Original Article

A Cross-Sectional Interventional Study to Gauge the Prevalence of Pre-Menstrual Syndrome and Pre-Menstrual Dysphoric Disorder Among Female Students

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ABSTRACT

Objective: Premenstrual Syndrome and Premenstrual Dysphoric Disorder are significant health concerns among women of reproductive age, particularly female students, affecting their academic performance, mental health, and daily functioning.

Methodology: This cross-sectional interventional study aimed to assess the prevalence of PMS and PMDD among female students at Arulmigu Kalasalingam College of Pharmacy and Kalasalingam University. A total of 270 participants aged 18-25 years with normal menstrual cycles were enrolled. The Premenstrual Symptoms Screening Tool (PSST) was utilized for data collection, and statistical analysis was performed using SPSS version 26.

Results: The study found that 10.37% of participants had PMS, while 19.26% met the criteria for PMDD. The prevalence was higher among technical course students (12.69% for PMS and 26.98% for PMDD) compared to medical course students (8.33% for PMS and 12.5% for PMDD). The study also examined contributing factors such as stress levels, lifestyle choices, and menstrual characteristics. Post-intervention analysis indicated a significant increase in knowledge regarding PMS and PMDD symptoms, with the most notable improvement in understanding emotional symptoms ($p < 0.001$, Cohen's $d = 1.682$).

Conclusion: These findings highlight the need for increased awareness and education about PMS and PMDD, especially in academic settings. Institutions should implement support programs, counseling, and awareness campaigns to mitigate the impact of these disorders on students. Future research should focus on long-term assessments and broader demographic studies to better understand the prevalence and risk factors associated with PMS and PMDD.

Keywords: PMS, PMDD, Menstrual health, Pre-menstrual symptoms, educational intervention.

INTRODUCTION

Pre-menstrual Syndrome refers to a combination of physical, emotional, and behavioral symptoms that appear during the luteal phase of the menstrual cycle and resolve with the start of menstruation. It is characterized by mild to moderate symptoms that do not significantly impair daily functioning[1]. PMDD is a more severe form of PMS, classified as a depressive disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Physical symptoms similar to PMS, such as fatigue, bloating, and breast tenderness, also occur. These symptoms typically begin in the luteal phase and significantly impair social, occupational, or interpersonal functioning[2]. PMS affects an estimated 20-40% of women worldwide. The prevalence varies depending on the population studied and the criteria used for diagnosis[3]. Pre-menstrual Dysphoric Disorder is less common, affecting around 3-8% of women of reproductive age globally[4].

Premenstrual Syndrome (PMS) and Premenstrual Dysphoric Disorder (PMDD) are two prevalent yet often misunderstood conditions affecting individuals assigned female at birth. The need for extensive study in these areas is paramount due to their significant impact on physical, emotional, and social well-being. Here, we delineate the critical aspects justifying comprehensive research endeavors in understanding PMS and PMDD.

This study predominantly stepped into exploring the comparative prevalence PMS and PMDD within the college student population and examining contributing elements encompassing stress levels, lifestyle choices, and menstrual characteristics linked to the prevalence of Pre-menstrual syndrome and Pre-menstrual Dysphoric Disorder.

METHODOLOGY

A cross-sectional interventional study aimed to assess the prevalence of PMS and PMDD among female students at Arulmigu Kalasalingam College of Pharmacy and Kalasalingam University. A total of 270 participants aged 18-25 years with regular menstrual cycles were enrolled. A standard questionnaire was used to collect data from the participants and it is included in the supplementary material. The collected data were analysed through SPSS version 26 and paired t-test was used to find significance in knowledge improvement.

RESULTS

Out of 270 participants enrolled in the study, 139 participants were from the technical course and 131

participants were from the medical course. The data is represented in Table 1.

Table 1: Distribution of participants by department

Department	Frequency N=270	Percentage
Medical course	131	48.5%
Technical course	139	51.5%
Mean ± SD	1.5148 ±0.50071	

The prevalence of PMS and PMDD among participants from both medical and technical courses was presented in Tables 2 and Table 3.

This study aimed to assess changes in knowledge regarding PMS and PMDD among participants before and after an educational intervention. The paired t-test was utilized to evaluate the differences in knowledge across ten key questions pertaining to PMS and PMDD. The results indicated significant improvements in participants' knowledge of several aspects of PMS and PMDD.

