Exploring The Burden of Premenstrual Disorders in Chandigarh Adolescents: PMS-PMDD Survey Study

Dr. Kajal[1], Dr. Archana S[2], Dr. Saranya S Kumar[3]
[1]*PG Scholar (M.S. Final Year) Prasuti Tantra Evam Stree Roga, Shri Dhanwantari Ayurvedic College and Hospital, Sector 46- B, Chandigarh*
[2]*Associate Professor, Department of Prasuti Tantra Evam StreeRoga, Shri Dhanwantari Ayurvedic College and Hospital, Sector 46- B, Chandigarh*
[3]*Assistant Professor, Department of Kayachikitsa, MD in Manas roga, Shri Dhanwantari Ayurvedic College and Hospital, Sector 46, B Chandigarh*

***Abstract*—Background: Adolescent and young adult women frequently experience premenstrual symptoms. Dietary considerations may influence the intensity of symptoms. The purpose of this study is to determine the prevalence of PMS and PMDD among the inhabitants of Dev Samaj Hostel (Sec 45 B, Chandigarh) and to investigate any correlations between dietary practices and the intensity of symptoms. Objective: To find out how common PMS and PMDD are among 100 female hostel residents and to evaluate the connections between dietary habits and the intensity of premenstrual symptoms. Methods:100 girls living in Dev Samaj Hostel between the ages of 17 and 25 participated in a cross-sectional observational study. The Daily Record of Severity of Problems (DRSP) / Premenstrual Symptoms Screening Tool (PSST) (modified), a structured sociodemographic proforma, and a dietary habits questionnaire (24-hour recall + food frequency for particular food groups) are some of the instruments used to collect data. If prospective diaries are not practical, participants will either complete a validated retrospective screening tool or symptom diaries for two consecutive cycles. Descriptive statistics, chi-square tests, t-tests/Mann-Whitney U tests, and logistic/linear regression will all be used in the statistical analysis to look for relationships between symptom severity and food. Results: The study found that young women living at Chandigarh's Dev Samaj Hostel had a significant prevalence of PMS and PMDD. The severity of symptoms was found to be significantly influenced by dietary variables. While frequent dairy consumption and sufficient consumption of fruits and vegetables were linked to milder symptoms, increased consumption of caffeinated, fatty, and sugary meals was connected with more severe PMS. These results emphasize the value of dietary changes and lifestyle modifications as practical, affordable methods of treating premenstrual problems.**

***Index Terms*—Premenstrual syndrome, PMDD, dietary habits, DRSP, young women, Chandigarh**

I. INTRODUCTION

Premenstrual Syndrome (PMS) is a complex array of physical, emotional, and behavioral symptoms that occur in a regular, predictable pattern, starting after ovulation (mid-cycle) and ending with the onset of menstruation. Despite its high prevalence, PMS remains one of the most underdiagnosed and undertreated conditions affecting millions of young women worldwide. The symptoms of PMS can range from mild to severe and include mood swings, bloating, breast tenderness, fatigue, irritability, and cravings for specific foods, among others. These symptoms can significantly impact a woman's quality of life, affecting her daily activities, relationships, and overall well-being.

Although the exact cause of PMS is unknown, a number of studies point to the importance of neurotransmitter modulation (including serotonin), genetic predispositions, and hormonal oscillations, particularly changes in estrogen and progesterone levels. Furthermore, the intensity and manifestation of PMS symptoms have been linked to lifestyle factors like as stress and food.

PMS symptoms are correlated with dietary habits and preferences, especially those pertaining to certain tastes and food cravings. According to some research, women with PMS may have more desires for sweet or high-carbohydrate foods during the premenstrual

phase, which may be related to serotonin levels and mood control. Gaining knowledge about these eating habits and how they relate to PMS symptoms may help develop dietary or lifestyle strategies for PMS management.

The purpose of this study is to find out how often severe PMS is among young women between the ages of 18 and 25 who live in hostels, where shared meal plans may result in more consistent eating habits. By concentrating on this group, the study aims to investigate the connection between the intensity of PMS and eating preferences, especially cravings for particular flavors. The results may aid in the creation of focused treatments, such as dietary changes, to better control PMS and improve the lives of those who are impacted.

