Menstruation is considered a natural physiological occurrence in a woman's life. Menstrual health can be an excellent indicator of a woman's overall health. It is connected to the endocrine system and plays a major role in the body's natural reproductive health. A report released in 2015 by the American College of Gynaecologists stated that a woman's period should be regarded as a vital sign (Nama et al,2020).

1.1 <u>Literature Review:</u>

Premenstrual syndrome (PMS) is the common lay term used by most women to describe bothersome premenstrual symptoms. It is a condition that only occurs and is unique to the women of the species. this menstrual disorder is a cyclic phenomenon characterized by somatic and affective symptoms that interfere with one's job or lifestyle in the days leading up to menses, followed by a symptom-free phase. PMS is defined in a variety of ways. PMS is described by the American College of Obstetricians and Gynaecologists (ACOG) as a clinical syndrome characterized by the cyclic presence of physical and emotional symptoms unrelated to any organic disease that begin during the 5 days before menses in each of the three previous menstrual cycles and vanish within 4 days after menses initiation, without recurrence until at least cycle day 13(American College of Obstetricians and Gynecologists, 2001). Furthermore, the American Psychiatric Association (APA) has defined diagnostic criteria for severe PMS, commonly known as premenstrual dysphoric disorder (PMDD). PMDD is diagnosed when a woman's life is considerably impacted by moderate to severe symptoms, as stated in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition(Buddhabunyakan et al., 2017).

Premenstrual symptoms are extremely prevalent, affecting up to 90 percent of women of reproductive age (Braverman, 2007) . About 30–40% of these women endure premenstrual syndrome (PMS)(Ryu & Kim, 2015), while PMDD will affects 3–8% of ovulating women (Ryu & Kim, 2015)(Rapkin & Lewis, 2013). According to a study on PMS prevalence covering 18,803 women in various countries throughout the world, 47.8% of women suffer from the condition. The countries with the lowest and greatest prevalence rates were France (12%) and Iran (98%) respectively (Direkvand-Moghadam et al., 2014).

Reports on the prevalence of PMS vary from study to study. Similarly, most studies conducted in nearby countries concerning college aged students found that it ranges from 35.3% to 92.3%. The differences are thought to be attributed to multiple factors such as variations in research technique, data collection tools, cultural characteristics, sample differences, and diagnostic methods(Omu et al., 2011) (Al-Batanony, and AL-Nohair, 2014)(Nazzal, 2015)(Hussein Shehadeh & Hamdan-Mansour, 2018)(Hashim et al., 2019)(Majeed-Saidan et al., 2020)(Al-shahrani & Elnour, 2021).

Women with PMS can experience up to 150-200 clinical and psychological symptoms that occur before menstruation. Emotional fluctuations, anxiety, depression, irritability, abdominal cramps, headaches, bloating, sensitivity and pain in the breasts, and appetite changes are all common PMS symptoms(Freeman & Sondheimer, 2003).

The exact cause of premenstrual syndrome appears to be multifactorial and is yet to be fully understood. Many biological, psychological, and sociocultural risk factors, as well as gonadal hormones and neurotransmitters, are considered to have a role in the onset of PMS(Cirillo et al., 2012)(Rapkin & Akopians, 2012).

These conditions are treatable. PMS and PMDD are treated with symptomoriented treatment regimens that include anything from lifestyle changes (exercise and relaxation methods) to cognitive behavioural therapy (CBT), medicines (SSRIs), and/or combined oestrogen-progestin contraceptives (COC)(Dilbaz & Aksan, 2021).

1.2 Significance of the study:

Premenstrual syndrome is one of the common problems in women of childbearing age that can have significant manifestations. However, the proportion of scientific research to prove the symptoms of this syndrome are very minimal. Therefore, the information derived from this study will provide demographic data baseline much needed to further study this phenomenon and its correlates in future studies as well as to plan strategies and educational programs to help deal with it as required.

1.3 <u>Aim:</u>

To estimate the prevalence of premenstrual syndrome among Female Students in Nursing Institute in Kuwait.

ii. Materials and methods

2.1 Design and Setting

The present study is a cross-sectional descriptive study aimed at assessing the prevalence of premenstrual syndrome (PMS) among female students studying at the Nursing Institute of the Public Authority of Applied Education and Training (PAAET) in the state of Kuwait.

