

A Study to Assess the Prevalence of Premenstrual Syndrome and Premenstrual Dysphoric Disorder and Various Coping Strategies used by Students in A Womens Medical College from South India

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ABSTRACT

Introduction: During their menstrual cycles, many women of reproductive age experience adverse physical, emotional and cognitive symptoms that often recur, usually during the luteal phase of their cycle. The constellation of above symptoms is known as premenstrual syndrome (PMS) if severity of symptoms is moderate to severe and premenstrual dysphoric disorder (PMDD) if severity of symptoms is greater. These symptoms have great potential to interfere with personal, social and occupational functions.

Material and methods: This study was conducted among medical students in a women medical college. An awareness programme was conducted in relation to women mental health issues after which a survey was conducted using the premenstrual symptom screening tool (PSST) to screen students suffering with premenstrual symptoms. They were encouraged to write the various coping mechanisms they use to comfort themselves during this period on a separate paper.

Results: A total of 635 students participated in the study, of which 177 students met the criteria for premenstrual syndrome and 88 students for premenstrual dysphoric disorder. The most common symptoms reported by the participants were anger/irritability, tearful/ increased sensitivity and fatigue/lack of energy. Most common coping mechanism among students were sleeping, taking rest and watching movies.

Conclusion: Sensitizing young medical students in this topic will help them in coping with this disorder in a more effective way and they would translate this knowledge to general public which will indirectly help many women in the society.

Keywords: Premenstrual Syndrome, Premenstrual Dysphoric Disorder, Premenstrual Symptom Screening Tool, Coping

symptoms include difficulty in concentrating, feeling overwhelmed or out of control. Affective symptoms are anger, irritability, anxiety, sad mood, hopelessness and decreased interest in regular activities. Behavioral symptoms of PMS are tearfulness, increased sensitivity to rejection, food cravings, insomnia and hypersomnia. These symptoms appear during the late luteal phase of each menstrual cycle (7 to 14 days prior to menstruation) and resolve quickly with in a few days of onset of menstruation.¹

Epidemiological surveys report 80% of women in reproductive age group report some symptoms 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 distress is severe enough resulting in poor quality of life. Such severe form of distress is called as Premenstrual Dysphoric Disorder (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. This disorder in young women is a significant public health problem, as increased incidence of depression and anxiety disorders were found in women suffering with PMS, which could economically burden the society indirectly in the form absenteeism at work, frequent hospitalization and suicides.²

Etiologies of PMS

It has been reported that etiology of PMS is multifactorial.

INTRODUCTION

During their menstrual cycles, many women of reproductive age experience adverse physical, emotional and cognitive symptoms that often recur, usually during the luteal phase of their cycle. These symptoms have great potential to interfere with personal, social and occupational functions. These changes occurring during adolescence will impact their psychological development and make them vulnerable to more serious psychiatric disorders in the future.

Premenstrual Syndrome (PMS) is the name given to a collection of physical, cognitive, affective and behavioral symptoms that occur cyclically with each menstrual cycle. The physical symptoms which were more common and bothersome are breast tenderness, bloating, weight gain, headaches, fatigue, joint and muscle pains. Cognitive

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Several factors are suggested to be associated with PMS including social factors (ethnicity and culture), socioeconomic status, dietary habits, stress, exercise, smoking, alcohol consumption, and menstrual factors (age at menarche, duration since menarche, and menstrual patterns).³ One of the common etiologies which are suggested about PMS is endocrinal cause. An abnormal function at any level of hypothalamo-pituitary-adrenal axis may lead to PMS. Environmental factors, defective nutrition, and defective adrenal hormone secretion lead to the development of PMS. Stress has an important role in pathophysiology of PMS. Prolong stress exposure can lead to malfunctions of neuroendocrine system and could flare PMS.⁴

Several factors including genetic, environmental, psychological, biological, and social factors are documented to play a role in occurrence of PMS. Genetics plays an important role. Women with a history of PMS in mothers are more likely to report PMS (70%) in comparison to women with negative family history (37%). Moreover, reporting of PMS in monozygotic twins is 93% while in dizygotic twins is 44%.⁵

