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Prevalence of premenstrual syndrome among the females in reproductive age group

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Abstract
Premenstrual syndrome (PMS) is a common disorder among women in reproductive age group. It is present with specific uncomfortable and unusual symptoms that clearly begin after ovulation and generally ends with the onset of menstruation. This disorder is particularly common in young age groups and therefore represents a significant public health problem in young women. The present study was conducted with an aim to assess the prevalence of Premenstrual syndrome among the females in reproductive age group. A descriptive survey design was used for conducting the study. By using the purposive sampling technique, 133 females in reproductive age group, studying at selected college of nursing, were chosen as a sample for the study. Data were collected personally by the researcher by using a structured questionnaire and a rating scale. The results of the study showed that, majority of the females were in 19-20 years of age (i.e., 60.15%), attained menarche between 13-14 years of age (i.e., 48.12%), with regular menstrual cycles (i.e., 79.70%), and had a family history of PMS (i.e., 63.16%). On the whole, females in the reproductive age group had mild to moderate degree of symptoms in all the three domains (i.e., physiological symptoms, behavioural symptoms and psychological symptoms). The overall mean score of PMS symptoms among the Females in Reproductive Age Group was 99.62 with a standard deviation of 27.31. No significant association was found between the prevalence of premenstrual syndrome and the selected variables at 0.05 level of significance. The study concluded that the prevalence of PMS among females in reproductive age group ranged between mild to moderate level.

Keywords: Premenstrual syndrome, PMS, females in reproductive age group, symptoms of premenstrual syndrome

Introduction

Adolescent girls constitute 1/5th of the female population in the world[2]. Generally this group is considered healthy and has not been given adequate attention in the health programmes. The reason for this is, comparatively low specific mortality in this age group. Menarche is a sign of growth among girls. Girls usually attain their first menstruation at the age of 11-14 years. During these days, the girls may feel tensed or may experience variations in their emotions, water retention in the body, may feel bloated, may experience pain in the abdomen, back or legs that lasts few hours or more. All these symptoms are termed as premenstrual syndrome.

Premenstrual syndrome is a common serious problem characterized by a set of physical, cognitive, affective and behavioural symptoms that occur cyclically during luteal phase of menstrual cycle and resolve quickly with in few days of onset of menstruation. It occurs 7-14 days prior to the onset of menstruation [3].

Epidemiological surveys shows that 80% of women in reproductive age group report some symptoms which are attributed to premenstrual phase of menstrual cycle. Though it affects such a vast majority of women in reproductive age group, the degree of discomfort varies with each individual. About 80% of women report mild degree of distress, 20-40% report moderate degree of distress and in 10% of women, the distress is severe enough resulting in poor quality of life [4].

Females who had high stress before cycles were 25 times more likely to experience physical and psychological symptoms related to PMS. PMS is also found to be related with high suicide and accident rates, poor employment and school attendance, poor academic performance and psychiatric problems, impaired relations with friends, colleagues and family members, poor social life activity and home responsibilities [5]. So, it affects not only women but also families and societies.

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PMS is an issue that every girl and woman has to deal with her life. There is a lack of information on the process of menstruation and the physical and psychological changes associated with this and proper requirements for managing PMS.

Based on the above, the investigator aimed to assess the prevalence of PMS among females in reproductive age group.

Objectives of the study
1. To assess the prevalence of Premenstrual syndrome among the females in reproductive age group.
2. To find the association between the presence of the symptoms of Premenstrual syndrome and the selected variables among the females in reproductive age group.

Research methodology
Research approach: Quantitative research approach was chosen for the study.

Research design: Research was conducted by using a descriptive survey design.

Target population: Females in reproductive age group of 17-24 years were the target population for the present study.

Accessible population: Females between the age group of 17-24 years studying at selected college of nursing were chosen as the accessible population for the present study.

Sample: The sample consisted of 133 females in the age group of 17-24 years.

Sampling technique: The subjects for the present study were selected by using purposive sampling technique.

Setting of the study: The study was conducted in selected college of nursing, chinakakani, Guntur (Dt), Andhra Pradesh.

Tool for data collection: Tools for data collection were developed and used by the researcher.

Tool-A: Questionnaire on selected variables.

Tool-B: Rating scale containing questions on symptoms of premenstrual syndrome.