The study took place in May and June 2021 amid Covid 19 pandemic. During the time no schools, or any educational institutions were conducting onsite classes in Kuwait, instead all classes were conducted online. Therefore, the researcher opted to distribute the survey electronically. Female students who are currently enrolled in Nursing Institute's training programs and have freely decided to participate met the inclusion criteria.

2.2 Data collection and study tool :

A self-administered questionnaire, adapted from prior research and tweaked to fit the needs of this study was used to collect the data. It was split into 2 sections:

Part I focuses on socio-demographic and gynaecological factors such as age, academic program, academic year, nationality, marital status, age at puberty (when menstruation begins), and menstrual cycle.

Part II, about assessing PMS symptoms presence and severity. This part included 28 questions on PMS symptoms categorized into psychological (depressed mood, hopelessness, feeling guilty, anxiety/ worry, affective labiality, increased sensitivity toward others, feeling angry, easily irritated/ agitated, lack of interest, difficulty in concentrating, loss of control, and feeling overwhelmed); physical (lethargy/ fatigue/ decreased energy, increased appetite, craving certain

foods, hypersomnia, insomnia, breast tenderness, breast engorgement, feeling bloated , weight gain, abdominal pain, headache, muscle, joint, and back pain, and acne); and behavioural (symptoms interfering with relationships, work or school, or daily routine). Each question has a 4-point Likert scale (none, mild, moderate, and severe) and each answer has a given score(Algahtani & Jahrami, 2014)(Nazzal, 2015).

A link to an online self-administered anonymous survey (Google Forms) in Arabic was sent to all female students that were currently enrolled at Nursing Institute educational programs (nursing, phlebotomy, and medical records) via the Nursing Institute's official online portal. A total of 308 responses were received achieving a 94.2% response rate as a result of purposive sampling. All the responses were collected online through the Google Forms website. Each participant had the right to complete the questionnaire once. An informative text appeared at the top of the questionnaire stating the purpose of the survey and instructions for its completion and return were also explained using simple language, and by submitting the returns, participants. Return of the completed questionnaire was considered as consent for participation in survey. The author designed the present study in accordance with principles listed in the Declaration of Helsinki.

1) Tool Reliability and Validity:

In order to ensure the validity of the study tool, the questionnaire is initially distributed to experts in the field and asked them to express an opinion on the suitability of the tool for the study sample and the safety of the appropriate language and how the study questions are suitable for members of the sample.

And the tool thereafter amended according to the experts remarks and notes where some of those remarks are positive and some are negative ones.

For the purpose of ascertaining the external validity of the tool, the amended questionnaire was distributed to 32 female students of the population as a pilot sample to ensure clarity and extent to respond to it. Some have made remarks on lack of clarity of some questions and then the tool is amended again.

In order to ensure the stability of the tool, the reliability coefficient (Cronbach Alpha) is calculated and found to close to 0.940, which is high stability, and refers to an excellent degree of questions consistency.

2.3 <u>Ethical Consideration</u>

This study was conducted after getting approval from the authorities of the Nursing Institute. Return of the completed questionnaire was considered as consent for participation in survey.

2.4 <u>Statistical Analysis</u>

The statistical package for social sciences (SPSS) version 25 was used in the statistical analysis to calculate appropriate statistics such as the following:

- **1. Ratios and rates** through the frequency tables, which the percentages of the socio- demographic characteristics data were reached, in addition to the items of the prevalence of premenstrual syndrome symptoms that help in assessing the study objectives.
- 2. The Chi-Squared test for independence in order to identify the possibility of finding statistically significant relationships between the socio- demographic characteristics data themselves and with each of the items of the prevalence of premenstrual syndrome symptoms.

- **3.** Calculating the results of the questionnaires of 4 degrees for the study questions represented by the variables of the prevalence of premenstrual syndrome symptoms as follows: The study data consist of 28 questions and the answers to each question contain four options: none, mild, moderate, and severe. Where I give one mark to none, two marks to mild, three marks to moderate and four marks to severe. The result of the questionnaire is calculated by adding the marks of the 28 questions and dividing them by 28, and so on for all members of the study sample.
- **4. Statistical measures and confidence intervals** in order to identify the behaviours of the participants 'opinions and the expectations necessary for the study community through the results of the questionnaires for the study data.
- 5. Statistical differences tests, so that the Kruskal-Wallis Test was used to test whether there were statistically significant differences between the means of the variables of the prevalence of premenstrual syndrome symptoms for the members of the sample according to Age, Academic program, Academic year, and Age at puberty (beginning of menstruation). Mann-Whitney Test was used to test whether there are statistically significant differences between the means of variables of the prevalence of premenstrual syndrome symptoms for the sample members according to Nationality, Marital Status and Menstrual cycle, in order to find out whether there are statistically significant differences between the means of the socio- demographic characteristics data.