Coping is defined as a process of investing our conscious efforts to solve our problems both personal and interpersonal, master, minimize or tolerate stress and conflict. Socio-cultural beliefs like menstruation is inauspicious, bad or sinful influence the way women perceive negative appraisals during the vulnerable premenstrual phase of the cycle.⁶ They make internal embodied attributions for negative emotions experienced premenstrually and external attributions for the same emotions at other times in the cycle.⁷ Increased sensitivity to negative emotions and external stress during premenstrual phase of the cycle was observed in studies by Sabin Farrell.⁸ Coping and its varied relations with premenstrual symptom severity, different phases of

menstruation and associations with other psychological characteristics were studied by Kuczmierczyk AR.⁹ Study was done to find the prevalence of pre menstrual syndrome and premenstrual dysphoric disorder and various coping mechanisms used by medical students.

MATERIAL AND METHODS

This study was conducted at Sri Padmavathi medical college for women, a medical college under Sri Venkateswara institute of medical sciences university a tertiary care teaching hospital in south India. An awareness programme, 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 was used to screen students for presence of disturbing symptoms. They were asked to write down the various ways they deal with these menacing symptoms in a separate form. Institution ethics committee approval was taken to carry out this study.

Premenstrual symptoms screening tool (PSST)

It is the screening tool developed by Steiner et al.,¹⁰ 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 like 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 to 4 items, in addition to at least four of 1 to 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 was compiled in Microsoft excel and analysed using SPSS 16.0 version for various descriptive statistics.

RESULTS

A total of 635 students from all batches of MBBS took part

Symptoms	Frequency n=635 (%)
No/mild pms	370 (58.3)
Moderate to severe PMS	177 (27.9)
PMDD	88 (13.9)

Table-1: Prevalence of PMS and PMDD

Symptoms	No/Mild Symptoms N=370 (%)	Moderate Symptoms N=177 (%)	Severe Symptoms N=88 (%)
Anger/irritability	180 (48.6)	117 (66.1)	74 (84)
Anxiety/tension	107 (28.9)	68 (38.4)	66 (75)
Tearful/increased sensitivity to rejection	83 (22.4)	77 (43.5)	71 (80.6)
Depressed mood/hopelessness	107 (28.9)	63 (35.5)	64 (72.7)
Decreased interest in work activities	151 (40.8)	69 (38.9)	51 (57.9)
Decreased interest in home activities	122 (32.9)	58 (32.7)	39 (44.3)
Decreased interest in social activities	106 (28.6)	58 (32.7)	42 (47.7)
Difficulty concentrating	131 (35.4)	79 (44.6)	46 (52.2)
Fatigue/lack of energy	159 (42.9)	80 (45.1)	43 (48.8)
Overeating/food craving	66 (17.8)	54 (30.5)	32 (36.3)
Insomnia	45 (12.1)	33 (18.6)	24 (27.2)
Hypersomnia	101 (27.2)	60 (33.8)	48 (54.5)
Feeling overwhelmed or out of control	61 (16.4)	25 (14.1)	35 (39.7)
Physical symptoms	149 (40.2)	65 (36.7)	50 (56.8)

Table-2: Frequency of Premenstrual Symptoms Among Three Groups

Functional Impairment Domains	No/mild PMS N= 370 (%)	Moderate to severe PMS N=177 (%)	PMDD N=88 (%)	P
School/work efficiency or productivity	149 (40.2)	38 (21.4)	36 (40)	<0.001
Relationships with friends, classmates/coworkers	86 (23.2)	34 (19.2)	41 (46)	<0.001
Relationships with family	64 (17.2)	23 (12.9)	28 (31.8)	<0.001
Social life activities	82 (22.1)	28 (15.8)	30 (34)	<0.001
Home responsibilities	95 (25.6)	22 (12.4)	20 (22.7)	<0.001
Chi-square test; P<0.05 is considered statistically significant. PMS – Premenstrual syndrome; PMDD – Premenstrual dysphoric disorder				

Table-3: Frequency of functional impairment among groups

Coping mechanism	Frequency
Sleep	125
Taking rest	93
Watching favourite movies/programme	40
Sitting calm and relax	39
Listening to music	35
Spend time with friends and family	33
Eating favourite dishes	33
Stay alone	27
Medication	22
Crying	19
Shout on family and friends	17
Yoga, exercise and meditation	11
Reading novels	5
Coffee and soft drinks	4
Breaking things-mobile	3
Hot water fomentation	2
Talk to self	1
Biting nails	1
Taking selfies	1

Table-4: Coping mechanisms used by students

in this study actively. On screening by PSST, 88 students qualified for PMDD, 177 students met the criteria for PMS and the remaining 370 had no to mild premenstrual symptoms (Table-1).

