



A Study Of The Prevalence Of Premenstrual Syndrome And Pre-Menstrual Dysphoric Disorder In Female Undergraduate Medical Students And Its Association With Lifestyle Factors In A Medical College In Guwahati City

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Abstract

Background:

Premenstrual syndrome and premenstrual dysphoric disorder are the most common symptoms of menstrual disorders in majority of the females in the reproductive age group. The current study aims at highlighting the prevalence of PMS and PMDD in a medical college in Guwahati city.

Method:

It was a questionnaire-based study conducted on the undergraduate female medical students of Gauhati Medical College and Hospital in Guwahati. Stratified sampling method was employed with which a total of 196 students are taken up as the total sample size. Data analysis was done using MS Excel and SPSS V24.

Results:

The total response on the questionnaire was 100%. The prevalence of PMS and PMDD were 85% and 27% respectively. Statistical significance was obtained on the association of Exercise with PMS ($p < 0.05$) and Maternal Menstrual History with PMDD ($p < 0.05$).

Conclusion:

A healthy lifestyle coupled with physical exercise has a positive impact on managing PMS and PMDD. The contributions of non-pharmacological interventions viz., Yoga, stress management, aerobic exercise, etc should be noted and followed in practice.

Keywords: PMS, PMDD, Stratified, Exercise, Healthy, Association

Introduction

Premenstrual syndrome (PMS) refers to psychiatric and somatic symptoms that occurs in the late luteal phase of menstruation. Premenstrual dysphoric disorder (PMDD) is primarily a psychiatric disorder with more severe symptoms as compared to PMS.¹

PMS is one of the most common menstrual disorders affecting many women. According to a survey, prevalence of PMS in India is 74.4% while in Pakistan and Jordan, it is 80% and 92% respectively.²

The exact cause of PMS is unknown however it has been found to be associated with various psychological, socio-demographic, dietary and lifestyle factors apart from mother's history.^{3,4}

The diagnostic criteria for PMS according to the American College of Obstetrics and Gynaecology (ACOG) is that at least 1 affective (angry outburst, depression, anxiety, confusion, irritability and social withdrawal) and somatic (abdominal bloating, headache, breast tenderness, swelling of extremities)

symptom must be experienced 5 days before the onset of menses for 3 menstrual cycles in a row and ends within 4 days after the onset of menses.⁵

Aim And Objectives:

The aim of the study was to evaluate the prevalence of PMS and PMDD in undergraduate students in a medical college in Guwahati city.

The objectives were to find the association of the following:

1. Body mass index (BMI) and PMS
2. BMI and PMDD
3. Exercise activity and PMS
4. Exercise activity and PMDD
5. Maternal menstrual history and PMS
6. Maternal menstrual history and PMDD

Methodology:

Study Design:

It was a questionnaire-based study conducted on 196 female undergraduate medical students by using Premenstrual symptoms screening tool (PSST).⁶

Study Setting:

It was conducted inside the lecture hall of Gauhati Medical College and Hospital, Guwahati.

Study Duration:

The study was completed within a period of 30 days.

Study Population:

1st year female undergraduate medical students.

Inclusion Criteria:

1st year female undergraduate medical students who were present and consented to participate in the study.

Exclusion Criteria:

1st year female undergraduate medical students who were absent on the day of distributing the

questionnaire and those with any pathological conditions viz., PCOS, Ovarian cyst, Fibroid Uterus, Irregular menstrual cycle etc.

Sampling Method And Sample Size:

Stratified sampling method was employed for this study. 196 1st year female medical students were accounted for as the total sample size.

Data Collection Procedure:

Pre-tested questionnaire was distributed to the 1st year female undergraduate medical students in the beginning of a lecture class on a stipulated date and time. The questionnaire was explained and verbal consent was obtained. Accordingly, those who consented were given the pre-tested questionnaire and a time of 10 minutes was given for responding to the questionnaire.

Data Analysis:

Data was entered in MS Excel for cleansing and transferred to SPSS V24 for analysis. Mean, SD and percentages was used for descriptive statistics. Chi-square test was used for inferential statistics taking $p < 0.05$ to be statistically significant.

Reliability Of The Study:

This study can be reproduced easily in a different study population as assessment for prevalence of PMS and PMDD in other settings. However, the results are not expected to be similar.

Ethical Considerations:

The respondents remain anonymous and confidential. Ethical approval was approved from the Institutional Ethics Committee, Gauhati Medical College and Hospital, Guwahati vide order no. 190/2007/Pt.11/August 2023/1.

