

# Coping Mechanisms among Female Students with Premenstrual Syndrome

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## ABSTRACT

**Objective:** Determine the influence of coping mechanisms on symptoms of premenstrual syndrome among female students.

**Methodology:** A descriptive correlational study was conducted on 372 female students at the University of Kerbala between 26th September 2023, and 4th June 2024. By using a self-report questionnaire, data was collected. The data collection instrument is divided into three parts: socio-demographic characteristics, the PMS scale, and the coping mechanisms scale. A panel of experts determined the validity of the questionnaire, and the reliability was determined through a pilot study of 37 students. SPSS was used to analyze data.

**Results:** This study found that about 57.3% of students had moderate symptoms and 30.6% had severe symptoms. Female students show moderate coping mechanisms among all except the item (I understand that the changes that happen to me are temporary and that they will go away over time) that shows good coping mechanisms. Also a high significant differences in physical symptoms, psychological symptoms, behavioral symptoms, and overall symptoms at p-values = .001 was found.

**Conclusion:** This study concludes that the coping mechanisms among female students highly influence the symptoms associated with premenstrual syndrome.

**Recommendations:** Educating the community and increasing female students' awareness of the changes that occur during the premenstrual period and how to deal with these changes in a healthy way.

**Keywords:** Coping Mechanisms, Premenstrual Syndrome, Female Students

## INTRODUCTION

The female reproductive system shows regular monthly changes in preparation for fertilization and pregnancy. These changes occur under the control of hormones, and one of their most prominent characteristics is the shedding of the inner uterine lining and its exit in the form of vaginal bleeding. This condition is called the menstrual cycle<sup>1</sup>. There are many disorders among females related to their menstrual cycle, including premenstrual syndrome, abnormal uterine bleeding, endometriosis, amenorrhea, and premenstrual dysphoric disorder<sup>2</sup>. The most common problem among women of reproductive age that occurs periodically is premenstrual syndrome. During this period, women suffer from psychological, physical, and behavioral symptoms and changes whose severity varies from one woman to another. Very severe symptoms have been classified as a depressive disorder called premenstrual dysphoric disorder, according to the DSM-5<sup>3</sup>. Most of the symptoms of PMS are related to the physical condition and mood, and in most women, these symptoms are severe, which hinders and affects their family and career lives, so it is considered a public health problem among females<sup>4</sup>. This syndrome is considered one of the complex disorders that affect women at the age of reproduction. These changes can be considered to result from neuroendocrine differences. This syndrome appears in the luteal phase after ovulation and shows at least one symptom that may be psychological, physical, or perhaps behavioral, which creates a burden on the woman's relationships and daily activities<sup>5</sup>. The prevalence of premenstrual syndrome ranges between 5.3% and 31% in women of childbearing age. This disorder

affects millions of girls worldwide who are of reproductive age. Premenstrual dysphoric disorder and PMS are said to have relative prevalence rates of 2.8% and 98.5%, respectively<sup>6</sup>. Women with this syndrome have reported approximately 300 different symptoms. While lifestyle modifications can alleviate mild-to-moderate PMS symptoms, pharmaceutical therapies are necessary for the majority of severe symptoms<sup>7</sup>. Because there is no fixed and specific definition for this syndrome and the definitions established are constantly changing, studies have shown great variation in the prevalence of symptoms of the syndrome<sup>8</sup>. Hormonal changes could be the reason behind the group of disturbing symptoms that affect women in the premenstrual period, which in turn lead to difficulties in daily performance, so life of woman with PMS show poorer quality than those without PMS<sup>9</sup>. Assisting young women with PMS in developing coping mechanisms can improve their quality of life and safeguard their physical and emotional well-being. PMS is a significant and prevalent issue that lowers quality of life<sup>10</sup>. Thus, it is important to understand the coping mechanisms and coping level of young women with PMS from a research and therapeutic perspective<sup>11</sup>. Though little is known about the contributing reasons and useful coping techniques, PMS is generally recognized as a widespread public health issue that affects over half of all women in the world who are of reproductive age, including university students. It is also related to a lower quality of life and decreased productivity<sup>12</sup>. Therefore, this study aimed to assess premenstrual syndrome, the factors associated with it, and coping mechanisms used by female university students, which helps reduce the problem by applying the most effective coping mechanisms in alleviating its symptoms and

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avoiding factors that increase its severity, thus reducing its impact on the academic performance of female students.

## METHODS

**The Study Design:** A descriptive correlational study was used, as it is the most appropriate with the study goals to determine whether premenstrual symptoms are influenced by the coping mechanisms used by female students at the University of Kerbala from 26<sup>th</sup> September 2023 to 4<sup>th</sup> June 2024.