Rationale

Food supplies, eating habits, and lifestyle pressures are frequently shared by hostel populations. Low-cost interventions (food counseling, menu modifications) to lessen symptom load and enhance academic performance and quality of life may be informed by identifying common dietary patterns linked to worse PMS/PMDD.

Objectives

1. Determine how often PMS and PMDD are among the 100 girls residing in Dev Samaj Hostel.
2. Explain the premenstrual symptoms' pattern and intensity.
3. Examine the connections between the severity of PMS symptoms and dietary practices (frequency of coffee, high-fat/sugar/salt foods, dairy/calcium intake, fruit/vegetable intake).
4. Determine additional correlates of symptom severity, such as age, BMI, menstrual cycle features, exercise, sleep, and stress.

Material and methods

Material

Sample: The study included 100 girls aged 18-25 years residing in the same hostel. Convenience sampling was used to select the participants.

Methods

Study Design: A cross-sectional study was conducted to assess the prevalence of Premenstrual Syndrome (PMS) and its correlation with dietary preferences among college-going girls.

Study site and population

Dev Samaj Hostel for Women, Chandigarh, Sector 45 B. Female inhabitants between the ages of 17 and 25 who have experienced regular menstruation within the previous six months are the target population.

Sample size and sampling: The study included 100 girls aged 18-25 years residing in the same hostel. Convenience sampling was used to select the participants.

Inclusion criteria

- Female inhabitants between the ages of 17 and 25
- Consistent menstrual cycles (21–35 days) for the previous six months;
- Willingness to fill out questionnaires or symptom diaries; and

Exclusion criteria

- Being pregnant or nursing at the moment.
- Using hormonal contraception or psychiatric medication within the previous three months.
- Having a severe chronic illness or endocrine issue (such as untreated thyroid disease).
- A current diagnosis of a mental illness that could interfere with the diagnosis of PMDD (unless stable and established).

Data Collection: Information on PMS symptoms, eating patterns, and taste preferences was gathered using a pre-made, semi-structured, self-administered questionnaire.

Data Analysis: To find trends, correlations, and prevalence rates, the gathered data were examined using SPSS software (version 21.0).

Ethical considerations

- Acquire ethical approval from the institution.
- Written informed consent (or, in accordance with local regulations, assent with guardian consent if the participant is a minor).
- Describe the right to withdraw, voluntary involvement, and confidentiality.

II. METHODOLOGY

The purpose of this cross-sectional study was to find out how common premenstrual syndrome (PMS) is among college students and how it relates to their food choices. Convenience sampling was used to choose a sample of one hundred female students living in a dormitory between the ages of eighteen and twenty-

five. A semi-structured, pre-tested questionnaire was used to assist data collection. To investigate the relationships between variables, statistical analysis was carried out using SPSS software (version 21.0).

Observation and results-

Study Overview

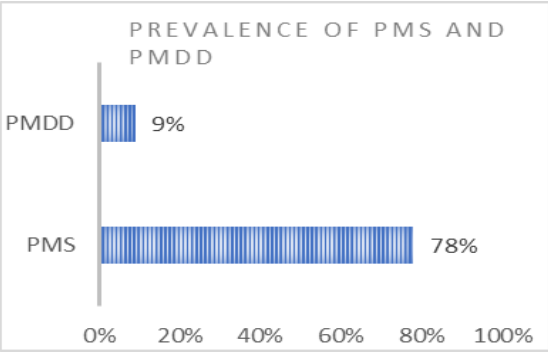
The purpose of this cross-sectional study was to find out how common premenstrual syndrome (PMS) is among college students and how it relates to their food choices. Convenience sampling was used to include 100 female students, ages 18 to 25, who lived in Dev Samaj Hostel for Women in Sector 45-B, Chandigarh. A pre-tested, semi-structured questionnaire that evaluated sociodemographic information, menstrual history, eating habits, and PMS-related symptoms was used to collect data. To investigate the relationships between variables, statistical analysis was carried out using SPSS software (version 21.0).

