



PREMENSTRUAL SYNDROME AND COPING BEHAVIOR AMONG NURSING STUDENTS

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Abstract:

Premenstrual syndrome is a group of symptoms which occurs during luteal phase of menstrual cycle. Severe form of PMS is termed as premenstrual dysphoric disorder (PMDD). Materials and Methods: A qualitative, descriptive study conducted to assess the premenstrual syndrome and various coping behaviors among nursing students. Simple random sampling technique used to select 72 samples, data was collected using structured questionnaire to assess PMS and coping behaviors adopted by students. Results: The study found that most of the subjects had moderate level of PMS, vast majority had anger/irritability, decreased interest in home activities and work, joint/muscle pain and fatigue/lack of energy were most reported symptoms. Majority of the students use electronic devices as a coping technique during their PMS. Conclusion: This study finding concludes that the students need to be educated about healthy coping strategies.

Key Words: Premenstrual Syndrome, Coping Behaviors, Adolescent Girls

Introduction:

Premenstrual syndrome (PMS) is defined as a collection of recurrent physical, cognitive, affective, and behavioral symptoms affecting women, occurring cyclically during the luteal phase of the menstrual cycle and resolving at or within a few days of the onset of menstruation. (Natnael Eshetu, et al, 2022). Adolescents period is a transitional stage of physical, physiological and psychological development from puberty to adulthood. Worldwide, one in every six persons is an adolescent, which is more than 1.2 billion. In India, about 21% of the total population is adolescents. (C Sivagurunathan, 2015). Studies showed that an estimated 90% of females of reproductive age were impacted by mild to acute premenstrual symptoms. Among them, about 20% to 40% encounter PMS, while 2% to 8% experience PMDD. Similarly, it appears that the PMDD prevalence differs depending on culture, as well as ethnic group. For example, the PMDD prevalence in a nationwide sample of Korean women is 2.4%, 3.3% in a Bulgarian population, 7.7% among female university students in Jordan, and even 17.6% in young adult women in southern Brazil. (Mingzhou Gao, et al, 2022). The syndrome has been associated with a variety of biosocial and psychological factors, including altered transcapillary fluid balance, a diet high in beef or caffeine-containing beverages, abnormal serotonin function, progesterone levels, altered endorphin, modulation of gonadotrophin secretion, and exercise habits. (Amany Edward Seedhom, 2013).

PMS increases the likelihood of suicide and car accidents, as well as absenteeism from work and school, poor academic performance, and serious psychiatric problems. (Tenkir et al., 2003). PMS is caused by rapid fluctuations in gonadal hormones, which is one of the reasons women are more likely to suffer from depression than men. According to studies from numerous nations, PMS symptoms are more common and severe in highly educated women than in illiterate women, suggesting a possible link between stress and PMS. (Tolossa, F.W & Bekele, M.L, 2014). Coping is defined as cognitive and behavioral efforts employed in response to external or internal demands that the individual deems to be threats to their well-being. (Carlos Freire, 2020). Though Premenstrual syndrome seriously affecting women's life, it has been reported that only 59.6% of women with PMS symptoms would like to take treatment for their complaints and 28.8% seek medical help. Even if there are previously identified effective coping mechanisms for PMS like; regular exercise, taking rest, massage, listening to music, hot drink, taking analgesics and taking a hot shower, most women consider it as normal physiological process that nothing should be done. In view of the foregoing, we sought to assess premenstrual syndrome and various coping behaviors adopted by the nursing students.

Materials and Methods:

Research approach and Design:

Quantitative approach with Descriptive study design

Research Setting:

The study was conducted at Sacred Heart Nursing College, Madurai, Tamilnadu

Population:

Female Nursing Students of Sacred Heart Nursing College, Total population was 146.

Sample Size:

Sample size was calculated using the estimated prevalence of PMS. Total sample size for the study was 72

$$\text{Formula: } n = \frac{t^2 \times p(1-p)}{m^2}$$

Description:

- n = required sample size.
- t = confidence level at 95% (standard value of 1.96).
- p = estimated prevalence of PMS in the study area (95%).
- m = margin of error at 5% (standard value of 0.05).
- $n = (1.96)^2 \times 0.95(1 - 0.95)/(0.05)^2$.
- $n = 72$.

Sampling Technique:

Simple random sampling technique was used to select samples. 72 students were selected by lottery method.

Tools:

The data collection tool includes demographic information, menstrual characteristics, life style factors and structured questionnaire on premenstrual symptoms.