**Objective:** To determine the influence of coping mechanisms on symptoms of premenstrual syndrome among female students.

**Setting and population of the Study:** The sample was collected from the University of Kerbala from five colleges: Nursing college, Applied Medical Sciences college, the Physical Education and Sports Sciences college, Tourism Sciences college, and the College of Law. The University of Kerbala contains 17 colleges, and the above colleges were chosen randomly by using a lottery. Total female student in kerbala university was 11022 students.

**Sample size:** According to Cochran<sup>13</sup>, to obtain the feasible sample with a 95% confidence interval (z). With a marginal error of 5% (d), the sample size was calculated by using this formula. N is the number of the total population, while p is the coefficient of variation between the population members and its proportion is 0.5

$$n = \frac{\left(\frac{z}{d}\right)^2 p^2}{1 + \frac{1}{N} \left[\left(\frac{z}{d}\right)^2 p^2 - 1\right]}$$

$$n = \frac{\left(\frac{1.96}{0.05}\right)^2 (0.5)^2}{1 + \frac{1}{11022} \left[\left(\frac{1.96}{0.05}\right)^2 (0.5)^2 - 1\right]} = 372$$

The total sample size is 372 people, who were divided into the colleges included in the study by using the sample ratio, which is the percentage of the required sample size out of the total number of female students in the five colleges using this equation ( $n_h = \left(\frac{N_h}{N}\right) \times n$ ), the distribution of students according colleges was as the following table.

**Table 1.** Distribution of female students according to Colleges

Colleges	Number of total female student	Number of samples
Nursing college	255	78
Applied medical sciences college	247	76
Physical Education and Sports Sciences college	186	58
Tourism Sciences college	154	47
College of Law	368	113
Total	1210	372

Utilizing a non-probability (convenience) sample, the students were chosen.

**Administrative Arrangements:** The study's protocol and formal approval to perform it were obtained by the University of Kerbala College of Nursing. After obtaining the title and the questionnaire, the College of Nursing's Ethics Committee evaluated the study instruments (questionnaire) and decided to move on with the research, and the student's consent was obtained verbally and in writing through the participant's consent paragraph located on the first page of the instrument.

**Study Instruments:** In this study, the researcher used the questionnaire as a scientific means to collect data in order to analyze these data and reach certain results that give an answer to the research question. This questionnaire consisted of following three parts

### Part I: Socio-Demographic and Reproductive Characteristics:

This part is divided into two subsections: the socio-demographic characteristics section, which contains the student's personal information such as age, marital status, residency, college, stage of study, who she lives with (family, friends, or others), the mother's level of education, and the family's monthly income.

The other section contains the student's reproductive characteristics, such as family history of premenstrual syndrome, age at first menstrual period, menstrual cycle duration, menstrual cycle interval, regularity of the menstrual cycle, and amount of bleeding during the menstrual cycle.

**Part II: Premenstrual syndrome Questionnaire:** The scale for premenstrual syndrome was used<sup>14</sup>. It is consisting of 40 items divided into three subsections, 16 items under the name of physical symptoms, 12 items called psychological symptoms, and finally behavioral symptoms, which are 12 items. The scale has been modified to be 3 instead of 5 according to the Likert scale

**Part III: Coping Mechanisms Questionnaire:** This scale has been used in several previous research<sup>15</sup>, which is a scale that determines the coping mechanisms used by women in the premenstrual period. The original scale contains 24 items, but it was modified to suit our culture. After modification the scale became 22-item instead 24 item, this modifications were made according to the opinion of the experts.

**Validity of the Questionnaire:** To determine the content validity of the study instrument, the tool was presented to the panel of (17) experts to assess the validity of the content. To determine the validity of the content of the study tool, the tool was presented to a jury consisting of (17) experts to evaluate the validity of the content. They are members from different Iraqi universities, and have at least nine years of experience. Some modifications have been made according to the opinion of experts, to make the questionnaire more suitable and understandable for female students.

**Pilot Study:** To determine the research instrument's reliability a pilot study done before collecting the data. It was applied on (37) female students were taken from the five colleges included in the study (Nursing college, Applied Medical Sciences college, the Physical Education and Sports Sciences college, Tourism Sciences college, and the College of Law) in the period between the 24th and 27th of December 2023. Each student took about 17 to 25 minutes to complete the questionnaire, which is a relatively acceptable time. The pilot study's sample is not included in the original study.

**Reliability of the Instrument:** The internal consistency between items was determined by using Cronbach's alpha coefficient which shows excellent evaluation for premenstrual syndrome scale (0.920), and shows good evaluation for coping mechanisms scale (0.701); these findings mean that the questionnaires had adequate level of internal consistency and equivalence measurability.

