

## PREVALENCE, PATTERN, AND PREDICTORS OF PREMENSTRUAL SYNDROME AND PREMENSTRUAL DYSPHORIC DISORDER AMONG COLLEGE GIRLS

LISHA GOVIND K V, CHELLAMMA V K

Department of OBG, KMCT Medical College, Kozhikode, Kerala, India. Email: arpitha4ravi@gmail.com

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### ABSTRACT

**Objective:** Premenstrual syndrome (PMS) occurs 7–14 days before the onset of menstruation and subsides with the commencement of menstrual flow, affects women during their reproductive age, and is associated with physical, psychological, and behavioral changes. If the mental symptoms predominate are very severe and are associated with impairment, then the patient is classified as having premenstrual dysphoric disorder (PMDD) which may be viewed as a severe subtype of PMS. This can interfere with the lives of the affected, as well as their interpersonal relationships.

**Methods:** This study was conducted at KMCT medical college from November 2021 to May 2022. An awareness program which was informative and well-interacted was conducted for each batch of students regarding the various aspects of this disorder before screening for this study. Premenstrual symptoms screening tool (PSST) was used to screen students for the presence of disturbing symptoms. They were asked to write down the various ways that they deal with these menacing symptoms in a separate form. Institution ethics committee approval was taken to carry out this study. PSST is the screening tool developed by Steiner *et al.*

**Results:** A total of 318 students from all batches of college took part in this study actively. On screening by PSST, 44 students qualified for PMDD, 89 students met the criteria for PMS, and the remaining 185 had no to mild premenstrual symptoms (Table 1). Among the 89 students in premenstrual symptoms group, most common symptoms reported were anger/irritability –66%, fatigue/lack of energy –45%, and difficulty concentrating –45%. In 44 students who had qualified for PMDD, 84% reported anger/irritability, 81% reported tearful/increased sensitivity, and 75% reported anxiety/tension followed by depressed mood in 73%.

**Conclusion:** PMS and PMDD are prevalent among substantial proportion of college girls with significant negative influence on academic performance, emotional well-being, and behavior. The pattern of premenstrual symptomatology is different between PMS, PMDD, and in overall college students. The predictors of PMS and PMDD are age, education, heavy menstrual flow, dysmenorrhea, and family history of PMS. The knowledge and health seeking behavior of college students toward PMD are quite low. Strategies should be drawn and implemented for timely recognition and management of PMS and PMDD in college girls.

**Keywords:** Premenstrual syndrome, Premenstrual dysphoric disorder, Symptomatology.

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### INTRODUCTION

Premenstrual syndrome (PMS) occurs 7–14 days before the onset of menstruation and subsides with the commencement of menstrual flow, affects women during their reproductive age, and is associated with physical, psychological, and behavioral changes [1]. If the mental symptoms predominate are very severe and are associated with impairment, then the patient is classified as having premenstrual dysphoric disorder (PMDD) which may be viewed as a severe subtype of PMS. This can interfere with the lives of the affected, as well as their interpersonal relationships [2].

While PMS impairs the quality of life and social functioning, the presence of only PMS symptoms is mostly not perceived as either distressing or debilitating; hence, the presence of PMS symptoms is different from a categorical diagnosis of PMS. Premenstrual symptoms are deemed as ranging from mild to moderate in intensity, not particularly debilitating, and not necessarily occurring regularly, while PMS is more severe, involves specific subset of symptoms, occurs relatively regularly, and significantly affects a woman's life [3]

Epidemiological surveys report 80% of women in reproductive age group report some symptoms attributed to premenstrual phase of menstrual cycle. Although 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 distress is

severe enough resulting in poor quality of life [4]. Such severe form of distress is called as PMDD. PMS affects not only women but also families and societies, as it causes functional impairment in productivity at school/work, impaired relations with friends, colleagues and family members, poor social life activities, and home responsibilities [5]. This disorder in young women is a significant public health problem, as increased incidence of depression and anxiety disorders was found in women suffering with PMS, which could economically burden the society indirectly in the form absenteeism at work, frequent hospitalization, and suicides.

### METHODS

#### Study design

This study was a prospective study.

#### Study location

This study was KMCT medical college.

#### Study duration

This study was November 2021 to May 2022.

#### Sample size

This study was 318 students.

This study was conducted at KMCT medical college November 2021 to May 2022. An awareness program which was informative and

well-interacted was conducted for each batch of students regarding the various aspects of this disorder before screening for this study. Premenstrual symptoms screening tool (PSST) was used to screen students for presence of disturbing symptoms. They were asked to write down the various ways that they deal with these menacing symptoms in a separate form. The Institution

Ethics Committee approval was taken to carry out this study. PSST it is the screening tool developed by Steiner *et al.* This screening tool has two sections. The first section which focuses on various premenstrual symptoms has 14 items and their severity grading in terms of not at all, mild, moderate and severe, and the second section measures the severity of disability in various domains such as work efficiency, relationship with friends, family, social life, and home responsibilities in a similar manner of severity grading as in first section. To make a diagnosis of PMS and PMDD, at least one of the 1-4 items, in addition to at least four of 1-14 items in the first section and at least one of the item in second section, should be present in moderate severity and severe form, respectively.

#### Statistical Analysis

The data were compiled in Microsoft Excel and analyzed using the Statistical Package for the Social Sciences 16.0 version for various descriptive statistics.

#### RESULTS

A total of 318 students from all batches of college took part in this study actively. On screening by PSST, 44 students qualified for PMDD, 89 students met the criteria for PMS, and the remaining 185 had no to mild premenstrual symptoms (Table 1). Among the 89 students in premenstrual symptoms group, most common symptoms reported were anger/irritability -66%, fatigue/lack of energy -45%, and difficulty concentrating -45%. In 44 students who had qualified for PMDD, 84% reported anger/irritability, 81% reported tearful/increased sensitivity, and 75% reported anxiety/tension followed by depressed mood in 73% (Table 2).