Results:

The prevalence of PMS and PMDD was found to be 85% and 27% respectively as depicted below on Fig.1 and Fig.2

Fig.1: Prevalence of PMS among undergraduate medical students.

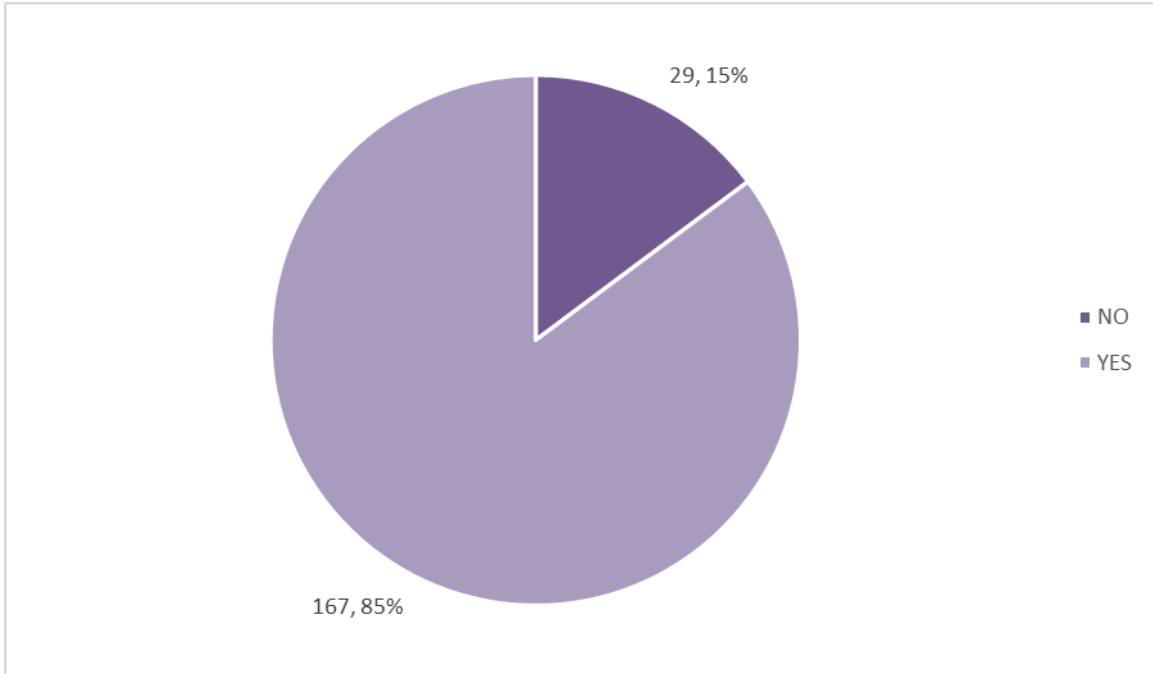
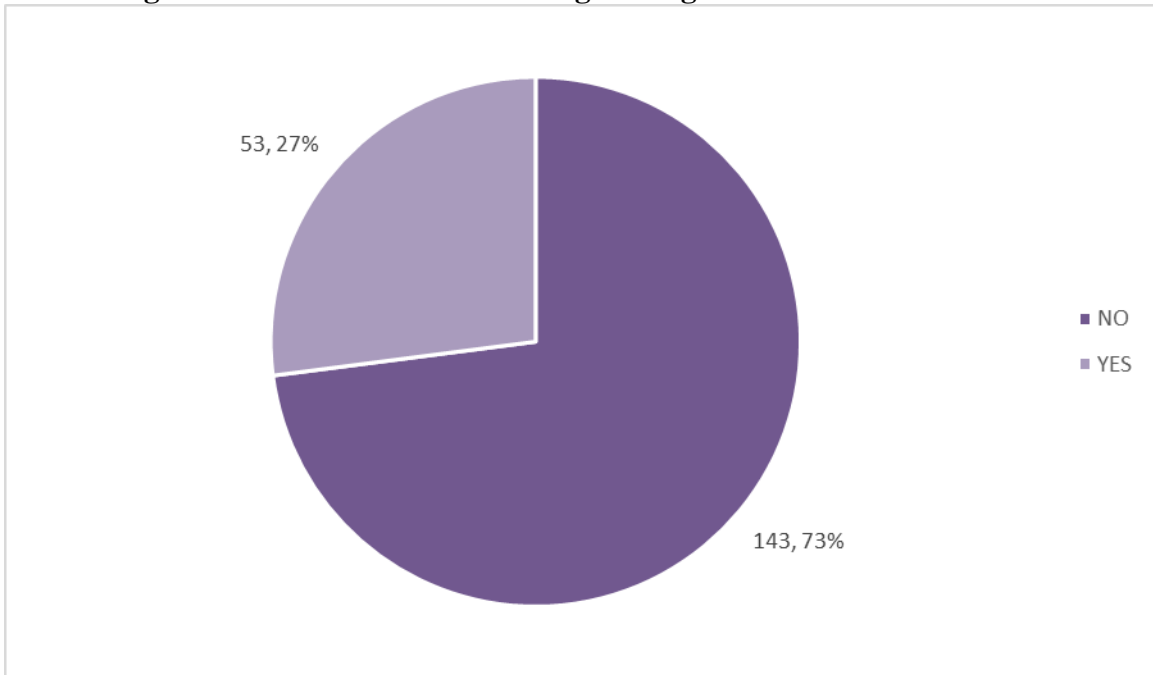