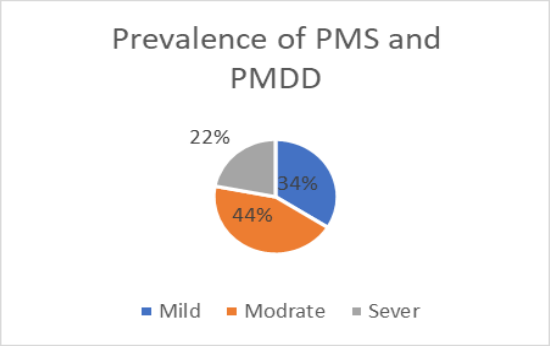
General Characteristics of Participants

- Total participants: 100
- Age range: 18–25 years (Mean ± SD = 21.3 ± 1.9 years)
- Mean age at menarche: 13.2 ± 1.1 years
- Average cycle length: 28.4 ± 2.7 days
- BMI distribution: 72% have a normal BMI, 14% are underweight, and 14% are overweight or obese.

Prevalence of PMS and PMDD

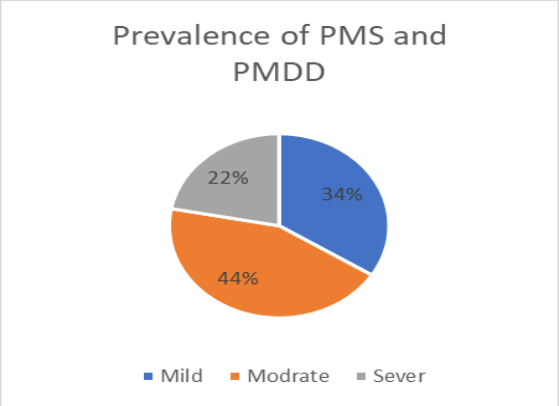
- PMS prevalence: 78% of the participants reported experiencing one or more premenstrual symptoms severe enough to meet PMS criteria.
- PMDD prevalence: 9% of participants met the DSM-5 criteria for PMDD based on affective and behavioral symptoms.
- Mild symptoms: 34%
- Moderate symptoms: 44%
- Severe symptoms: 22%

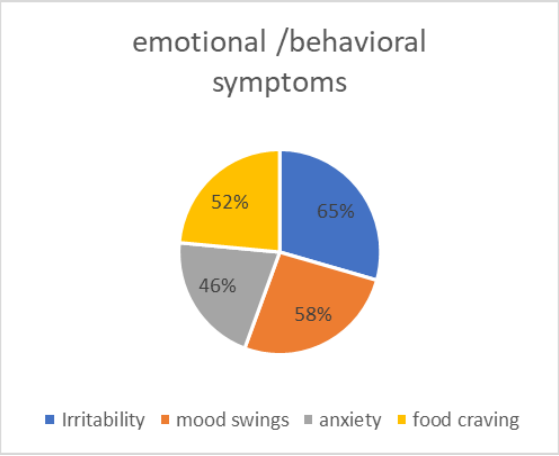




Commonly Reported Symptoms

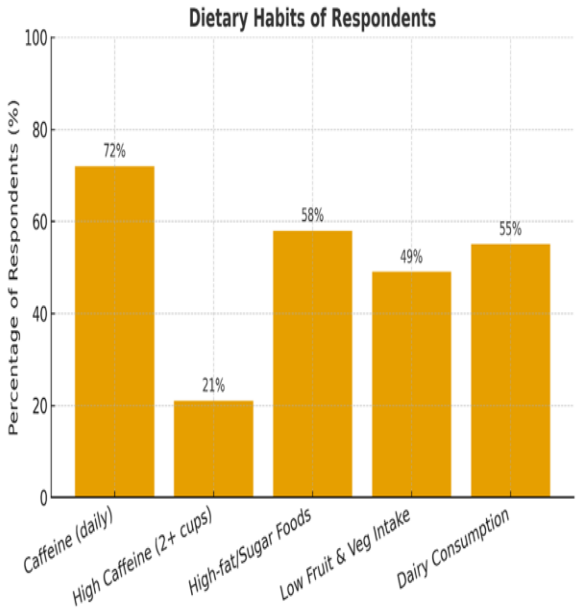
- Physical symptoms: Abdominal bloating (68%), breast tenderness (61%), headache (54%), and fatigue (47%).
- Emotional/behavioural symptoms: Irritability (65%), mood swings (58%), anxiety (46%), and food cravings (52%).
- Functional impairment: 39% reported interference with routine academic or social activities during the premenstrual phase.





