



PREVALENCE OF PREMENSTRUAL SYNDROME AMONG YOUNG WOMEN

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ABSTRACT:

Introduction: Pre menstrual syndrome is a condition which could be disabling due to its physical and psychological symptoms. More than 200 symptoms have been described for this condition. Various diagnostic algorithms have been developed for their diagnosis and the varieties of treatment modalities too have been described.

Materials and Methods: This was an observational study on 100 medical students to look for the prevalence of pre menstrual syndrome through a symptom diary for 2 months and followed by a detailed analysis of the prevalence, symptoms and severity of the symptoms.

Results: PMS was found in 63% of the subjects. 85% of them had physical symptoms, 81% had psychological symptoms and 75% had reactionary symptoms to environment. Severe and extreme symptoms were found in around 8% of patients. Commonest symptoms found were Anger (86%), Reduction in productivity (79%), Less interest in usual

activities and symptom of breast tenderness (Each 74%), anxiety (66%), increased sleep (65%) and a feeling of lethargy (61%). There was a great overlap of symptoms.

Conclusion: PMS is a condition found to have a wide variation in its prevalence across the globe. Various other environmental and epidemiological influences that can affect the occurrence and severity of the condition must be studied so that effective interventions may be initiated in the treatment of this condition.

Keywords: premenstrual syndrome, physical symptoms, psychological symptoms, reaction to surroundings, RCOG PMS symptom chart.

INTRODUCTION:

Premenstrual syndrome (PMS) is cyclic physical and behavioural symptoms that appear in the days preceding menses and interfere with work or lifestyle followed by a symptom free interval (Steiner & Born, 2000). It was called Pre menstrual tension,

pre menstrual tension syndrome, late luteal phase dysphoric disorder, pre menstrual dysphoric disorder etc (Yonkers et al., 2008).

It is typically seen in the last 7-10 days of cycle (Mortola et al., 1990) and clinically significant premenstrual syndrome is seen in 20-30% of women (Borenstein et al., 2005; Mortola et al., 1990; Rivera-Tovar & Frank, 1990; Steiner & Born, 2000). Amongst them around 5-8% can have severe symptoms and many of these women have symptoms overlapping with the symptoms of pre menstrual dysphoric disorder (Direkvand-Moghadam et al., 2014). The diagnosis of premenstrual syndrome requires a medical and psychological history and physical examination, but it is the daily prospective charting of bothersome symptoms for 2 menstrual cycles that will clearly determine if the symptoms are related to premenstrual syndrome or to another underlying medical/psychiatric diagnosis. Various diagnostic criteria have been established for their diagnosis and there is no clarity about the best method to diagnose PMS. The aetiology of this condition also has not been clearly elucidated and various theories have been put forward to explain this condition. Epidemiological studies have shown a wide variation in the incidence of this condition in different geographic areas, age groups, professional groups etc (Direkvand-Moghadam et al., 2014).

More than 200 symptoms have been associated with PMS, but irritability, tension, and dysphoria are the most prominent and consistently described (Steiner & Born, 2000).

Diagnostic and Statistical Manual III and IV (DSM III & IV) (American Psychiatric Association, 1987, 1994) stipulates (1) the presence of at least five luteal-phase symptoms (panel), at least one of which must be a mood symptom (ie, depressed mood, anxiety or tension, affect lability, or persistent anger and irritability); (2) two cycles of daily charting to confirm the timing of symptoms; and (3) evidence of functional impairment. Finally, symptoms must not be the exacerbation of another psychiatric condition. An ICD-10 symptom checklist for PMS (World health organization, 2010) was used to identify girls with PMS. The ICD-criteria for PMS includes seven symptoms: minor psychological discomfort, bloating or weight gain, breast tenderness, muscular tension, aches and pains, poor concentration and changes in appetite. Only one of these symptoms is required for diagnosis. Symptoms must be restricted to luteal phase of the menstrual cycle and cease with commencement of menstrual flow.