iii. <u>Results</u>

1) Frequency Table for the sample respondent:

Using the method of frequency tables for descriptive statistical data to calculate the relative proportions, the numbers of the sample individuals were counted for each of the categories of the socio- demographic characteristics data for the study, and then the percentages for each of these categories were calculated in the socio- demographic characteristics data, in addition to each of the items of the prevalence of premenstrual syndrome symptoms in order to arrange them according to importance. The following table (1) and (2) show that.

Personal Data	Frequency	Percentage (%)				
Age						
(1) 18-20	74	24.0				
(2) 21-23	117	38.0				
(3) 24-26	96	31.2				
(4) 27 and older	21	6.8				
Aca	ademic program					
(1) Nursing	250	81.2				
(2) Phlebotomy	41	13.3				
(3) Medical records	17	5.5				
A	cademic year					
(1) First year	88	28.6				
(2) Second year	124	40.3				
(3) Third year	96	31.1				
	Nationality					
(1) Kuwaiti	151	49.0				
(2) Non-Kuwaiti	157	51.0				
Ν	Aarital Status					
(1) Single (miss, divorced or widowed)	233	75.6				
(2) Married	75	24.4				
Age at puberty (beginning of menstruation)						
(1) Less than 9 years	17	5.5				
(2) 9-11	84	27.3				
(3) 12-14	171	55.5				
(4) 15-17	36	11.7				

Table (1): The percentages of socio- demographic characteristics data

Menstrual cycle				
(1) Regular	204	66.2		
(2) Irregular	104	33.8		

Table (1) shows that the age of 21-23 years forms the highest percentage which forms 38.0% followed by 24-26 years and 18-20 years with percentages 31.2% and 24.0%, respectively. Whereas the age from 27 and older form the lowest percentage with 6.8% of the sample of participants. Also, concerning the academic program the table shows that the nursing forms the highest percentage which forms 81.2% whereas, the phlebotomy and medical records forms the lowest percentages with 13.3% and 5.5%, respectively. Moreover, the Kuwaiti and the non-Kuwaiti forms almost very close percentages which form 49.0% and 51.0% of the sample respondents, respectively.

In addition, looking to the marital status, the table shows that the single forms the highest percentage which forms 75.6% whereas, the married forms the lowest percentage with percentage forms 24.4%.

Finally, looking to the age at puberty (beginning of menstruation), the table shows that the age of 12-14 years forms the highest percentage which forms 55.5% followed by the age of 9-11 years with percentage forms 27.3%, followed by the age of 15-17 with percentage forms 11.7%. Whereas the age of less than 9 years at puberty forms the lowest percentage with 5.5%. furthermore, concerning the menstrual cycle, the table shows that the regular menstrual cycle forms the highest percentage which forms 66.2%, whereas the irregular menstrual cycle forms the lowest percentage which forms 33.8%.

No	symptoms	None	Mild	Moderate	Severe
1	Depressed mood	14.6	33.8	30.5	21.1
2	Hopelessness	47.0	28.6	11.7	12.7
3	Feeling guilty	59.7	20.8	12.0	7.5
4	Anxiety/ worry	23.4	34.1	22.1	20.4
5	Affective labiality	24.0	21.1	23.4	31.5
6	Increased sensitivity toward others	28.6	25.0	19.1	27.3
7	Feeling angry	15.6	24.4	25.0	35.0
8	Easily irritated/ agitated	29.2	20.1	22.1	28.6
9	Lack of interest	32.5	25.0	19.1	23.4
10	Difficulty in concentrating	32.1	34.4	19.2	14.3
11	Lethargy/ fatigue/ decreased energy	14.0	20.1	25.0	40.9
12	Increased appetite	36.4	29.2	14.0	20.4
13	Craving certain foods	24.0	24.4	16.2	35.4
14	Hypersomnia	21.1	23.1	22.4	33.4
15	Insomnia	38.3	24.4	13.6	33.7
16	Loss of control	26.3	19.5	22.4	31.8
17	Feeling overwhelmed	23.1	25.3	22.4	29.2
18	Breast tenderness	36.7	24.4	16.2	22.7
19	Breast engorgement	54.2	16.3	12.3	17.2
20	Feeling bloated	25.6	18.9	26.9	28.6
21	weight gain	34.4	22.7	18.2	24.7
22	Abdominal pain	9.4	21.8	19.2	49.6
23	Headache	20.5	26.0	20.7	32.8
24	Muscle, joint, and back pain	15.9	14.0	20.8	49.3
25	Acne	24.0	26.3	23.1	26.6
26	symptoms interfering with relationships	53.9	20.5	9.4	16.2
27	symptoms interfering with work or school	45.6	22.7	9.7	13.0
28	symptoms interfering with daily routine	32.5	27.5	19.5	20.5

