



A Cross Sectional Study To Assess Premenstrual Syndrome Among Medical Students

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Abstract

Background: Premenstrual syndrome is a premenstrual disorder that is extremely common throughout the world and is associated with greater rates of sick days from work, higher healthcare costs, and lower health-related quality of life. This study's objective was to determine the prevalence of premenstrual syndrome among medical students and to identify the different cope up mechanisms adopted by the students to manage PMS.

Materials and methods: An Observational cross-sectional study was conducted in a Government Medical College among medical students using shortened premenstrual assessment form. It was developed by Allen et al, which is a 10-item tool validated for assessment of PMS. It has sub scales namely affect, water retention and pain. The total scores will be calculated and a score >27 will be considered as PMS. After obtaining ethical approval from the Institutional Review Committee, 282 female medical students were enrolled in the study who satisfy inclusion and exclusion criteria.

Results: Out of the 282-study population, 79 students i.e., 28% of the study population personally believe they are suffering from Premenstrual disorders while the remaining 72% believe they are not affected by the disease. Only 21 people out of the 73 diagnosed cases employ cope up mechanisms to relieve the symptoms. 17 people who have employed the mechanisms do not actually suffer from the disease.

Conclusion: The prevalence rate of PMS among the medical students was found to be 25.9%. Excluding the 86.5% of the study population who do not use any cope up mechanisms, whereas only 13.5% people used one or the other cope up mechanisms.

Keywords: Medical students, Premenstrual disorders (PMD), Premenstrual Syndrome (PMS),

Introduction

With the advancement of science and technology, menstruation is no longer a myth and a taboo. Nevertheless, pre-menstrual disorders (PMD) are still under-recognized. is a psycho neuroendocrine problem of unknown etiology. PMS is defined as cycling phenomena by somatic and affective symptoms that occur during the luteal phase and usually terminates following the menstrual blood

flow¹ interfering with work and lifestyle followed by a symptom free period². Somatic symptoms include fatigue, abdominal bloating, breast tenderness, headache and swelling in extremities.

Affective symptoms include irritability, anger outburst, depression, confusion, anxiety and social withdrawal. International Society for pre-menstrual

disorders (ISPMD) consensus classified PMD into core PMD and variant PMD³. PMS and premenstrual dysphoric disorder commander core PMD. Variation in the prevalence of PMD is due to the difference in ethnicity, smoking, alcohol consumption, stress, exercise, social and cultural background, and diagnostic criteria in study design. Women with uneven bothersome or distressing PMD often go unrecognized or under treated. This is either because they do not report the symptoms to a clinician, or the clinician has difficulty in diagnosing the disorder and in most situations an adequate response to the demand is not provided. The global prevalence of PMS has been reported in 20 to 32 % of premenopausal and 30-40% of the reproductive female population⁵. In a population-based study conducted in India 91% of the participants reported at least one symptom, 10.3% had PMS and 3.1% fulfilled the criteria for premenstrual dysphoric disorder (PMDD) ⁶. Review of literature did not yield any substantial evidences in our setting. Due to paucity of scientific literature of this health-related events the present study was proposed.

Medical students who form the backbone of medical and health care service providers in the future if not fully aware of the PMS, attribute changes that occur due to other underlying social, physical, or emotional disturbance in one's life to be because of this disease. Hormonal changes underline these symptoms which can lead to difficulties in day-to-day functioning and work, quality of life especially due to the inherent professional challenges which add to their normal routine. Therefore, this is significant public health problem as increased incidence of depression and anxiety disorders were found in women suffering with PMS indirectly in the form of absence at work, frequent hospitalization, and suicides when severe⁷.

The present study is proposed in the department of psychiatry, Government Medical College, Srikakulam with an annual intake of 150 undergraduate students and 25 postgraduates. The college provides hostel facility for female students that can accompany around 300 students. The department of psychiatry in the government hospital is well equipped with treatment, diagnosis and counselling services. The present study done in this setting gives a scope of understanding this disease as it was not covered under any programme and is not

well understood among the medical students but with considerable prevalence which needs attention.