Fig.2: Prevalence of PMDD among undergraduate medical students.



The association between exercise activity and PMDD was found to be statistically significant ($p < 0.05$). Also, maternal menstrual history was seen to be associated with PMDD ($p < 0.05$).

The various observations are depicted below in tables 1-6:

Table-1: Association of BMI and PMS among undergraduate medical students.

BMI	PMS	X^2	p-value
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	No	Yes		
Underweight	9	16	0.3	0.96
Normal weight	10	54		
Over weight	12	39		
At risk	7	49		
Total	38	158		

Table-2: Association of BMI and PMDD among undergraduate medical students.

BMI	PMDD		X ²	p-value
	No	Yes		
Underweight	22	9	2.5	0.47
Normal weight	47	17		
Over weight	33	12		
At risk	37	19		
Total	139	57		

Table-3: Association of exercise activity and PMS among undergraduate medical students.

EXERCISE ACTIVITY	PMS		X ²	p-value
	No	Yes		
No	23	155	5.4	0.02
Yes	6	12		
Total	29	167		

Table-4: Association of exercise activity and PMDD among undergraduate medical students.

EXERCISE ACTIVITY	PMDD		X ²	p-value
	No	Yes		
No	125	53	7.3	0.007
Yes	18	0		
Total	143	53		

Table-5: Association of maternal menstrual history and PMS among undergraduate medical students.

MATERNAL	PMS	X ²	p-value
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MENSTRUAL HISTORY	No	Yes		
No	23	119	2.1	0.349
Yes	6	48		
Total	29	167		

Table-6: Association of maternal menstrual history and PMDD among undergraduate medical students.

MATERNAL MENSTRUAL HISTORY	PMDD		X ²	p-value
	No	Yes		
No	95	47	13.6	0.001
Yes	48	6		
Total	143	53		

Discussion:

PMS even though a natural phenomenon associated with majority of females in their reproductive age group, the awareness as such is still limited. Some tend to ignore the psychological and physiological changes that happens with PMS thereby hindering their personal life on one hand and professional life on the other. In our study, the prevalence of PMS was found to be 85% which is consistent with previous findings of Upadhyay M et al¹ and Bhuvaneshwari K et al.⁷ Again, PMDD which is a severe form of PMS was observed to be 27% which was also similar to observations conducted by HJJha RK et al⁶, Jain R et al⁸ and Mishra A et al.⁹ Daily physical activity is essential for a healthy life to manage the metabolic demands as per the demanding work life scenario of this present world and on testing the association between exercise and PMDD, it was found to be statistically significant ($p < 0.05$) which too was consistent with previous findings of Bhuvaneshwari et al⁷ and Mishra A et al.⁹ It has been both postulated and generalised that maternal history is very much relevant to a woman's physiological behaviours and patterns following which association of maternal menstrual history and PMDD was tested. It was found that this association was closely related to each other as statistically significance ($p < 0.05$) was generated in this study.

It can thus be stated that PMS and PMDD is highly prevalent among medical students and this finding can be generalised to the populations both in urban and rural areas. Knowing these facts, need of more non-pharmacological and pharmacological interventions arise in the long run.

Limitations:

The present study was conducted in a single institution with limited sample size restricted to medical students and the data obtained was specific to this institution.

Conclusion:

The authors conclude with a valid argument that exercise plays a major role in maintaining a healthy lifestyle as observed in this study. The present findings confirm that PMS and PMDD are associated with lifestyle factors. This provides a good starting point for discussion and further research. Hence, further prospective studies are essential to explore more aspects regarding PMS and PMDD on a larger scale.

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