A total of 150 students reported, at least, one area of impaired functioning. Most frequent functional impairment was in domains of "relationships with friends and classmates" and "school/work efficiency and productivity." It was seen among 25% of the total respondents (Table 3). Out of 318 participants, only 150 students mentioned the various mechanisms by which they handle these symptoms. Sleeping, taking rest, and watching favorite movies/program are most common coping mechanisms used by many participants.

#### DISCUSSION

The sample of this study constitutes young women from a KMCT medical college, majority of them residing in the urban areas and was unmarried. Similar constitution of sample was seen in many studies [6].

The prevalence of PMS was 27.8% and PMDD was 13.8% in our study, which was in line with the study done by Steiner *et al.* and other studies from Asian countries among this population. The above prevalence rates are not in agreement with an Indian study by Raval *et al.*, who reported 14.7% and 3.7%, respectively [7].

Anger/irritability was found to be the most commonly reported symptom in the study group, which has been reported by several other studies. A study by Stout *et al.* also reported "Decreased energy" and "being irritable" as the most common reported premenstrual symptoms in a community-based study. An Indian study by Singh *et al.* also confirms our findings that most common symptoms reported by subjects without any impairment was "irritability" and in those where there was some impairment that the most common symptoms were "tiredness and lack of energy [8]."

The second most common symptom of tearfulness/increased sensitivity was reported by Read *et al.*, study which states that women

**Table 1: Prevalence of PMS and PMDD**

S. No	Symptoms	Prevalence
1	No/Mild PMS	185 (58.3)
2	Moderate-to-severe PMS	89 (27.9)
3	PMDD	44 (13.9)

PMS: Premenstrual syndrome, PMDD: Premenstrual dysphoric disorder

**Table 2: Frequency of premenstrual symptoms among three groups**

Symptoms	No/Mild symptoms n=185 (%)	Moderate symptoms n=89 (%)	Severe symptoms n=44 (%)
Anger/irritability	90 (48.6)	58 (66.1)	37 (84)
Anxiety/tension	54 (28.9)	34 (38.4)	33 (75)
Tearful/increased sensitivity to rejection	41 (22.4)	38 (43.5)	35 (80.6)
Depressed mood/hopelessness	54 (28.9)	31 (35.5)	32 (72.5)
Decreased interest in work activities	75 (40.8)	35 (38.9)	25 (57.9)
Decreased interest in home activities	61 (32.9)	29 (32.7)	20 (44.3)
Decreased interest in social activities	53 (28.6)	29 (32.7)	21 (47.7)
Difficulty concentrating	65 (35.4)	44 (44.6)	23 (52.2)
Fatigue/lack of energy	80 (42.9)	40 (45.1)	22 (48.8)
Overeating/food craving	33 (17.8)	27 (30.5)	16 (36.3)
Insomnia	23 (12.1)	16 (18.6)	12 (27.2)
Hypersomnia	50 (27.2)	30 (33.8)	24 (54.5)
Feeling overwhelmed or out of control	30 (16.4)	13 (14.1)	17 (39.7)
Physical symptoms	75 (40.2)	33 (36.7)	25 (56.8)

**Table 3: Frequency of functional impairment among groups**

Functional impairment domains	No/Mild symptoms n=185 (%)	Moderate symptoms n=89 (%)	Severe symptoms n=44 (%)	p-value
School/work efficiency or productivity	75 (40.2)	19 (21.4)	18 (40)	<0.001
Relationships with friends, classmates/coworkers	43 (26.2)	17 (19.2)	20 (46)	<0.001
Relationships with family	32 (17.2)	12 (12.9)	14 (31.8)	<0.001
Social life activities	41 (22.1)	14 (15.8)	15 (34)	<0.001
Home responsibilities	47 (25.6)	11 (12.4)	10 (22.7)	<0.001

experience increased sensitivity to emotions, or to external stress, during the premenstrual phase of the cycle. Some women report that sensory perception is more acute premenstrually, which can result in environmental stress being experienced as more challenging, and the responsibilities which are a normal part of most women's lives being experienced as more burdensome [9].

Fatigue/lack of energy which was prevalent in the study participants were reported in studies done by Bakhshani *et al.* It was mentioned as third most common symptom in studies by Tabassum *et al.* and Nisar *et al.* Our study was also consistent with the new changes in DSM-5 diagnostic criteria for PMDD, where mood swings and irritability are now at the top of the list as compared to DSM-IV TR, where

markedly depressed mood was in this position. The most frequent functional impairment seen in this study was in the domains of school/work efficiency and productivity and relationship with friends and classmates/co-workers. This study is in agreement with the Steiner *et al.* who reported that three quarters of the PMDD and almost half of the severe PMS cases suffered interference with their relationships with friends, classmates, and/or coworkers, and school/work efficiency/productivity [10].

#### CONCLUSION

PMS and PMDD are prevalent among substantial proportion of college girls with significant negative influence on academic performance, emotional well-being, and behavior. The pattern of premenstrual symptomatology is different between PMS, PMDD and in overall college students. The predictors of PMS and PMDD are age, education, heavy menstrual flow, dysmenorrhea, and family history of PMS. The knowledge and health seeking behavior of college students toward PMDD are quite low. Strategies should be drawn and implemented for timely recognition and management of PMS and PMDD in college girls.

#### AUTHORS CONTRIBUTIONS

Nil.

#### CONFLICTS OF INTEREST

Nil.

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Nil.

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