**Data collection:** Data were collected after explaining the study's goals to students and obtaining their consent, during the first three weeks of January 2024, with sample collection taking 3 days for each of the colleges included in the study. Colleges were visited 5 days a week from 8:30 a.m. to 2:30 p.m., and a self-report questionnaire was used

to collect data.

**Data Analysis:** Version 26.0 of the Statistical Package for Social Sciences (SPSS) was used to analyze and interpret the data.

## RESULT:

Overall score of symptoms which indicates that female students associated with moderate to severe symptoms of premenstrual syndrome as reported by 57.3% of them with moderate and 30.6% with severe ( $M \pm SD = 84.15 \pm 14.898$ ) as shown in table (2).

**Table 2.** Overall Assessment the Severity of Premenstrual Syndrome Symptoms among Female Students

Symptoms	F	%	M	SD
Mild	45	12.1		
Moderate	213	57.3	84.15	14.898
Severe	114	30.6		
<b>Total</b>	<b>372</b>	<b>100</b>		

f: Frequency, %: Percentage, M: Mean for total score, SD: Standard

Deviation for total score, Ass: Assessment Mild= 40 – 66.66, Moderate= 66.67– 93.33, Severe= 93.34 – 120

As presented in table (3), findings indicate that female students show moderate coping mechanisms among all except item (I understand that the changes that happen to me are temporary, and that they will go away over time) that show good coping mechanisms

As manifests in table (4) that coping mechanisms among female students are highly influence the symptoms associated with premenstrual syndrome as indicated by high significant differences in physical symptoms, psychological symptoms, behavioral symptoms, and overall symptoms at p-values= .001, .001, .001, and .001.

## DISCUSSION

The overall score of PMS symptoms as reported in table (2) indicates that female students are associated with moderate to severe symptoms of premenstrual syndrome, (57.3%) of them having moderate symptoms and (30.6%) with severe symptoms. Which is in agreement

**Table 3.** Assessment of Coping Mechanisms related to Premenstrual Syndrome among Female Students (N=372)

List	Coping mechanisms	Scale	f (%)	M	Assess.
1	Take vitamins and supplements	Never	152(40.9)	1.78	Moderate
		Sometime	148(39.8)		
		Always	72(19.4)		
2	Take rest and sleep	Never	38(10.2)	2.28	Moderate
		Sometime	191(51.3)		
		Always	143(38.4)		
3	Take pain-killer	Never	113(30.4)	2.09	Moderate
		Sometime	114(30.6)		
		Always	145(39)		
4	Apply a hot water bag on the painful point	Never	157(42.2)	1.84	Moderate
		Sometime	118(31.7)		
		Always	97(26.1)		
5	Take a warm shower	Never	88(23.7)	2.12	Moderate
		Sometime	152(40.9)		
		Always	132(35.5)		
6	listen to soft music	Never	161(43.3)	1.77	Moderate
		Sometime	135(36.3)		
		Always	76(20.4)		
7	Drink warm water and hot drinks	Never	65(17.5)	2.20	Moderate
		Sometime	166(44.6)		
		Always	141(37.9)		
8	listen to the Qur'an or perform prayers and supplications	Never	49(13.2)	2.30	Moderate
		Sometime	161(43.3)		
		Always	162(43.5)		
9	Take exercises	Never	175(47)	1.72	Moderate
		Sometime	125(33.6)		
		Always	72(19.4)		
10	Leading busy time	Never	97(26.1)	1.98	Moderate
		Sometime	184(49.5)		
		Always	91(24.5)		
11	Apply massage mechanism on painful point	Never	105(28.2)	2.02	Moderate
		Sometime	153(41.1)		
		Always	114(30.6)		

12	Divert attention (reading, drawing, etc.)	Never	93(25)	2.01	Moderate
		Sometime	181(48.7)		
		Always	98(26.3)		
13	Encourage oneself to be patience	Never	80(21.5)	2.09	Moderate
		Sometime	180(48.4)		
		Always	112(30.1)		
14	Talk to friends about symptoms	Never	131(35.5)	1.92	Moderate
		Sometime	138(37.1)		
		Always	103(27.7)		
15	Receive the support from friends and family	Never	116(31.2)	1.95	Moderate
		Sometime	160(43)		
		Always	96(25.8)		
16	Understand that the changes happen are temporary, and they will go away over time	Never	51(13.7)	2.36	Good
		Sometime	136(36.6)		
		Always	185(49.7)		
17	Take useful herbal to relieve pain	Never	111(29.8)	2.00	Moderate
		Sometime	150(40.3)		
		Always	111(29.8)		
18	Have coffee or some caffeine drinks	Never	96(25.8)	2.02	Moderate
		Sometime	173(46.5)		
		Always	103(27.7)		
19	Eat less and may skip some meals	Never	120(32.3)	1.93	Moderate
		Sometime	159(42.7)		
		Always	93(25)		
20	Eat more than usual.	Never	125(33.6)	2.10	Moderate
		Sometime	158(42.5)		
		Always	89(23.9)		
21	Spend most of time alone.	Never	68(18.3)	1.84	Moderate
		Sometime	176(47.3)		
		Always	128(34.4)		
22	Crying	Never	157(42.2)	2.23	Moderate
		Sometime	145(39)		
		Always	70(18.8)		