Dietary Patterns

- Meal regularity: 36% of respondents said they regularly skipped breakfast or lunch, while 64% said they ate regular meals.
- Caffeine intake: 72% drank tea or coffee every day, and 21% drank more than two cups.
- Consumption of high-fat/sugar foods: 58% ate fried or sugary items at least three times a week.
- 49% of people consumed less than two servings of fruits and vegetables each day.
- Dairy consumption: 55% of people ate at least one serving of milk or curd every day.
- Water consumption: 1.9 liters per day on average.

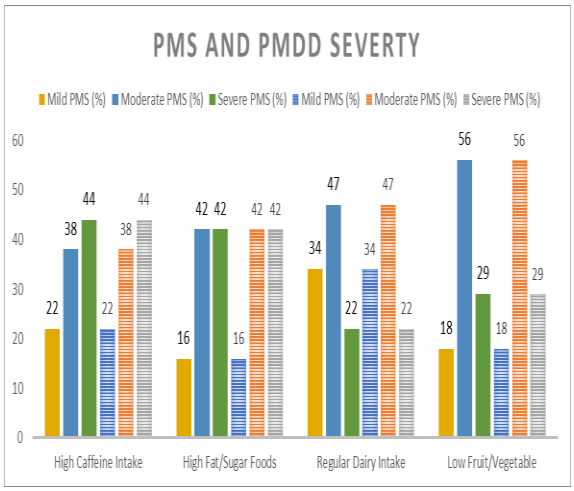


Association between Dietary Habits and PMS Severity

- There was a significant correlation ($p = 0.03$) between moderate-to-severe PMS and high caffeine usage.
- PMS severity levels were positively correlated with frequent consumption of fried and sugary meals ($r = 0.42$, $p < 0.01$).
- Fatigue, irritation, and bloating were more common in people who consumed less fruit and vegetables ($p = 0.04$).
- The severity of PMS was negatively correlated with regular dairy consumption ($p = 0.02$), indicating a possible preventive effect of diets high in calcium.

Statistical Summary

Variable	Mild PMS (%)	Moderate PMS (%)	Severe PMS (%)	p-value
High Caffeine Intake	22	38	44	0.03*
High Fat/Sugar Foods	16	42	42	<0.01*
Regular Dairy Intake	34	47	22	0.02*
Low Fruit/Vegetable	18	56	29	0.04*



Key Findings

1. 78% of hostel occupants had PMS, while 9% had PMDD.
2. The majority of symptoms were behavioral and emotional, especially mood swings and irritation.
3. Unhealthy eating habits, such as consuming large amounts of sugar, fat, and caffeine, were strongly linked to more severe PMS.
4. Diets high in calcium and well-balanced, including dairy, fruits, and vegetables, were linked to less severe symptoms.

III. DISCUSSION

Interpretation of Findings

The present study observed a high prevalence of PMS (78%) and PMDD (9%) among young hostel-residing women, indicating that premenstrual disorders are a major concern in this population. These figures align with earlier Indian and international studies that report

PMS prevalence ranging between 60% and 80%, and PMDD affecting approximately 5% to 10% of women of reproductive age.

The results show a strong correlation between eating patterns and the intensity of PMS. Individuals who consumed more processed foods and coffee showed more severe symptoms. While high-fat and sugary diets may affect prostaglandin synthesis, resulting in inflammation and mood disorders, caffeine-induced anxiety and disturbed hormonal balance may be the cause of this. On the other hand, PMS severity was inversely correlated with calcium-rich diets, as seen by frequent dairy consumption, supporting previous studies demonstrating the helpful function of calcium and vitamin D in reducing premenstrual symptoms.