Table (2): The percentages of the prevalence of premenstrual syndrome symptoms data

Table (2) shows that the symptoms of affective labiality, feeling angry, lethargy/ fatigue/ decreased energy, craving certain foods, hypersomnia, loss of control, feeling overwhelmed, feeling bloated, abdominal pain, headache, muscle, joint, and back pain, and acne are severe with high percentages in the range between 26.6% to 49.6% followed by symptoms of depressed mood and feeling bloated are moderate with percentages of 30.5% and 26.9%, respectively. While

the symptoms of depressed mood, anxiety/ worry, difficulty in concentrating, and acne are mild with high percentages in the range between 26.3% to 34.4%. whereas, the symptoms of hopelessness, feeling guilty, increased sensitivity toward others, easily irritated/ agitated, lack of interest, increased appetite, insomnia, breast tenderness, breast engorgement, weight gain, symptoms interfering with relationships, symptoms interfering with work or school, and symptoms interfering with daily routine are none with high percentages in the range between 28.6% to 59.7%.

2) Chi-Square test for Independence

Using the Chi-Squared test for independence to identify the possibility of finding statistically significant relationships between the socio- demographic characteristics data with each of the items of the prevalence of premenstrual syndrome symptoms, the results are shown in table (4) below.

Table (4): The chi-square p-values for the relationships between the items of the prevalence of premenstrual syndrome symptoms and the sociodemographic characteristics data

No	Symptoms	Socio- demographic characteristics Data						
		Age	Academic	Academic	Nationality	Marital	Age at	Menstrual
			program	year		Status	puberty	cycle
1	Depressed mood	.580	.328	.001*	.014*	.010*	.136	.018*
2	Hopelessness	.029*	.469	.045*	.354	.172	.203	.001*
3	Feeling guilty	.380	.544	.040*	.826	.242	.055	.339
4	Anxiety/ worry	.785	.031*	.029*	.947	.179	.295	.004*
5	Affective labiality	.996	.095	.025*	.083	.599	.360	.001*
6	Increased	.110	.085	$.000^{*}$.051	.036*	.278	$.000^{*}$
	sensitivity toward							
	others							
7	Feeling angry	.199	.580	.002*	.025*	.570	.050*	$.000^{*}$
8	Easily irritated/	.027*	.027*	$.000^{*}$.941	.014*	.160	.001*
	agitated							
9	Lack of interest	.213	.519	.011*	.727	.014*	.046*	.020*
10	Difficulty in	.322	.198	.224	.213	.233	.006*	.003*
	concentrating							

11	Lethargy/ fatigue/ decreased energy	.175	.422	.000*	.211	.051	.016*	.000*
12	Increased appetite	.019*	.320	$.000^{*}$.254	.170	.550	.033*
13	Craving certain foods	.105	.652	.000*	.334	.252	.791	.014*
14	Hypersomnia	.057	.471	.008*	.258	.061	.143	.073
15	Insomnia	.082	.224	.006*	.531	.516	.290	.439
16	Loss of control	.290	.778	$.000^{*}$.057	.644	.179	.004*
17	Feeling	.576	.498	.001*	.245	.116	.044*	.059
	overwhelmed							
18	Breast tenderness	.396	$.000^{*}$.251	.014*	.083	.145	.194
19	Breast	.012*	.260	.048*	.300	.982	.770	$.008^{*}$
	engorgement							
20	Feeling bloated	.095	.197	.034*	.948	.019*	$.008^{*}$.082
21	weight gain	.041*	.667	$.000^{*}$.493	.725	.389	.012*
22	abdominal pain	.167	$.007^{*}$.001*	.204	.614	.017*	.049*
23	Headache	.255	.115	.235	.268	.292	$.050^{*}$.003*
24	Muscle, joint, and	.330	.259	.116	.318	.086	.384	.454
	back pain							
25	Acne	$.000^{*}$.169	.056	.342	.000*	.709	.002*
26	symptoms	.001*	.414	$.000^{*}$.570	.217	.392	$.000^{*}$
	interfering with							
	relationships							
27	symptoms	$.048^{*}$.161	.039*	.916	.043*	.638	$.000^{*}$
	interfering with							
	work or school	.6		d.				<i>.</i>
28	symptoms	.026*	.481	.020*	.211	.147	.156	$.000^{*}$
	interfering with							
	daily routine							