M: Mean, Assess: Assessment, Poor= 1 – 1.66, Moderate= 1.66 – 2.33, Good= 2.34 – 3

**Table 4.** Influence of Coping Mechanisms on Symptoms of Premenstrual Syndrome among Female Students (N=372)

Coping Symptoms	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Physical	.306	.043	.344	7.058	.001
Psychological	.172	.044	.202	3.960	.001
Behavioral	.192	.043	.225	4.441	.001
Overall symptoms	.0670	.110	.301	6.080	.001

with study that found (58.7%) of physicians who work in port said city had "moderate to severe PMS"<sup>16</sup>. Also a moderate degree of PMS was present in 53.4% of the Egyptian study sample, whereas 34.3% of them had severe PMS<sup>17</sup>. Out of the 132 cases of PMS, 89 (63%) had moderate PMS and 43 (31%) had severe PMS, which is also a study that matches the results of this study<sup>18</sup>. Concerning coping mechanisms, approximately (71%) of girls following moderate coping mechanisms with premenstrual symptoms, which is the majority percent, and this is what was shown in previous studies, including that shown majority of girls use some coping mechanisms to get rid of or reduce the symptoms of this syndrome<sup>19</sup>. Also, (93.4%) of females who participated in Ethiopian study were applying at least one strategy to deal with PMS symptoms<sup>20</sup>. Understanding that the changes are temporary and will go away over time was a good coping mechanism in this study, which is a matched result of study that reported 71% accept change as a

normal temporary condition and acknowledge that there is nothing that can be done<sup>21</sup>. To assess the symptoms of PMS and the behavioral coping strategies used, study conducting in India found that most of the participants used healthy coping mechanisms, as (75.4%) of them accepted the condition as normal and nothing could be done<sup>22</sup>.

Rest and sleep, a hot shower, drinking warm water and hot drinks, praying and listening to the Qur'an, eating more than usual, and crying were also more frequent strategies used by students to relieve or reduce symptoms. In agreement with this finding were the results which found that the most widely used coping mechanisms among women are: resting, sleeping, accepting the changes as the normal process, listening to music, painkillers, diverting attention, exercising, taking hot showers, eating more, and praying<sup>23</sup>. The most widely used coping strategy was resting and sleeping enough, which was followed by

regarding changes as a temporary process, taking a warm shower, and controlling feelings as Korean study found<sup>15</sup>.

Table (4) shows that female students' coping mechanisms have a significant impact on the symptoms associated with premenstrual syndrome ( $P=0.001$ ), which means that female students show good coping mechanisms as the severity of symptoms increases. This is consistent with the results which revealed a strong positive correlation ( $p < 0.001$ ) between coping mechanisms and premenstrual symptoms<sup>23-25</sup>. This suggests that females develop more strategies for managing the premenstrual syndrome the more severe it gets. Also, this result is supported by study which found a positive association (at  $P<0.05$ ) between PMS symptoms and coping techniques, which means employing certain coping mechanisms helps to alleviate premenstrual symptoms<sup>26</sup>.

## CONCLUSION

**The study concluded that the symptoms of the syndrome are greatly influenced by coping mechanisms, which means that female students demonstrate good coping mechanisms when the severity of symptoms increases.**

## RECOMMENDATIONS

1. Increasing female students' awareness of the changes that occur to them during the premenstrual period and how to deal with these changes in a healthy ways by holding courses and workshops. Modern means, such as social media can be used to hold these programs online so that the largest possible number of females can participate.
2. Educating the community about this syndrome to know what females suffer from during this period is necessary in order to accept their psychological changes and reduce the burden on them from their family, husband, or friends.
3. The researcher also recommends conducting other studies on premenstrual syndrome and coping mechanisms to find out whether there are new and effective coping mechanisms that girls will practice in the coming days.

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**Competing Interest:** None

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