Among the 177 students in premenstrual symptoms group, most common symptoms reported were anger /irritability – 66%, fatigue/lack of energy – 45% and difficulty concentrating – 45%. In 88 students who had qualified for premenstrual dysphoric disorder, 84% reported anger/irritability, 81% reported tearful/increased sensitivity, 75% reported anxiety/tension followed by depressed mood in 73% (Table-2).

A total of 300 students reported, at least, one area of impaired functioning. Most frequent functional impairment was in domains of “relationships with friends, classmates” and “school/work efficiency and productivity.” It was seen among 25% of the total respondents (Table-3).

Out of 635 participants, only 301 students mentioned the various mechanisms by which they handle these symptoms. Sleeping, taking rest and watching favorite movies/programme are most common coping mechanisms used by many participants (Table-4).

DISCUSSION

The sample of this study constitutes young women from a

women medical college, majority of them residing in the urban areas and were unmarried. Similar constitution of sample was seen in many studies^{3,11,14}

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 al¹¹ and other studies from Asian countries among this population.¹² The above prevalence rates are not in agreement with an Indian study by Raval, et al¹³, who reported 14.7% and 3.7%, respectively.

Anger/irritability was found to be the most commonly reported symptom in the study group, which has been reported by several other studies.^{14,15} 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.¹⁶ An Indian study by Singh et al. also confirms our findings that most common symptoms reported by subjects with out any impairment was “irritability” and in those where there was some impairment the most common symptoms were “tiredness and lack of energy”.¹⁷

The second commonest symptom of tearfulness/increased sensitivity was reported by Read et al, study which states that women 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.¹⁸

Fatigue/lack of Energy which was prevalent in the study participants were reported in studies done by Bakhshani et al.³ It was mentioned as third most common symptom in studies by Tabassum et al.,¹⁴ and Nisar et al.¹⁹ 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.²⁰

The most frequent functional impairment seen in this study was in the domains of school/work efficiency and productivity and relationship with friends, 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.¹¹

Women using sleep and rest as coping strategies for PMS was also reported in a study by Kelbessa B, et al.²¹ Women

use less cognitive restructuring when they are premenstrual.²² Distancing which is one of the coping strategy commonly used by women to lower premenstrual symptom severity includes behaviors like moving away from the stressor mentally and emotionally, being detached and accepting situation.²³ Coping strategies akin to distancing like watching movies, listening to music spending time with family and friends helped few participants in our study. Structuring is one more coping mechanism, which has also shown some benefit in lowering premenstrual stress, includes utilizing resources like time and energy appropriately, planning and setting achievable goals.²³ A few students appears to have used this type of coping like learning yoga and meditation, planning and preparing for future studies, reading books on stress. Coping strategies in women are dynamic in nature, the use of emotion focused coping increases and task avoidance as well as social diversion oriented coping decreases premenstrually.²⁴ Avoidant type of coping is common among women who report higher rates of depression premenstrually, which is independent of phase of the cycle.²¹ Effective coping and lower premenstrual symptoms were associated in women who has Emotional and material support from family and friends.²⁵

PSST is a very useful tool for screening these disorders in adolescent girls. It is highly sensitive (90.9%) and predictive value for negative PSST is also high (97%). This helps in identifying women who do not suffer PMS or PMDD very precisely.

These findings need to be replicated in a large scale community study for obtaining more accurate prevalence rates among this age group. Using prospective daily dairies will help in accurate diagnosis of PMS and PMDD. Various educational programmes related to menstrual health and various disorders related to menstruation have to be conducted before start of the study to create awareness among young women and reduce the effect of cultural taboos related to menstruation. Without such programmes young women find it difficult in volunteering to share information related to menstruation.

Limitations

This study includes selective sampling from a medical college. The reporting of symptoms was based on retrospective recall of the participants which adds recall bias. This study did not use any menstrual diaries or charts for premenstrual

CONCLUSION

Sensitizing young medical students in this topic will help them in coping with this disorder in a more effective way and they would translate this knowledge to general public which will indirectly help many women in the society.

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