RCOG has given the questionnaire for the same with diagnostic algorithm (Green et al., 2016). ACOG has defined moderate to severe PMS by the finding of one either psychological or physical symptom which causes significant impairment and the same may be confirmed by prospective ratings (ACOG Committee on Practice Bulletins—Gynecology, 2000).

Treatment wise the condition has been treated with sex hormones, pituitary hormones, ovulation suppression, SSRIs etc., but there is no clarity about the management of this somewhat enigmatic condition.

AIMS AND OBJECTIVES:

This observational study aims to determine the prevalence of PMS in medical students in the age group of 21-25 years.

MATERIALS AND METHODS:

This observational study, to determine the prevalence of Premenstrual syndrome in the medical students was conducted in an urban medical college of Bengaluru, Karnataka, India from August 2018 to September 2018. It was conducted in 100 medical students studying in 4th year and final year MBBS, who fulfilled the inclusion and exclusion criteria. A written consent of the participant was obtained. Students belonging to the age group 21-25 years and having regular menstrual

cycles atleast in the previous 6 cycles were included in the study. Women with an ovulatory diseases, or pre existing psychiatric illnesses and on anti psychotic medications, and married women were excluded from the study.

A standard questionnaire recommended by the RCOG^[12] (Annexure 1) was provided to all the students and were asked to enter the symptoms for a period of 2 months in two different sheets. Eleven symptoms and their effect on three aspects of their daily activity were scored, and depending on the severity of symptoms as per their scoring the PMS was categorized. The symptoms were grouped as physical, psychological and reaction to surroundings. (Shown in Table 1)

TABLE 1: SYMPTOM CATEGORIZATION

PHYSICAL SYMPTOMS	PSYCHOLOGICAL SYMPTOMS	REACTION TO SURROUNDINGS
<ul style="list-style-type: none">● Felt lethargic, tired or fatigued; or had lack of energy● Had increased appetite or overate; or had cravings for specific foods● Slept more, took naps, found it hard to get up when intended; or had trouble getting to sleep or staying asleep● Had breast tenderness, breast swelling, bloated sensation, weight gain, headache, joint or muscle pain, or other physical symptoms	<ul style="list-style-type: none">● Felt depressed, sad, “down” or “blue”, or felt hopeless; or felt worthless or guilty● Felt anxious, tense, “keyed up” or “on edge”● Had mood swings (i.e. suddenly feeling sad or tearful) or was sensitive to rejection or feelings were easily hurt● Felt angry or irritable● Felt overwhelmed or unable to cope; or felt out of control	<ul style="list-style-type: none">● Had less interest in usual activities(work, school, friends, hobbies)● Had difficulty concentrating● At work, school, home or in daily routine, at least one of the physical or psychological symptom caused reduction of productivity or inefficiency● At least one of the physical or psychological symptom caused avoidance of or less participation in hobbies or social activities● At least one of the physical or psychological symptom interfered with relationships with others

The symptoms too were categorized as minimal, mild, moderate, severe, and extreme. This was based on the subjective scoring given by the participants in a scale of 1-6, in which scores were assigned degrees as,

1 - not at all, 2 - minimal, 3 - mild, 4 - moderate, 5 - severe, 6 - extreme.

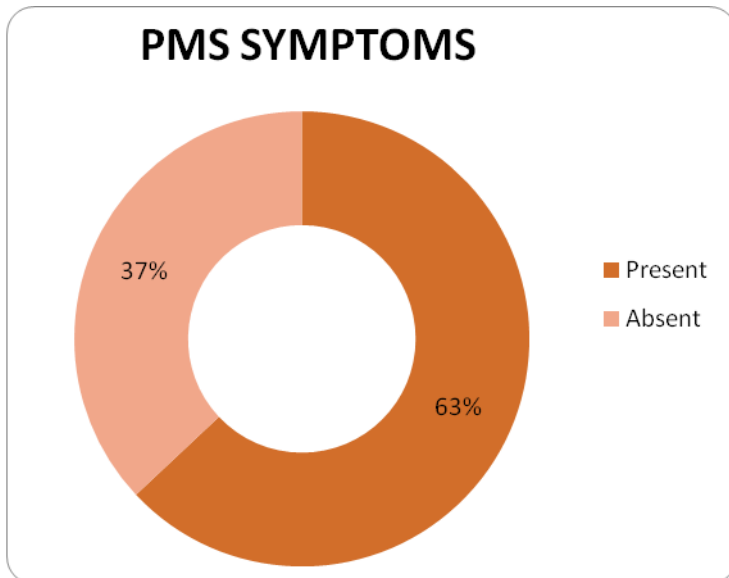
The frequency of different symptoms was analysed by percentages and proportions.