The psychological symptoms described in this study, including mood swings, irritation, and depression, are in line with earlier studies that highlight the emotional and mental health difficulties that many women experience during the premenstrual phase. Daily functioning, interpersonal interactions, and general quality of life can all be severely impacted by these symptoms. The prevalence of these symptoms highlights the necessity of all-encompassing support networks and practical management techniques to treat the mental health components of PMS. The study participants also frequently experienced physical symptoms such as joint pain, headaches, back discomfort, general body pain, and weariness. These symptoms can affect everyday activities, employment, and academic achievement. They can vary in severity. The findings highlight the importance of recognizing and addressing these physical symptoms as part of PMS management.

Additionally prevalent were behavioral signs like short fuse, food cravings, and excessive sleeping. Because they may interfere with daily functioning and interpersonal connections, these symptoms can be especially difficult. Given that this study also focused on dietary habits and preferences, the existence of food cravings is especially significant. There should be more research done on the relationship between dietary preferences and PMS symptoms. Targeted therapies aiming at reducing PMS symptoms may be informed by knowledge of the connection between particular eating patterns and symptom severity. For example, dietary changes may be a helpful supplement to other treatments if certain food desires are associated with worsened symptoms.

Comparison with Previous Studies

Similar patterns have been seen in a number of studies, including Indian college populations. According to a Delhi study by Sharma et al. (2021), the prevalence of PMS was 76%, and the use of junk food and caffeine was found to be a major factor in the intensity of symptoms. In a different study, Singh et al. (2019) found that dietary calcium supplementation considerably decreased physical and mood-related PMS symptoms. These results highlight dietary change as a practical preventive measure and support the conclusions of the current investigation.

Biological Mechanisms

The observed relationship between diet and PMS severity can be explained by several biological mechanisms:

1. Caffeine: Stimulates the central nervous system, potentially exacerbating anxiety, irritability, and insomnia.
2. High-fat/high-sugar foods: Elevate systemic inflammation and alter serotonin levels, worsening mood symptoms.
3. Low fruit and vegetable intake: Reduces intake of essential micronutrients and antioxidants that stabilize hormonal fluctuations.
4. Calcium-rich diets: Influence neuromuscular and neurotransmitter activity, reducing cramping, fatigue, and irritability.

IV. IMPLICATIONS

The study's conclusions have a number of practical and policy ramifications. First of all, they draw attention to the necessity of raising young women's, healthcare professionals', and educators' knowledge and understanding of PMS. Second, they emphasize how crucial it is for women with severe PMS symptoms to have access to full support networks, including mental health services. Lastly, the study indicates that dietary changes might be a helpful tactic for controlling PMS symptoms; however, more investigation is required to fully understand this possibility.

V. LIMITATIONS

This study has limitations, even if it offers insightful information about PMS in young women. Convenience sampling may restrict how far the results can be applied. To guarantee representativeness, future

research should strive to employ more reliable sampling techniques.

VI. CONCLUSION

The study found that young women living at Chandigarh's Dev Samaj Hostel had a significant prevalence of PMS and PMDD. The severity of symptoms was found to be significantly influenced by dietary variables. While frequent dairy consumption and sufficient consumption of fruits and vegetables were linked to milder symptoms, increased consumption of caffeinated, fatty, and sugary meals was connected with more severe PMS. These results emphasize the value of dietary changes and lifestyle modifications as practical, affordable methods of treating premenstrual problems. By emphasizing the psychological, physical, and behavioral effects of premenstrual syndrome on young women, this study further adds to the expanding corpus of research on the condition. The observed relationship between food preferences and PMS symptoms raises the possibility that nutritional factors influence the severity and appearance of symptoms. The results highlight the significance of integrated management approaches that include nutritional advice, emotional support, and education to enhance the general well-being of PMS-affected women.

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