Section A: Baseline Information

It contains information regarding age, area of living, mothers' education, type of family and BMI.

Section B: Menstrual Characteristics

This section consists of Age at menarche, pattern of menstrual cycle, length of menstrual cycle, duration of menstrual flow and family history of PMS.

Section D: Structured Questionnaire on PMS

This section consisted of 15 items based on ACOG criteria, which includes physical symptoms (7 items) and emotional symptoms (8 items). Those who had more than five symptoms (from both physical and emotional) were considered to be with PMS. Scores were assigned based on whether the symptom was described as mild (score = 1; noticeable but not interfered with daily activities), moderate (score = 2; interfere with daily activities), severe (score =3; intolerable) and score 0 for no symptoms. The maximum score was 45.

Section C: Coping Behaviors

This section includes questions related to the coping behaviors adopted by nursing students such as, taking hot or cold shower, Do not express anger on others, Turn to study and forget things, Talk to family members, Taking rest, accepts PMS as natural, avoiding food, eating more, crying, listening music, drinking coffee, take soft drinks, Use electronic device, use drugs and use naturopathy.

Validity and Reliability:

The tool has been validated by experts and pre-tested by Test-retest method and the score was $r = 0.8$.

Data Collection:

Formal permission obtained from the institution head and the purpose of the study was explained to the participants and informed consent obtained from the students. Survey was conducted to rule out the adolescent girls with premenstrual syndrome. Then the data was collected by administering the structured questionnaire. The data obtained were analyzed using a Microsoft Excel spreadsheet (based on the 2007 version) and the results reported in the form of descriptive and inferential statistics.

Results:

The results are presented in the form of tables and charts for the following order of reporting

- Distribution of adolescent girls based on demographic information

Table 1: Frequency and Percentage distribution of Sample according to Socio Demographic Characteristics (n=72)

S.No	Demographic Profile	Frequency	Percentage (%)	χ^2 P value
1	Age			5.8005 0.4459#
	17-18	5	6.94	
	19-20	44	61.11	
	21-22	22	30.56	
	> 22	1	1.39	
2	Education of Mother			6.91446 0.14048#
	No formal education	38	52.78	
	Higher Secondary	26	36.11	
	Graduate	8	11.11	
3	Type of family			1.6657 0.434808#
	Nuclear	62	86.11	
	Joint	10	13.89	

4	Area of living			
	Rural	32	44.44	8.4072 0.077752#
	Semi Urban	13	18.06	
	Urban	27	37.5	
5	BMI			
	Normal	62	86.11	3.6727 0.452103#
	Over weight	7	9.72	
	Obese	3	4.17	
Menstrual Characteristics:				
6	Age at menarche(in years)			
	<11	2	2.78	2.4365
	11-13	43	59.72	0.656035#
	14-16	27	37.5	
7	Regularity of menstrual cycle			
	Regular	58	80.56	0.0428
	Irregular	14	19.44	0.9788#
8	Length of Menstrual cycle			
	< 28	9	12.5	6.5611 0.584635#
	28 days	30	41.67	
	29 days	7	9.72	
	30 days	15	20.83	
	>30 days	11	15.28	
9	Duration of Menstruation			
	< 3 days	7	9.72	2.1339 0.711151#
	3-4 days	36	50	
	5-6 days	29	40.28	
10	Family history of PMS			
	Yes	15	20.83	7.1307
	No	57	79.17	0.028287*

* Significant at $p < 0.05$

Table 1 shows that majority of the adolescent girls were between the age of 19 and 22(two thirds of the adolescent girls were between the age of 19 and 20, one third is between 21 and 22 years old), 52.78% have mothers without formal education, 44.44% of adolescent girls live in rural areas, vast majority of adolescent girls 86.11% live in nuclear families, most of the adolescent girls 86.11% were with normal BMI. In relation to menstrual characteristics, most of subjects 59.72% have attained menarche between the age of 11 and 13 years, 37.5% attained between the age of 14 and 16 years, majority of the subjects had regular menstrual cycle, most of the adolescent girls have 28 days and 30 days cycle, which is 41.67% and 20.83% respectively. Half of the girls had 3-4 days of duration and 40.28% of the girls had 5-6 days of duration and a family history of PMS was reported by 20.83%. Distribution of adolescent girls based on Severity of Premenstrual Syndrome:

Figure 1: Severity of Premenstrual Syndrome: (n=72)