The prevalence of the PMS, frequency of different symptoms including the commonest symptom, rarest symptom were analysed.

RESULTS:

PMS symptoms were found that 63 % of the subjects had symptoms of pre menstrual syndrome. (Fig 1)

FIG 1: PREVALENCE OF PMS SYMPTOMS



An analysis of group wise symptoms showed that 85.7% had physical symptoms, 81% had reactionary symptoms to surroundings and 75% had psychological symptoms(Fig 2). Overlap of all the three group of symptoms was seen in 11% of the subjects, physical and

psychological symptoms overlapped in 14.3% of the participants whereas physical and reactionary symptoms overlapped in 12.7% of subjects and an overlap of psychological and reactionary symptoms was seen in 9.5% patients (Fig 3)

FIG 2: GROUP OF SYMPTOMS AND FREQUENCY

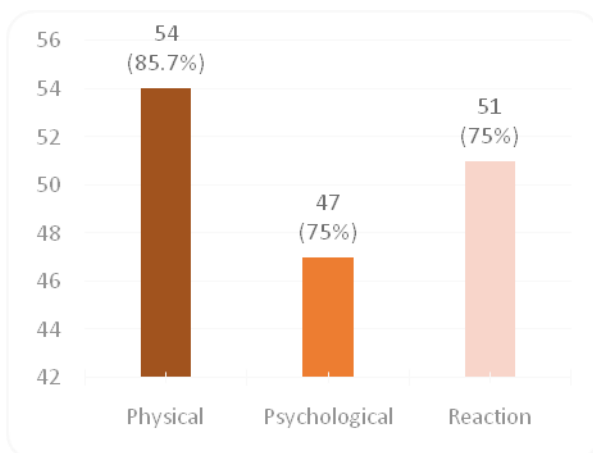
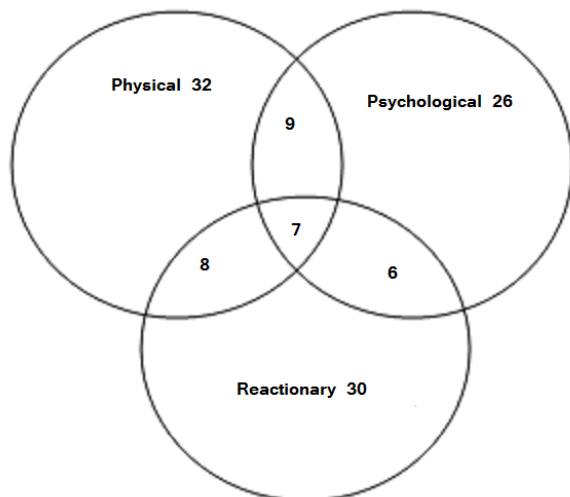
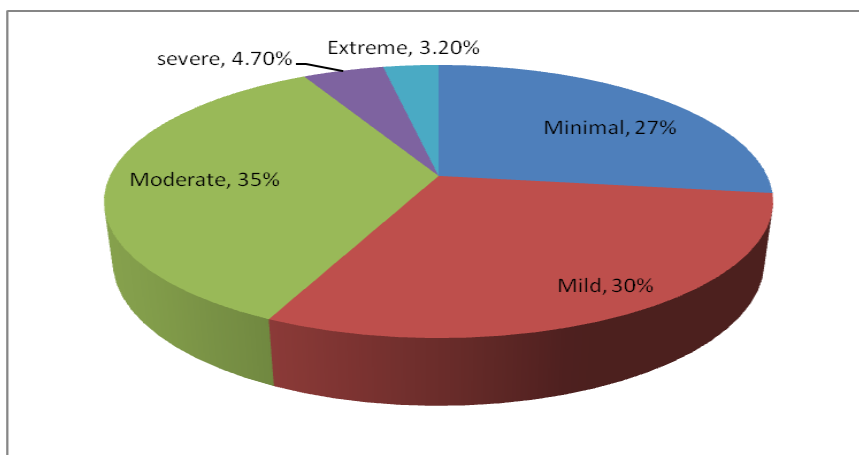