Tool A consisted of 9 questions on selected variables; Tool B consisted of 47 questions, out of which 24 questions were on physiological symptoms, 13 questions were on behavioural symptoms and 10 questions were on psychological symptoms.

The physiological symptoms included in the tool were: 1. Abdominal bloating; 2. Abdominal pain or cramps; 3. Increased appetite; 4. Food cravings; 5. Nausea or vomiting; 6. Breast tenderness; 7. Breast swelling; 8. Heaviness in the breast; 9. Lower abdominal discomfort; 10. Lower abdominal pain; 11. Palpitations; 12. Generalized aches or pains; 13. Muscle pain; 14. Joint pains; 15. Rashes; 16. Pimples; 17. Breathlessness; 18. Running nose; 19. Headache; 20. Dizziness; 21. Fatigue; 22. Loose motions; 23. Constipation; 24. Weight gain.

Behavioural symptoms like: 1. Irritability or anger; 2. Anxiety; 3. Stress; 4. Mood swings; 5. Loss of concentration; 6. Depression; 7. Forgetfulness; 8. Easy crying; 9. Confusion; 10. Unfriendly behavior; 11. Hopelessness 12. Sleeplessness; 13. Sleeping more time.

Psychological symptoms like: 1. Social withdrawal; 2. Restlessness; 3. Lack of self-control; 4. Feeling of guilty; 5. Unrelaxed; 6. Lack of interest in usual activities; 7. Poor judgment; 8. Impaired work performance; 9. Irrational thoughts; 10. Being over sensitive.

Each question in the rating scale was given 5 options like never, rarely, sometimes, very often and always.

The scoring system was developed to quantify the PMS symptoms experienced by the study group, where the option 'never' was given a score 1, 'rarely' was given a score 2, 'sometimes' was given a score 3, 'very often' was given a score 4 and for 'always' was given a score 5.

It was decided to categorize the study group based on degree of PMS symptoms, they experienced. The groups were with-no symptoms, mild degree of symptoms, moderate degree of symptoms, severe degree of symptoms and very severe degree of symptoms.

According to the scoring system developed the total score of physiological symptoms ranged between 24-120; the score of behavioural symptoms ranged between 13-65, the score of psychological symptoms ranged between 10-50 and total score of all the items ranged between 47-235.

In physiological symptoms, who ever got 1-24 were classified under no symptoms, with score between 25-48 were classified under mild symptoms, 49-72 were classified under moderate symptoms, 73-96 were classified under severe symptoms and 97-120 were classified under very severe symptoms.

In case of behavioural symptoms, who ever got 1-13 were classified under no symptoms, 14-26 were classified under mild symptoms, 27-39 were classified under moderate symptoms, 40-52 were classified under severe symptoms and 53-65 were classified under very severe symptoms.

When it comes to psychological symptoms, who ever got 1-10 were classified under no symptoms, 11-20 were classified under mild symptoms, 21-30 were classified under moderate symptoms, 31-40 were classified under severe symptoms and 41-50 were classified under very severe symptoms.

With regard to the total score, subjects who -got a score between 1-47 were considered as having No PMS, those who got a score between 48-94 were considered as having Mild PMS, those with a score between 95-141 were considered as having Moderate PMS, those who got a score between 142-188 were considered as having Severe PMS and those who got a score between 189-235 were considered as having Very severe PMS.

Content validity: Content validity was obtained from 4 nursing experts in the field of Obstetrics and Gynaecological nursing and 2 Gynaecologists. The suggested modifications were incorporated in the tool.

Reliability of the tool: Reliability of the tool was measured by using test-retest method, 10 respondents were selected and asked to answer on two separate occasions. Karl person's correlation coefficient 'r' was computed to find out the reliability. The reliability for the items of rating scale was 0.86. The positive correlation value indicated that the tool was reliable.

Collection of data: Data were collected personally by the investigator after obtaining permission from authorities. The data collection was done by administering the tool to the subjects personally by the investigators during June 2018. The collected data were edited, coded, classified and analyzed by using descriptive and inferential statistics.

Results
Section-A: characteristics of study sample
Age: Majority of the females (80 i.e. 60.15%) were in the age group of 19-20 years, followed by 45 females (33.84%) who were in the age group of more than 20 years, 6 (4.51%) were in the age group of 17-18 years and only 2 (1.50%) were in the age group of less than 17 years.