* There is a statistically significant relationship at the level of 0.05

The above table (4) shows, using the Chi-square test for independence, that:

1. There are significant relationships between each of the symptoms: Hopelessness, easily irritated/ agitated, increased appetite, breast engorgement, weight gain, acne, symptoms interfering with relationships, symptoms interfering with work or school, and symptoms interfering with daily routine with Age at 5% level of significant. Whereas there are no significant relationships between each of the other symptoms with age at 5% level of significant.

- 2. There are significant relationships between each of the symptoms: Anxiety/ worry, easily irritated/ agitated, breast tenderness, and abdominal pain with Academic program at 5% level of significant. Whereas there are no significant relationships between each of the other symptoms with academic program at 5% level of significant.
- 3. There are significant relationships between all of the prevalence of premenstrual syndrome symptoms with Academic year at 5% level of significant except for the symptoms: difficulty in concentrating, breast tenderness, headache muscle, joint, and back pain and acne have no significant relationships with academic year at 5% level of significant.
- 4. There are significant relationships between each of the symptoms: depressed mood, feeling angry, and breast tenderness with nationality at 5% level of significant. Whereas there are no significant relationships between each of the other symptoms with Nationality at 5% level of significant.
- 5. There are significant relationships between each of the symptoms: Depressed mood, Increased sensitivity toward others, easily irritated/ agitated, Lack of interest, feeling bloated, acne, and symptoms interfering with work or school with marital status at 5% level of significant. Whereas there are no significant relationships between each of the other symptoms with marital status at 5% level of significant.
- 6. There are significant relationships between each of the symptoms: feeling angry, lack of interest, difficulty in concentrating, lethargy/ fatigue/ decreased energy, feeling overwhelmed, feeling bloated, abdominal pain, and headache with age at puberty at 5% level of significant. Whereas there are no significant relationships between each of the other symptoms with age at puberty at 5% level of significant.

7. There are significant relationships between all of the prevalence of premenstrual syndrome symptoms with Menstrual cycle at 5% level of significant except for the symptoms: feeling guilty, hypersomnia, insomnia, feeling overwhelmed, breast tenderness, and muscle, joint, and back pain have no significant relationships with menstrual cycle at 5% level of significant.

3) Statistical measures and confidence intervals

Descriptive statistical measures were used to calculate the average score of the results of the questionnaire, where the minimum value, the maximum value, the arithmetic mean, and standard deviation were calculated for all variables of the prevalence of premenstrual syndrome symptoms. Likewise, confidence interval was calculated with a 95% confidence level for the mean scores of the questionnaire results for all the variables of the prevalence of premenstrual syndrome symptoms. Table (5) shows that.

Table (5): Some descriptive statistical measures and confidence interval for the rates of the prevalence of premenstrual syndrome symptoms variable (From 4 degrees)

Subject	Minimum	Maximum	Mean	Standard	95% conf	idence
	Value	Value		Deviation	Interval	
					Lower	Upper
					Bound	Bound
the prevalence of	1.00	4.00	2.4145	.69379	2.3368	2.4923
premenstrual						
syndrome symptoms						

Table (2) above, shows that the average scores of the results of the questionnaire for all variables of the prevalence of premenstrual syndrome symptoms with 4 scores have a mean of 2.4145 and standard deviation of 0.69379 out of 4 marks, and this indicates that the study sample was compatible to a high degree with the prevalence of premenstrual syndrome symptoms. The 95%

confidence interval (CI) also showed a high agreement score with a lower bound of 2.3368 and the upper bound of 2.4923 out of 4 scores.