FIG 3: OVERLAP OF SYMPTOMS



Analysis of severity of symptoms showed that mild and moderate symptoms (Together 65%) were very commonly encountered, whereas severe and extreme symptoms were very infrequent (Less than 5%) (Fig 4)

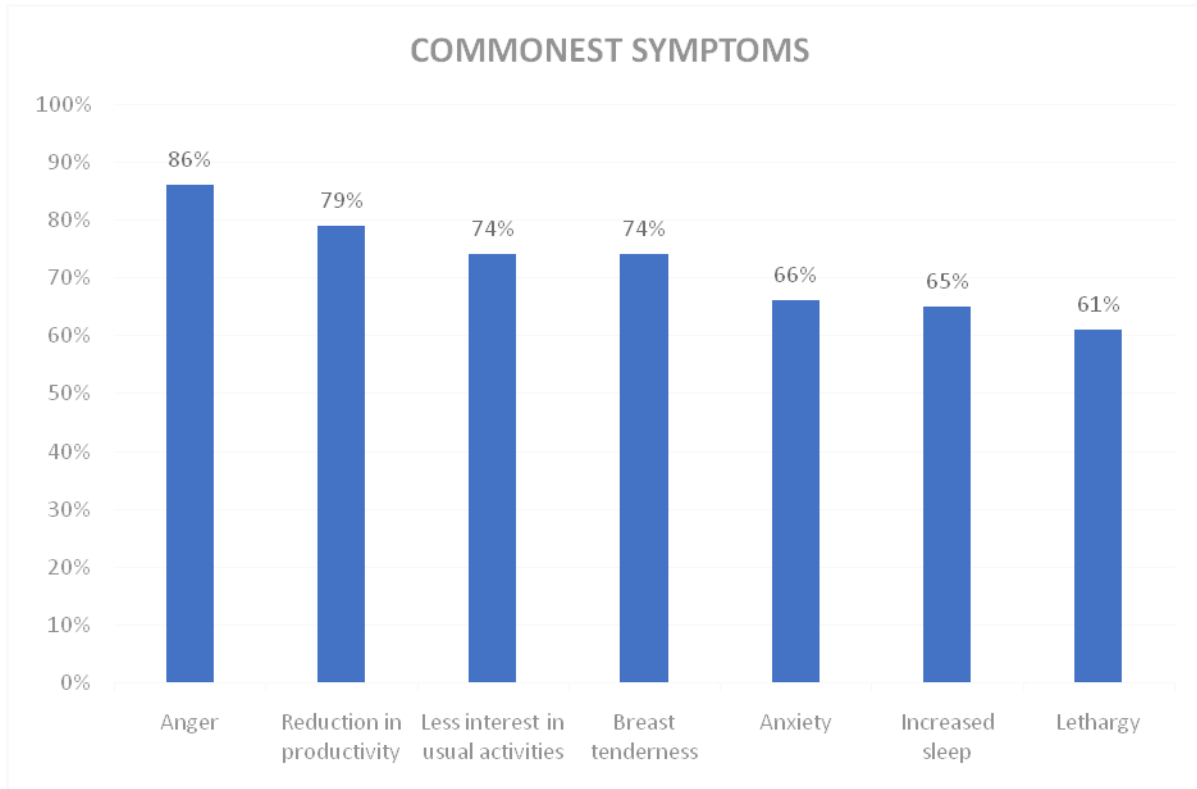
FIG 4: SEVERITY OF PMS SYMPTOMS



Of the 63% PMS symptom positive subjects, commonest symptoms found were Anger (86%), Reduction in productivity (79%), Less interest in usual activities and symptom of breast tenderness (Each 74%), anxiety (66%),

increased sleep (65%) and a feeling of lethargy (61%). There was a great overlap of symptoms, and commonest association was breast tenderness, anger and anxiety. All the above three were found in 70%. (Fig 5)