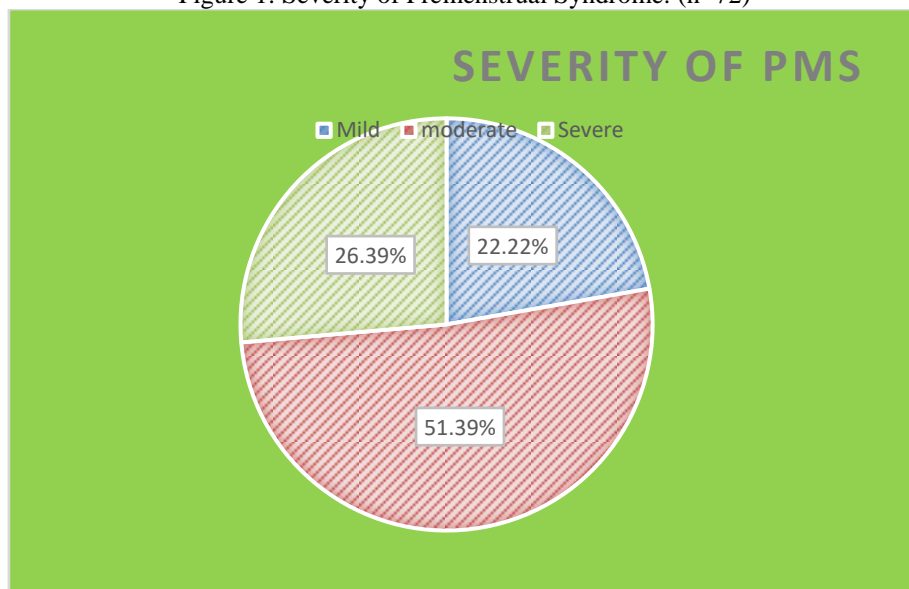


Figure 1 depicts, a remarkably large proportion of 51.39% had moderate PMS, and a smaller proportion of 22.22 % had mild PMS, while the remaining proportion of 26.39% had severe PMS (Figure 1).

- Distribution of adolescent girls based on Emotional Symptoms of PMS:

Figure 2: Distribution of adolescent girls based on Emotional Symptoms of Premenstrual Syndrome

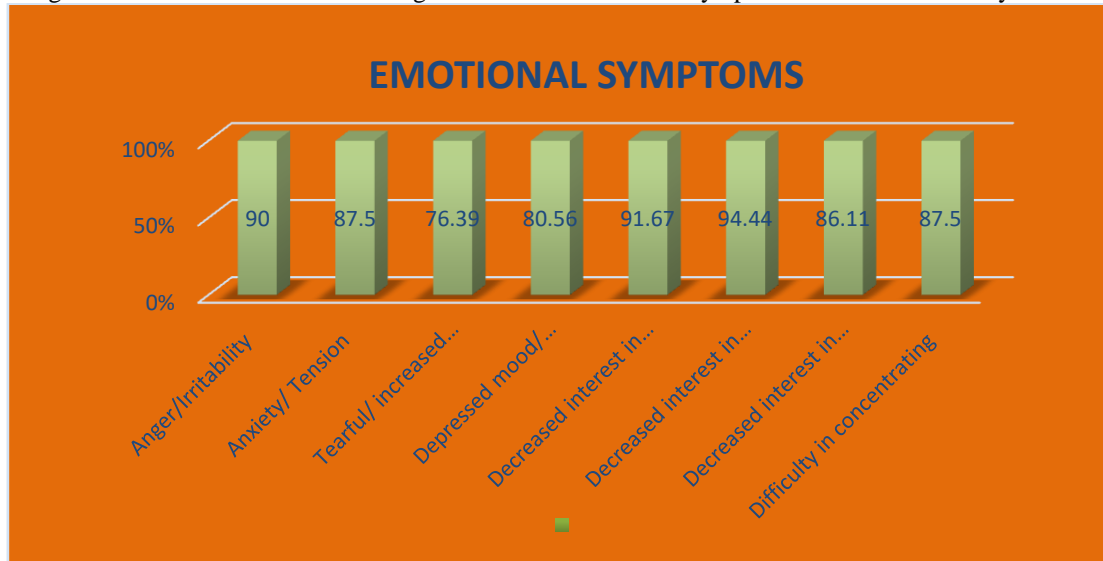


Figure 2 represents 90% of the girls had anger/irritability, 87.5% reported anxiety/tension, 76.39% experienced tearful/increased sensitivity to rejection, 80.56% were felt depressed mood/hopelessness, 91.67% had decreased interest in work, 94.44% experienced decreased interest in home activities, 86.11% reported decreased interest in social activities, and 87.5% expressed difficulty in concentration during Premenstrual period. The severity of emotional symptoms of PMS is depicted in table 2.