Age at menarche: Out of 133 females, majority of the females (64 i.e. 48.12%) attained menarche between 13-14 years, 36 (27.07%) at 11-12 years, 18 (13.53%) at more than 14 years and 15 (11.28%) attained menarche before 11 years of age.

Pattern of menstrual cycle: One hundred and six females (79.70%) had regular menstrual cycles and 27 (20.30%) had irregular menstrual cycles.

Disturbing changes in mood or body: Majority of the females (101 i.e. 75.93%) were experiencing disturbing changes and only 32 (24.07%) were not experiencing disturbing changes before menstruation.

Duration of PMS: Out of 101 females, who had disturbing changes in mood or body, majority (40 i.e. 39.60%) were suffering with PMS from 1-3 years, 36 (35.64%) were suffering for less than 1 year, 14 (13.86%) were suffering

for more than 6 years and 11 (10.90%) were suffering for 4-6 years.

Nature of PMS: Eighty eight (66.17%) females were experiencing PMS one day before, 39 (29.33%) were experiencing one week before, 4 (3.00%) were experiencing 3 days before and only 2 (1.50%)were experiencing PMS three weeks before their menstruation.

Family history of PMS: Majority of the females (84 i.e. 63.16%) had positive family history of PMS and 49 (36.84%) had no family history of PMS.

Positive family history: Out of 84 females who had positive family history of PMS, 51(60.71%) of them reported that their mothers experienced PMS, 29 (34.53%) said that their sisters had PMS and 4 (4.76%) said that their mothers and sisters both experienced PMS.

Food habits: Out of 133 females, 42 (31.58%) preferred to eat fruits, 32 (24.06%) preferred chicken, 25 (18.80%) preferred coffee, 16 (12.03%) preferred junk foods, 10 (7.51%) preferred vegetables and dhal, 5 (3.76%) preferred sea foods and 3 (2.26%) preferred mutton in their regular diet.

Section-B: Prevalence of PMS symptoms

Table 1: Frequency and percentage distribution of females in reproductive age group based on the prevalence of PMS symptoms, N=133.

S. No	Symptoms of Premenstrual syndrome	No PMS		Mild PMS		Moderate PMS		Severe PMS		Very severe PMS	
		f	%	f	%	f	%	f	%	f	%
1.	Physiological symptoms	-	-	72	54.14	57	42.86	4	3.00	-	-
2.	Behavioural symptoms	-	-	60	45.11	53	39.85	17	12.79	3	2.25
3.	Psychological symptoms	-	-	62	46.62	53	39.85	15	11.28	3	2.25

Physiological symptoms
The above results revealed that 72 (54.14%) females had mild, 57 (42.86%) had moderate and 4 (3.0%) had severe physiological symptoms of PMS.

Behavioural symptoms
The results showed that 60 females (45.11%) had mild, 53 (39.85%) had moderate, 17 (12.79%) had severe and 3 (2.25%) had very severe behavioural symptoms of PMS.

Psychological symptoms
The above results also showed that 62 (46.62%) had mild, 53 (39.85%) had moderate, 15 (11.28%) had severe and 3 (2.25%) had very severe psychological symptoms of PMS.

On the whole, 65 (48.88%) females had mild PMS, 59 (44.36%) females had moderate PMS, 7 (5.26%) females had severe PMS, 1 (0.75%) female had very severe PMS and 1 (0.75%) female had no PMS symptoms.

Table 2: Mean and standard deviation of symptoms of premenstrual syndrome among the females in reproductive age group, N=133.

S. No	Premenstrual syndrome symptoms	Mean	Standard Deviation
1.	Physiological symptoms	49.20	13.13
2.	Behavioural symptoms	28.54	9.77
3.	Psychological symptoms	21.88	7.68
4.	Overall symptoms	99.62	27.31