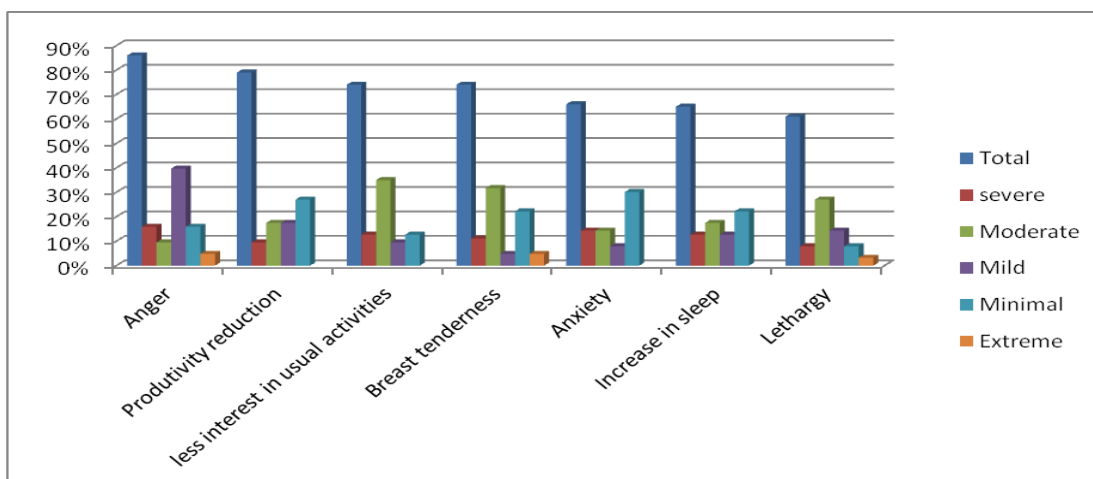
FIG 5: COMMON SYMPTOMS OF PMS



Further analysis of the commonest symptoms has shown that extreme symptoms are found only with anger, breast tenderness and a feeling of lethargy to a minimum extent of not above 5%. Severe symptom too was found to be maximum with anger (15.9%), sleepiness (12.7%), anxiety (14.3%) and breast

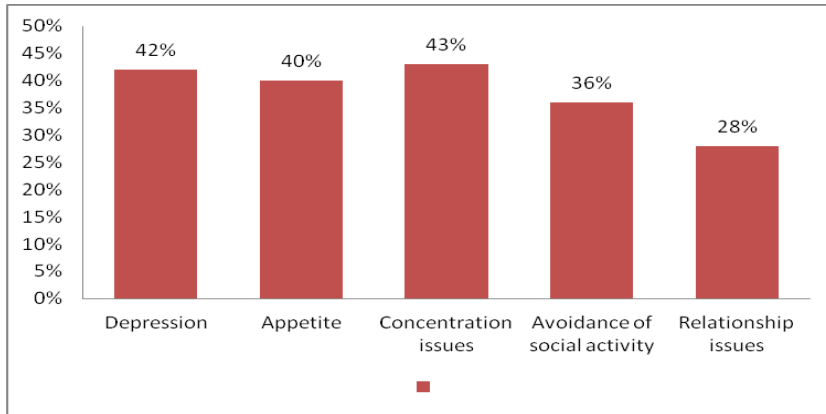
tenderness (11%). But extreme symptoms have not been found with all the symptoms. Extreme symptom was found to be highest (though to the tune of less than 10%) only with the feeling of decreased productivity due to either physical or psychological symptoms. (Fig 6)