Objectives

1. To know the prevalence of PMS among the medical students.
2. To identify the different cope up mechanisms adopted by the students to manage PMS
3. To identify people who need active intervention regarding PMS.

Materials And Methods:

Study design: - Observational Cross-Sectional study.

Study population: - Female medical students in the age group of 18-25 years old.

Inclusion Criteria:

All the female students between the age grp of 18-25 with regular menstrual cycles.

Exclusion Criteria

1. Students with known physiological or medical disorders from the past 6 months.
2. Students with menstrual irregularities.
3. Students under usage of drugs or hormonal supplements.
4. Students with alcohol or substance abuse.
5. Students who do not give consent.

Sampling Frame: - List of all female medical students enrolled in the college who satisfy inclusion and exclusion criteria.

Sample Size: - Sample size is calculated based on the prevalence formula. $4PQ/L^2$

Where, P is prevalence which is taken from the previous study by Noida International University as 80%.⁸

Q is 1-P L is an allowable error which is taken as 5% in my study.

Sample size calculation: - $4 \times 0.2 \times 0.8 / 0.05 \times 0.05 = 256$ Considering 10% as non-response rate the total sampling size is calculated to be 281.6 rounded off to 282.

Sampling technique: - Based on the above prevalence formula 282 random students responses would be considered from the overall responses.

Study tool: - Shortened premenstrual assessment form. It is developed by Allen et al, which is a 10-item tool validated for assessment of PMS. It has sub scales namely affect, water retention and pain. Each item is scored as:

1. no change
2. minimal changes
3. mild change
4. moderate change
5. severe change
6. extreme change

The total scores will be calculated and a score >27 will be considered as PMS

Data collection method: - The students will first be asked whether they are suffering from the problem of PMS according to one's knowledge and then the questionnaire will be provided. The questionnaire will be uploaded as a Google form and required information will be taken from the participants. The questionnaire will also contain an additional question on the cope up mechanism used (if any), regularity of the usage and its effects along with the standard questionnaire for PMS.

Statistical Analysis: - Study variables will be expressed in percentages and proportions. MS Excel and sheets will be used for data entry. Chi-square test will be used to find association between categorical variables.

Ethical Considerations: - Permission will be obtained from the Institutional ethical committee before the commencement of the study. Online informed consent will be taken from all the subjects after briefly explaining the purpose of the study. The identity of the subject will be kept confidential.

Results:

Out of the 282-study population, 79 students i.e., 28% of the study population personally believe they are suffering from Premenstrual disorders while the remaining 72% believe they are not affected by the disease.

Out of 79 people who believe they are suffering from PMS, only 41 members have been diagnosed with the disease which rules out 38 people having a false perception.

The difference between the perception and prevalence of PMS was found to be statistically

significant. More than 1/4th i.e., 73 students out of 282 miss their classes/ college thinking they are suffering from the symptoms of premenstrual disorders independent of their PMS status as given in Table:1.

Table:2 shows that about 73(25.8%) are suffering with PMS. Out of the 73 people who are diagnosed to have PMS nearly 50% of the people i.e., 37 of them miss their classes due to the disease while the remaining people who miss the classes assume to have PMS while the underlying reason is not clearly understood by them.

It was found that 37/73 students missed their classes/college due to PMS.

Only 13.5% of the people use different kinds of cope up mechanisms to combat the various symptoms that are caused due to premenstrual syndrome.

Table:3 shows that only 21 people out of the 73 diagnosed cases employ cope up mechanisms to relieve the symptoms. 17 people who have employed the mechanisms do not actually suffer from the disease.