Table 2: Prevalence of PMS in medical and technical courses

PMS in medical and technical course	Frequency	Percentage
Medical course	12	8.33
Technical course	16	12.69

Table 3: Prevalence of PMDD in medical and technical course

PMDD in medical and technical course	Frequency	Percentage
Medical Course	18	12.5
Technical Course	34	26.98

Table 4: Knowledge assessment with pre-test data vs post-test data

Pair	Question Description	Mean Difference	t-value	Df	p-value	Cohen'sd	Interpretation
1	Common emotional symptoms of PMS vs. post-test knowledge	0.711	6.945	269	<0.001	1.682	Significant increase (large effect)
2	Physical symptoms of PMS vs. post-test knowledge	0.344	3.531	269	<0.001	0.215	Significant increase (small effect)
3	Indications of PMS vs. post-test knowledge	0.011	0.111	269	0.912	0.007	No significant difference
4	Changes in sleeping patterns associated with PMS vs. post-test knowledge	0.193	2.849	269	0.005	0.173	Significant increase (small effect)
5	Differentiating between normal fatigue and PMS-related fatigue vs. post-test knowledge	0.319	3.44	269	0.001	0.209	Significant increase (small effect)
6	Distinguishing PMDD from regular PMS vs. post-test knowledge	0.356	3.472	269	0.001	0.211	Significant increase (small effect)
7	Psychological symptoms associated with PMDD vs. post-test knowledge	0.352	3.785	269	<0.001	0.23	Significant increase (small effect)
8	PMDD symptoms interference with daily functioning vs. post-test knowledge	0.378	3.535	269	<0.001	0.215	Significant increase (small effect)
9	PMDD suicidal thoughts vs. post-test knowledge	-0.174	-2.661	269	0.008	-0.162	Significant decrease
10	Supporting a friend experiencing PMDD symptoms vs. post-test knowledge	-0.159	-1.604	269	0.11	-0.098	No significant difference

These findings suggest that the educational intervention was successful in enhancing participants' knowledge about various aspects of Pre-menstrual syndrome and Pre-menstrual Dysphoric Disorder. This study provides the patterns of awareness among students experiencing the distressing symptoms of PMS and PMDD.

DISCUSSION

PMS and PMDD significantly impact college girls, creating unique challenges that can hinder academic success and social interactions. The array of symptoms, including mood swings, fatigue, and concentration difficulties, often disrupt daily life and impede academic performance[5]. For those experiencing PMDD, the emotional turmoil characterized by severe anxiety, irritability, and depression can further complicate relationships and lead to social withdrawal[7]. Despite the high prevalence of these conditions, many college students remain unaware of their existence or misinterpret their symptoms, which may result in misdiagnosis and insufficient treatment, particularly for PMDD, often confused with general depressive disorders[6,8]. Addressing this issue requires college health services to prioritize education and awareness campaigns, enhance diagnostic accuracy, and provide tailored support systems to help students manage their symptoms effectively and thrive both academically and socially.

Limitation

Limitations such as language problems were hindering effective communication during the data collection process potentially affecting accurate diagnosis. Additionally, data collection trouble raised due to exams and class, cultural stigmas, and lack of knowledge. Since this is a short-term study, it is difficult to capture the cyclical nature of PMS and PMDD, hence it is not possible to establish long-term patterns. Overcoming these challenges by developing standardized protocols for data collection, communication, and extended study periods will be essential for advancing research and creating globally applicable policies and treatment strategies[9].

CONCLUSION

Premenstrual Syndrome and Premenstrual Dysphoric Disorder are significant health concerns that disproportionately affect women, particularly those navigating the complex and high-pressure environment of college life[10]. The emotional, cognitive, and physical symptoms associated with these conditions can severely hinder academic performance, social interactions, and overall quality of life[11]. As a result, they pose a barrier to educational attainment and mental health that must be addressed through comprehensive and empathetic support systems[12].

Institutions of higher learning have a unique responsibility to acknowledge and address the impact of PMS and PMDD on their students. By fostering increased awareness, improving diagnostic practices, and implementing accessible treatment options, universities can play a pivotal role in promoting the well-being of affected individuals. This includes integrating mental health services, providing educational resources on menstrual health, and cultivating a campus culture that is supportive of women's health issues.

Ultimately, addressing PMS and PMDD is not only a matter of health equity but also a step towards ensuring that all students have the opportunity to succeed academically. When institutions prioritize education, awareness, and support, they empower students to manage their symptoms effectively, leading to improved academic performance, emotional resilience, and a more inclusive learning environment[13]. In this way, the holistic well-being of students can be safeguarded, benefiting both the individual and the academic community as a whole[14].

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