FIG 6: COMMONEST SYMPTOMS WITH THEIR SEVERITY



Less frequently found symptoms too were analysed. Least one was the relationship issues caused by physical or psychological symptoms. Depression and increased appetite too were less frequently found (around 40%) in comparison to the other symptoms. (Fig 7)

FIG 7: LESS COMMON SYMPTOMS



Individual symptom group analysis too has been shown in the following figures. The most severe psychological symptom experienced among the subjects was a feeling of anger, which was extreme in 4 (6%) and severe in 11 (18%) women (Figure 8). The most severe physical symptoms experienced were breast tenderness followed by increased appetite. 4 (7%) and 9 (14%) women had extreme and severe breast tenderness respectively, 4 (7%)

and 4 (7%) women had extreme and severe increase in appetite respectively (Figure 9). Among the reaction to surroundings the most severe symptom experienced was reduction of productivity with 7 (11%) women having extreme symptoms and 7 (11%) women having severe symptoms. This was followed by difficulty in concentrating with 4 (7%) women having extreme difficulty and 13 (21%) having severe difficulty (Figure 10).

FIG 8: PSYCHOLOGICAL SYMPTOMS WITH THE ANALYSIS OF SEVERITY

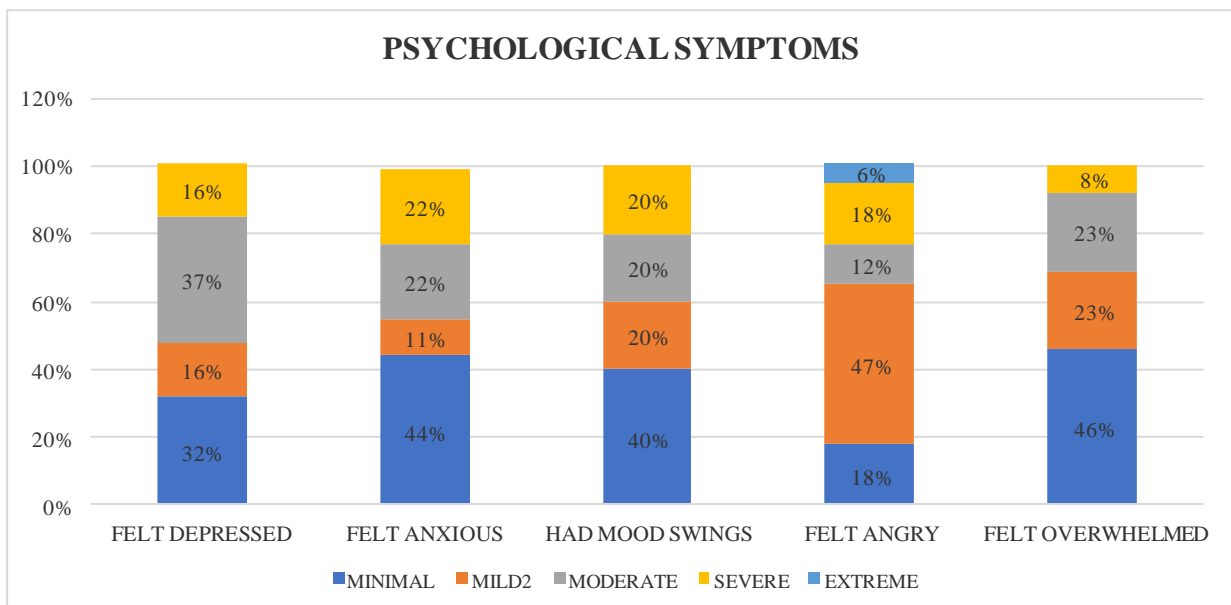


FIG 9: PHYSICAL SYMPTOMS WITH THE ANALYSIS OF SEVERITY

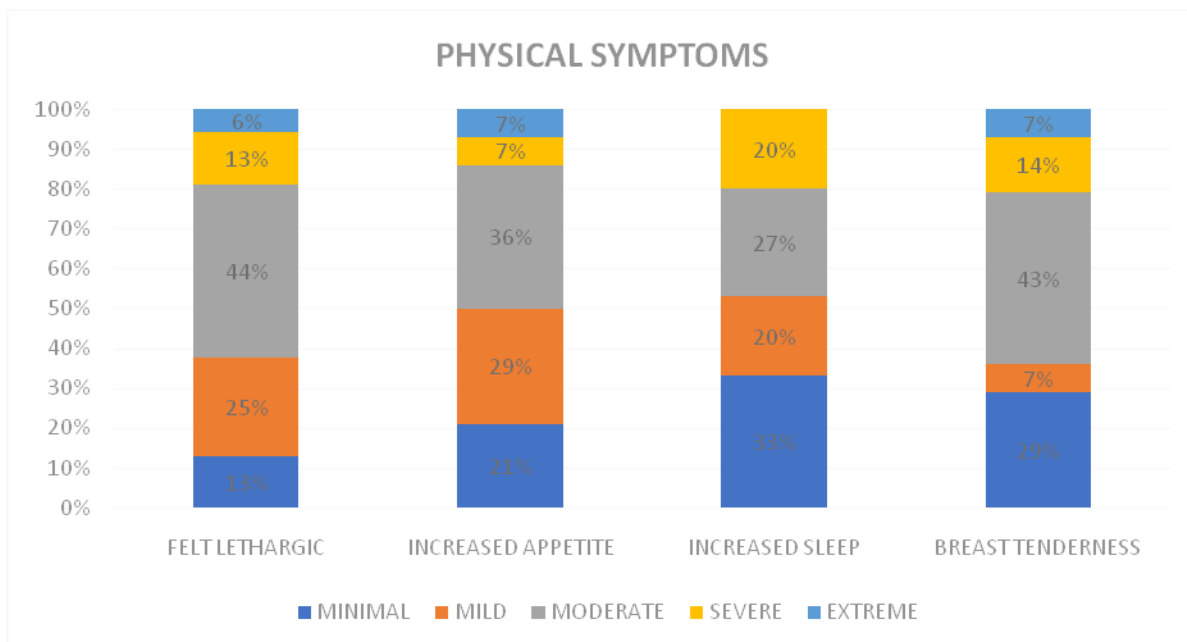
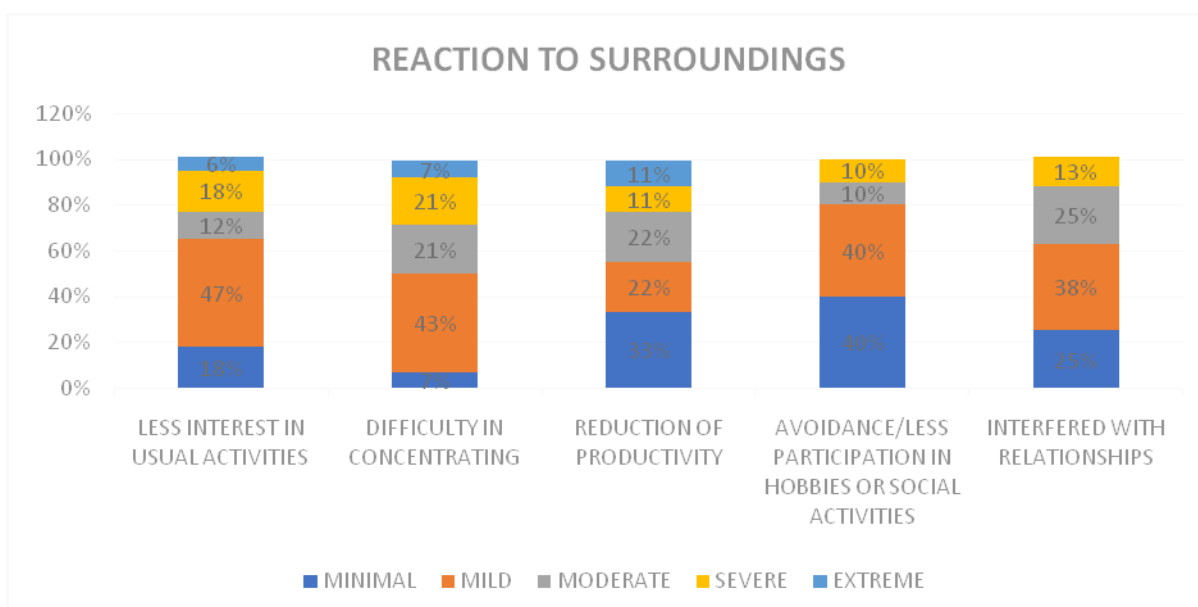