4) Statistical Difference Tests:

According to Kolmogorov-Smirnov test for normality, the average scores of the variables of the prevalence of premenstrual syndrome symptoms are nonnormal. Thus, we will use the nonparametric statistical difference tests. Therefore, the Kruskal-Wallis Test was used to test whether there were statistically significant differences between the means of variables of the prevalence of premenstrual syndrome symptoms for members of the sample according to age, academic program, academic year and age at puberty (beginning of menstruation), as well as the Mann-Whitney Test to test whether there are statistically significant differences between the means of variables of the prevalence of premenstrual syndrome symptoms for the sample members according to nationality, marital status and menstrual cycle as they appear in Table (6) and (7) respectively.

Table (6): Summary of the results of the Kruskal test tables to study the statistical differences between the means of the study variables for the individuals of the sample according to some Socio- demographic characteristics Data

Socio- demogra	aphic characteristics Data	Mean Ranks	Significant Level
Age	(1) 18-20	141.33	.295
	(2) 21-23	153.37	
	(3) 24-26	167.29	
	(4) 27 and older	148.74	
Academic	(1) Nursing	150.32	.123
program	(2) phlebotomy	180.98	
	(3) Medical records	152.15	
Academic	(1) First year	114.65	$.000^{*}$
year	(2) Second year	166.95	
	(3) Third year	174.94	
Age at	(1) Less than 9 years	122.29	.376
puberty	(2) 9-11	162.92	
(beginning of	(3) 12-14	154.67	
menstruation)	(4) 15-17	149.25	

* There is a statistically significant difference at the level of 0.05

Table (6) above, shows that there are no statistically significant differences at the level of significance 0.05 between the mean scores of the questionnaire results for all variables of the prevalence of premenstrual syndrome symptoms according to Age, Academic program and Age at puberty (beginning of menstruation) while there are statistically significant differences at the significance level 0.05 between the mean scores of the survey results for all variables of the prevalence of premenstrual syndrome symptoms according to the Academic year. Through the mean ranks, we notice that the third year was the most perceive to the prevalence of premenstrual syndrome symptoms followed by the second year while the first year was the least perceive than their counterparts in the Academic year.

Table (7): Summary of the results of the Mann-Whitney Test tables to study the statistical differences between the means of study variables for the sample members according to the other Socio- demographic characteristics Data

Socio- demogra	phic characteristics Data	Mean Ranks	Significant Level
Nationality	(1) Kuwaiti	150.36	.423
	(2) Non-Kuwaiti	158.48	
Marital Status	(1) Single (miss, divorced or widowed)	152.94	.589
	(2) Married	159.33	
Menstrual cycle	(1) Regular	140.81	$.000^{*}$
	(2) Irregular	181.35	

* There is a statistically significant difference at the level of 0.05

Table (7) above, shows that there is no statistically significant difference at the level of significance 0.05 between the mean scores of the questionnaire results for all variables of the prevalence of premenstrual syndrome symptoms according to Nationality and Marital Status, while there is statistically significant difference at the significance level 0.05 between the mean scores of the survey results for all variables of the prevalence of premenstrual syndrome symptoms according to Menstrual cycle. Through the mean ranks, we notice that the irregular was the most perceive to the prevalence of premenstrual syndrome symptoms than the regular in the Menstrual cycle.

iv. Discussion

The objective of the present study was to evaluate the experience and severity of PMS symptoms among Female Students in Nursing Institute in Kuwait. This study was successful in determining the prevalence of PMS among female Students in Nursing Institute in Kuwait. Among 308 respondents,303 (98.4%) suffered from at least one or more of PMS symptoms, with varied levels of severity. This was similar to a study conducted in Saudi Arabia that found 98.9% of participants reported at least one PMS symptom despite having wider age range of their sample than this study (Algahtani & Jahrami, 2014). Furthermore, two studies among university students in U.A.E and Palestine found that all participants (100%) had PMS symptoms(Hashim et al., 2019)(Abu Alwafa et al., 2021).

Physical PMS symptoms were the most common in this study's participants. 97.7% of participants experienced some kind of physical symptoms. Comparable prevalence of physical PMS symptoms was found in Saudi women (97.9%)(Algahtani & Jahrami, 2014). A slightly higher prevalence of physical PMS symptoms was reported in UAE (99.3%) and Palestine(100%) university students (Hashim et al., 2019)(Abu Alwafa et al., 2021).