- The mean score of Physiological Symptoms of Premenstrual Syndrome among the Females in Reproductive Age Group was 49.20 with a standard deviation of 13.13
- The mean score of Behavioural Symptoms of Premenstrual Syndrome among the Females in Reproductive Age Group was 28.54 with a standard deviation of 9.77
- The mean score of Psychological symptoms of Premenstrual Syndrome among the Females in Reproductive Age Group was 21.88 with a standard deviation of 7.68.
- The overall mean score of PMS symptoms among the Females in Reproductive Age Group was 99.62 with a standard deviation of 27.31.
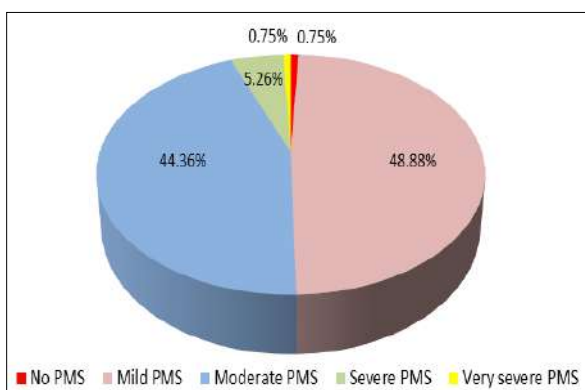
Fig 1: Overall severity of premenstrual syndrome

Table 3: Association between the Prevalence of symptoms of Premenstrual syndrome and their selected variables, N=133.

S. No	Selected variable	Chi-square Value	Degree of freedom
1.	Age	12.19[NS]	12
2.	Age at menarche	8.13[NS]	12
3.	Pattern of menstrual cycle	2.48[NS]	4
4.	Duration of PMS	18.25[NS]	16
5.	Nature of PMS	5.98[NS]	12
6.	Family history	5.76[NS]	4
7.	Food habits	14.15[NS]	24

Note: NS denotes not significant at 0.05 level of significance.

The calculated Chi-Square values between the prevalence of PMS and their age (Σ^2 =12.19), age at menarche (Σ^2 =8.13), pattern of menstrual cycle (Σ^2 =2.48), duration of PMS (Σ^2 =18.25), nature of PMS (Σ^2 =5.98), family history (Σ^2 =5.76) and food habits (Σ^2 =14.15) were not significant at 0.05 level of significance. This clearly shows that there was no significant association between the prevalence of premenstrual syndrome and the selected variables among the females in the study group.

Discussion
The present study was conducted with an aim to assess the prevalence of premenstrual syndrome among the females in reproductive age group. The results revealed that majority of the females (80 i.e. 60.15%) were in the age group of 19-20 years and 64 (48.12%) females attained menarche at the age of 13-14 years. This is supported by the study conducted by Lilin Turlina *et al*. which revealed that majority of the females (24 i.e., 80.00%) were in the age group of 19-20 years and 17 (57.00%) females attained menarche at the age of 12-13 years.
In the present study, with regard to the pattern of menstrual cycle, majority of the females (106 i.e. 79.70%) had regular menstrual cycles. Contrary to this, the study conducted by Ranjana Mandal *et al*. revealed that majority of the females (254 i.e. 91.4%) had irregular menstrual cycles.
Regarding duration of PMS, majority of the females (40 i.e. 39.60%) had suffered with PMS from 1-3 years. Similar to this, the study conducted by Chintan Madhusudan Raval *et al*., revealed that majority of the females (164 i.e. 33.5%) suffered with PMS from 2.6 ± 2.2 years.
In the current study, with regard to nature of PMS, majority of the females (88 i.e. 66.17%) experienced PMS one day before their menstruation. Contrary to this, a study conducted by Navdeep Kaur *et al*. revealed that, majority of the females experienced PMS 5 days before their menstruation.
With regard to family history of PMS; majority of the females (84 i.e. 63.16%) had family history of PMS. Similar to this, a study conducted by Magdy Hassan Balaha *et al*., revealed that majority of the females (59 i.e. 66.3%) had family history of PMS.
In the present study, the mother of majority of females (51 i.e. 60.71%) had experienced PMS. Similar to this, a study conducted by Nulufer Erbil *et al*. revealed that more than half (57.7%) of the mothers of the females (study subjects) had suffered with PMS.

Conclusions
Based on the results of the study it was concluded that
1. Majority of the females were in the age group of 19-20 years.
2. Attained menarche between 13-14 years.
3. Had regular menstrual cycles.
4. Had a family history of PMS.
5. Every female in the study group has experienced some or the other symptoms of PMS.
6. The degree of PMS symptoms experienced by the females in the study group was mild to moderate.
7. Severe degree PMS was experienced by very less number of females in the study group.
8. There was no significant association between the prevalence of PMS and the selected variables

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