Figure 1 depicts that excluding the 86.5% of the study population who do not use any cope up mechanisms, the various mechanisms used by the people include usage of heat packs accounting for 2.8% of the people is the most used cope up mechanism. This is followed by using medications, watching movies, listening to music, taking rest, exercise and alterations in their diet pattern. A minority of the population i.e., around 1.1% employ mechanisms like talk therapy, yoga, and meditation.

Out of the 13.5% of the study population who use cope up mechanisms, 9.2% of them continue using the same mechanism in a regular manner.

Out of the 209 people who do not have PMS, 16 members have started using the mechanisms assuming they are suffering from the disease and 11 out of 16 are regular.

12% of the population out of 13.5% who use the cope up mechanisms have been benefited by the method they have employed in combating the symptoms of PMS.

Out of the 209 undiagnosed cases of PMS, 17 of them employed the cope up mechanisms believing

they are suffering from the disease. Fortunately, 14 of them were found to be benefitted.

Half of the people have not found any exaggeration of the symptoms when they are not using the adopted cope up mechanism in a regular manner. This might be the reason for the 4% of the population from retaining themselves to use the mechanism regularly.

Majority of the study population i.e., 5% out of the 13.5% of the people have self-learnt about the cope up mechanism they can employ during premenstrual syndrome while mother played the next vital role in providing the information regarding the mechanisms, they can follow during PMS followed by the advice of friends and doctor.

Only 11 members out of the 73 people who are suffering from PMS have consulted the doctor while 3 members who do not have PMS have consulted the doctor assuming they are suffering from the disease.

Discussion

The stressful academic schedule of medical students poses an obvious challenge to their daily lifestyle. Psychosomatic discomfort poses a significant risk for inaccurate self-medication for ameliorating menstrual complications and feeling better, thus directly impacting personal and academic wellbeing. The impact of menstrual disturbances on academic life is not extensively explored. Therefore, the primary objective of this research was to probe the prevalence of menstrual disturbances and assess the academic and social impact.

Out of the 282-study population, 79 students i.e., 28% of the study population personally believe they are suffering from Premenstrual disorders while the remaining 72% believe they are not affected by the disease. Study done among medical students in Delhi by Sharma et al¹⁵ has reported a perceived PMS of 67%. The difference in the results might be due to the applied tool for studies and the study setting. Also the low prevalence of PMS in this study could have been due to the difference in the underlying factors that influence the PMS.

Out of 79 people who believe they are suffering from PMS, only 41 members have been diagnosed with the disease which rules out 38 people having a false perception. The difference between the perception and prevalence of PMS was found to be statistically

significant. This might be due to the incomplete knowledge of the medical students regarding the symptoms of the PMS.

The evaluation of PMS in this present study was done based upon the following signs and symptoms that are included in the questionnaire. The list of symptoms include tenderness in breasts, feeling under stress, feeling sad or stressed, bad temper, backaches, abdominal bloating and discomfort, and oedema. The responses in comparison with the study done by Shamnani G et al¹⁶ showed similar results among signs such as abdominal bloating which was 22.6% in the present study and was 20% in the author's study and bad temper which accounted for 25.2 % in present study and 32% in the latter. These observed similarities between the studies might be due to the inherent characteristic expression of the disease.

Ruling out the similar complaints, the other signs and symptoms showed difference in response rate such as breast tenderness (5%), oedema (2.5%), depression (2.7%), anxiety (18.5%) in the present study where as the author reported breast tenderness (21%), oedema(31%), depression(12%), anxiety(32%). This difference could be attributed to different perception rates which are subjective and based on awareness about the expression of the disease. Missing of classes due the disease was found to be 12% in the authors study while it was more than the double as in 26% in the present study.

Various members of the study adopted various mechanisms to cope up with the difficulties posed by the PMS. As per the results obtained from study questionnaire, the various cope up mechanisms that are adopted by the students include diet modifications (1.8%), exercise (1.8%), medications (2.5%) indulging in movies and music (2.1%) and heat pack was used by majority of the students in the sample (2.8%). Talk therapy, yoga and meditation (1.1%) are also a part of different cope up mechanisms that are observed by a lesser number of participants.