Table 2: Distribution of subjects based on Mean and Standard deviation of severity of Psychological symptoms of PMS: (n=72)

S.No	Psychological Symptoms of PMS	Mild	Moderate	Severe
		M±SD	M±SD	M±SD
1	Anger / Irritability	0.3194±0.4695	0.6944 ± 0.9589	0.667 ± 1.256
2	Anxiety / Tension	0.306 ± 0.464	0.722 ±0.967	0.583 ± 1.196
3	Tearful / increased sensitivity to rejection	0.306 ± 0.464	0.583 ± 0.915	0.5 ± 1.126
4	Depressed mood / hopelessness	0.306 ± 0.464	0.639 ± 0.939	0.542 ± 1.162
5	Decreased interest in work activities	0.194 ± 0.399	0.889 ±1.001	0.833 ± 1.353
6	Decreased interest in home activities	0.222 ± 0.419	0.861 ± 0.997	0.875 ± 1.373
7	Decreased interest in social activities	0.208 ± 0.409	0.861 ± 0.997	0.667 ± 1.256
8	Difficulty in concentrating	0.264 ± 0.444	0.778 ± 0.982	0.778 ± 0.982

- Distribution of adolescent girls based on Physical Symptoms of PMS:

Figure 3: Distribution of adolescent girls based on Physical Symptoms of Premenstrual Syndrome

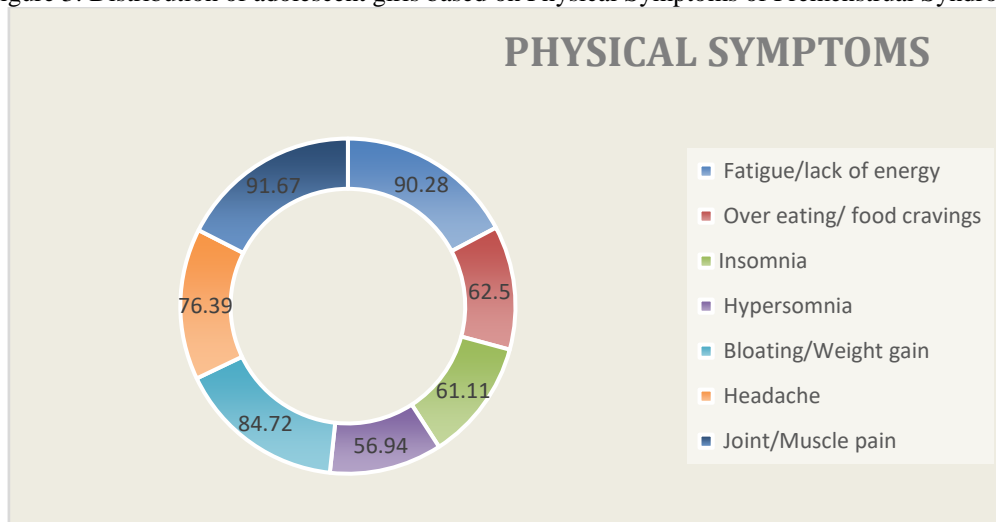


Figure 3 shows that joint/muscle pain and fatigue/lack of energy was reported by vast majority 91.67% and 90.28% of adolescent girls respectively, remarkably large proportion 84.72% felt bloating/weight gain, headache was reported by 76.39% of the adolescent girls, other physical symptoms like, over eating/food craving, insomnia and hypersomnia was reported by 62.5%, 61.11% and 56.94% of adolescent girls respectively. The severity of Physical symptoms of PMS is depicted in table 3.

Table 3: Distribution of subjects based on Mean and Standard deviation of severity of Physical symptoms of PMS: (n=72)

S.No	Physical Symptoms of PMS	Mild	Moderate	Severe
		M±SD	M±SD	M±SD
1	Fatigue/lack of energy	0.222±0.4186	0.6944 ± 0.9589	1.000 ± 1.424
2	Over eating/ food cravings	0.375 ±0.4875	0.25 ±0.666	0.375 ± 0.999
3	Insomnia	0.4027±0.4939	0.3611 ± 0.7747	0.125 ± 0.604
4	Hypersomnia	0.264 ± 0.444	0.3611 ± 0.7747	0.375 ± 0.998
5	Bloating/Weight gain	0.292 ±0.4577	0.5278 ±0.888	0.875 ± 1.373
6	Headache	0.292 ±0.4577	0.5278 ±0.888	0.875 ± 1.373
7	Joint/Muscle pain	0.208 ± 0.4089	0.8611 ± 0.9972	0.667 ± 1.2559