Psychological PMS symptoms were reported by 95.5 percent of respondents in this study. Algahtani & Jahrami study had similar percentage of psychological symptoms prevalence (97.2%) (Algahtani & Jahrami, 2014). University students in UAE and Palestine have reported higher percentages (99.7%) (Hashim et al., 2019)(Abu Alwafa et al., 2021).

For days, the usual life of a woman with PMS can be disrupted. In the present study, PMS symptoms affected 74% of participants' behaviours. Correspondingly, behavioural symptoms were found in 77.7% of university students in the UAE(Hashim et al., 2019). Among Saudi women with PMS, 67.2 percent reported behavioural symptoms(Algahtani & Jahrami, 2014). However, a higher prevalence of behavioural symptoms was shown among Palestinian sample with PMS(85.2%)(Abu Alwafa et al., 2021).

Premenstrual symptoms ranged in severity and frequency from one study to the next. abdominal pain (90.6%), lethargy/ fatigue/ decreased energy (86%), depressed mood (85.4%), feeling angry (84.4%), and muscle, joint, and back pain (84.1%), were among the most commonly reported premenstrual symptoms in the current study. The complicated nature of PMS, which includes both physical and psychological elements, may explain this. Furthermore, abdominal pain (49.6%) muscle, joint, and back pain (49.3%) and lethargy/ fatigue/ low energy (40.9 percent) were the most commonly reported physical symptoms among females in the current study, which is consistent with the vast majority of females assessed in many other studies(Hashim et al., 2019)(Gamal & Shahin, 2015)(Goker et al., 2014)(Silva et al., 2006). Abu Alwafa et al reported that the most common PMS symptoms in Palestinian university students are lethargy/ fatigue/ decreased energy (88.7%), affective labiality (88.5%), hopelessness (87.4%), and depressed mood (87%)(Abu Alwafa et al., 2021). Also, In Saudi women, lethargy (89.9%), depressed mood (88.5%), muscular, joint, and back pain (86.7%), and anger (89.6%) were the most common PMS symptoms(Algahtani & Jahrami, 2014). Depressed mood (95%) was the most common PMS syndrome among university students in the UAE, followed by lethargy/ fatigue/ decreased energy (92%), muscle, joint, abdominal, and back pain (89.3%), and feelings of anger (85.7 percent) (Hashim et al., 2019).

In the current study, the prevalence of premenstrual symptoms increased with the participants' academic class. The prevalence of premenstrual syndrome symptoms was highest in the third year, followed by the second year, and lowest in the first academic year. This might be because senior students are under higher academic stress and are completing clinical rotations in various hospitals and clinics, both of which demand more physical and mental work. Similarly, studies done in Kuwait and Palestine indicated that the severity of premenstrual syndrome was associated to the amount of training of the students(Omu et al., 2011)(Nazzal, 2015).

4.1 <u>Limitations:</u>

There are certain limitations to this study that should be considered. To begin with, this study was limited to students at Nursing Institute in Kuwait, which limits its generalizability. Moreover, although we did our utmost to safeguard the privacy of the participants, utilizing a self-administered questionnaire to research such a sensitive topic exposes it to information bias because some students may not want to discuss their personal problems. Furthermore, employing a prospective study design to allow participants to log their symptoms could be the best option.

v. Conclusion

PMS symptoms were reported by 98.4 percent of those who took part in the study. Abdominal pain was the most common PMS symptom, followed by lethargy/ fatigue/decreased energy. The most common severe physical symptoms were abdominal pain and muscle, joint, and back pain, while the most common moderate symptoms were Depressed mood and feeling bloated, and the most common mild symptoms were Difficulty in concentrating and Anxiety/ worry. In addition, a strong positive association between

The significant prevalence of PMS among female students necessitates action to assist and support individuals who are experiencing severe symptoms. It is critical to raise awareness about this syndrome. Traditional educational modules as well as novel technological methods can be used to implement education programs.

vi. <u>Recommendations</u>

- 1. -Educational programs regarding Premenstrual syndrome and appropriate interventions should be presented to educational organizations [schools and universities].
- 2. Public awareness efforts through the media to raise community knowledge of Premenstrual syndrome and combat the stigma associated with it.
- 3. Create support groups and Premenstrual syndrome hotlines for moderate/severe PMS patients to broaden the support network for women.
- 4. In order to reduce the impact of Premenstrual syndrome on the women' quality of life, research should be focused on finding appropriate therapies.

Conflict of interest

None.

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