This when taken in comparison with the authors study reveal that most of the people i.e., as high as 54% manage PMS with prolonged resting hours followed by use of medications accounting for 60% which is in contrast with the present study. This difference might be due to the challenges the individual has to face in the everyday life, behaviour

of the individual combined with the awareness, social and cultural factors influencing them in choosing a cope up mechanism that is best suitable for themselves.

When asked about the source of the cope up mechanisms, the results were divided into three categories. They include mother (3.5%), doctor(2.8%), friends(2.1%) and self- learnt(5%). In the authors study, the results were as, 45% of symptomatic participants consulted their mothers, 28% to their friends, 21% others, and only 6% consulted physician.

The differential rates of these cope up mechanisms could be due to the development and adaptation of cope up mechanisms that are dependent on real life exposures and experiences which are purely based on social, cultural, environmental, psychological, genetical and sometimes also on mother's history of PMS.

18% of study population i.e., 38 out of 209 who are not diagnosed with PMS believe they are suffering from the disease and adopted to different cope up mechanisms. 3 out of them even consulted the physician. This clearly shows the gap of awareness which should be addressed in this aspect.

The report also throws light on the undiagnosed PMS cases who despite using the cope up mechanisms regularly have failed to manage the symptoms that they are facing which might be due to the underlying health conditions which need further attention in both personal and medical aspects.

The present study has its inherent strength as it has used standard validated tool using which many studies were done worldwide. The study was conducted among 282 sample size which was scientifically calculated based on the actual prevalence rates. This study also recognizes the people who have PMS but have failed to recognize the symptoms which might be due to other unknown causes that need to be further investigated.

The limitation of the study is that the study adopted cross sectional study design due to time constrain but a cohort study design would have been more appropriate to capture the phenomenon in the best possible manner. The study findings may not be applicable to the general population and might yield

different results as the study population is restricted to a particular profession.

Recommendations

1. In view of the study population having symptoms that mimic the symptoms of PMS but not relieved on regular usage of cope up mechanisms, its recommended to develop newer tools for differentiating PMS with other similar health conditions.
2. Based on the results of the study, there is a substantial gap of awareness regarding PMS which can be addressed by conducting health awareness camps combined with health education.

Conclusions

1. The prevalence rate of PMS among the medical students was found to be 25.8%.
2. Excluding the 87% of the study population who do not use any cope up mechanisms, the various mechanisms used by the people include usage of heat packs accounting for 2.8% of the people is the most used cope up mechanism. This is followed by using medications, watching movies, listening to music, taking rest, exercise, and alterations in their diet pattern. A minority of the population i.e., around 1.1% employ mechanisms like talk therapy, yoga and meditation.
3. 43% of the people i.e., 32 out of 73 members diagnosed with PMS have a false perception of not having PMS due to their inability to identify the symptoms. Such people need active intervention in diagnosing the disease and directing the resources from the ones who have a false perception of having PMS.

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“Table: 1 Do u personally believe you are suffering from premenstrual disorders? * PMSCAT Crosstabulation”

P<0.001(significant)		PMSCAT		Total
		NOPMS	PMS	
Do u personally believe you are suffering from premenstrual disorders?	No	171	32	203
	Yes	38	41	79
Total		209	73	282

“Table:2 Do you miss your classes/college due to PMS?* PMSCategory”

Chi-square=30.406 P< 0.001(Highly significant)		PMSCAT		Total
		NOPMS	PMS	
	No	172	36	208
	Yes	37	37	74
Total		209	73	282

“Table:3. Do you use any cope up mechanisms to manage PMS? * PMS Category”

Chi-square=19.75 P< 0.001(Highly significant)		PMSCAT		Total
		NOPMS	PMS	
	No	192	52	244
	Yes	17	21	38
Total		209	73	282

Figure:1 Distribution of students based on type of cope up mechanisms in PMS