- Distribution of adolescent girls based on adoptive coping behavior during PMS:

Table 4: Frequency and Percentage distribution of Adolescent girls based on Adoptive Coping Behaviour during PMS (n=72)

S.No	Coping Behavior	Frequency	Percentage (%)
1	Taking hot or cold shower	39	54.17
2	Do not express anger on others	33	45.83
3	Turn to study and forget things	45	62.5
4	Talk to family members	54	75
5	Accept PMS as natural	50	69.44
6	Taking rest	64	88.89
7	Avoiding food	35	48.61
8	Eating more	12	16.67
9	Listening music	62	86.11
10	Crying	36	50
11	Drinking Coffee	46	63.89
12	Take soft drinks	30	41.67
13	Use Electronic device	60	83.33
14	Use Drugs	5	6.94
15	Use naturopathy	26	36.11

Table 4 depicts that majority 83.33% of the subjects use electronic devices, most of the girls 86.11% will listen to music to cope with their premenstrual symptoms, 54.17% of the adolescent girls take hot or cold shower, 45.83% of the adolescent girls were not express anger on others, 62.5% of the students turn to study and forget things during premenstrual period, 48.61% of the girls were avoiding food, half of the adolescent girls were crying during premenstrual period, three fourth of the subjects talk to family members, 69.44% of the adolescent girls accepting PMS as natural and nothing can be done, 88.89% of the girls take rest and do nothing during their premenstrual period, 63.89% drink coffee whereas 41.67% take soft drinks to cope with their symptoms, regarding treatment as a coping 36.11% use naturopathy and very few 6.94% of the adolescent girls alone use drugs for their symptoms.

- Correlation between PMS and adoptive Coping Behavior of adolescent girls:

Seventy two adolescent female students were assessed for their PMS and Coping behavior. A Pearson correlation coefficient was calculated to assess the linear relationship between PMS and coping behavior. There was a positive correlation between the two variables, $r=0.3823$, $p=0.00092$. (Table 5)

Table 5: Correlation between PMS and adoptive Coping Behavior of adolescent girls

Variable	r value	P value	Correlation
PMS &Coping Behavior	0.3823	0.00092	Positive weak correlation

Discussion:

- Distribution of adolescent girls based on demographic information

Present study found that majority of the adolescent girls was between the age of 19 and 22. The results are similar to those of Seedhom. A.E, et al (2013) who reported the age of adolescents with PMS was ranged from 17-23years with a mean age of 18.8 ± 0.9 (mean age \pm SD) years. The findings of BMI among adolescents and age at menarche were similar with findings by Prabha. V et al, (2019), they reported that 47% had normal BMI and nearly half of part of participants 52% were attained menarche between ages of 14-16 years. In present study, family history of PMS was reported by 20.83% which is

similar to the study conducted by Abeje. A and Berhanu. Z. (2016), they reported 39.2% of the adolescent girls with PMS had the family history of PMS.

- Distribution of adolescent girls based on Severity of Premenstrual Syndrome:
 - It was found that most of the subjects 51.39% had moderate PMS, smaller proportion had mild and severe PMS of 22.22% and 26.39% respectively.
 - The findings on the severity of emotional and physical symptoms of PMS (table 2 and table 3) were similar with finding by Amal Ahmed Abdel Hafez, et al, (2015). And Hatice IŞIK, et al, 2015.
- Distribution of adolescent girls based on adoptive coping behavior during PMS:
 - In present study, 45.83% of the adolescent girls were not express anger on others and 63.89% of the subjects drink coffee whereas 41.67% take soft drinks to cope with their symptoms (table 4), this results were comparable to the findings of the study by Amal Ahmed Abdel Hafez et al, (2015), who found that (82 %) of them took hot or cold drinks followed by not expressing anger on others (62 %).
- Correlation between PMS and adoptive Coping Behavior of adolescent girls:
 - A moderate positive correlation is found between PMS and adoptive coping behaviour (Table 5), this is similar to the findings of Siddharthan. S and Sowmya. R. (2020).

Conclusion:

According to the findings of this study, it is concluded that PMS is common among nursing students between the ages of 19 and 22. The students' coping mechanisms were revealed to be unhealthy. Therefore, there is an intense need to educate adolescent girls about menstruation and associated topics from their puberty, so they can choose a healthy lifestyle.

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