FIG 10: REACTION TO SURROUNDINGS- SYMPTOM ANALYSIS WITH THE ANALYSIS OF SEVERITY



DISCUSSION:

The prevalence of PMS in the present study was found to be 63%. A study done in Iran showed the prevalence to be 85.6 % (Naeimi, 2015). Similar study conducted in Thailand involving 399 adolescent girls of high school reported 29.8% prevalence of PMS (Buddhabunyakan et al., 2017). The prevalence of PMS was found to be 18.4 % in a study conducted by Raval CM,

et al on the college students of Bhavnagar, Gujrat India (Raval et al., 2016). And in a meta-analysis study, it was shown that highest and lowest prevalence of PMS was reported in Iran, 98% and France, 12% respectively (Direkvand-Moghadam et al., 2014).

Prevalence in US is found to be 20-40% moderate and 3-8% severe, and also the worldwide occurrence of PMS has been

quoted to be 10-98% (Direkvand-Moghadam et al., 2014).

A wide geographic variation has been found in the above studies and thus a detailed analysis of influence of diet, climate, anthropometry, genetic basis has to be considered and a detailed analysis may throw some light on the variations in the prevalence across the world. Also the studies have used different parameters to diagnose PMS, in contrast to the present study using the RCOG symptom chart for the diagnosis.

Some studies have looked into clinically significant symptoms and also moderate to severe symptoms only being considered to look at the prevalence of PMS. This gives a prevalence of 5-20% of all women in the reproductive age group having moderate to severe symptoms of PMS (Borenstein, Dean, Endicott, Wong, Brown, et al., 2003).

The mean age group of the participants in the present study was 23.2 years. A similar study reports a mean age of participants to be 21.2 + 1.9 years, 51% girls met the criteria for PMS among them, 59.5% had mild PMS, 29.2% had moderate and 11.2% had severe PMS (Nisar et al., 2008). The present study showed 57% minimal and mild, 35% Moderate and 7.9% severe and extreme. The similarity in occurrence can be appreciated in both the studies. The order of frequency of symptoms were anger, irritability, anxiety, tiredness, difficult concentration, mood swings and physical symptoms like breast tenderness and general body discomfort with great impairment in social life / activities and work efficiency/productivity. The present study too has found most of the

frequently found symptoms found in the study from Pakistan.

A study from Peshawar (Tabassum et al., 2005) showed the frequency of premenstrual syndrome to be 53% according to ICD-10 criteria, among which 42% was mild, 18.2% moderate and 31.7% severe amongst 384 girls. The incidence is similar to the present study but the severe symptoms were found in a significantly less number of subjects in our study. But the system used for categorizing has been different and this could be the cause for this difference. In the same study it was found that the order of frequency of symptoms occurring in PMS was general body discomfort, anxiety, backache, fatigue and depression. Most frequently reported symptoms in PMDD group were anger, anxiety, stress, depression, fatigue and general body discomfort. This too goes with the present study which shows that anger, anxiety, lethargy were found to be the commonest symptoms. Though some other symptoms like depression, increased appetite were found to be less frequent in the present study, they were found to be little more than 40%.

The categorization of the symptoms as physical, psychological and reaction to surroundings showed that most of the cases have an overlap of symptoms mostly not showing a pure group. Overlap of all the three group of symptoms also were found in some cases. This calls for categorization which will probably help in the treatment modality for any particular patient which may have to be individualized.

The present study has shown that amongst the subjects, the severe and extreme symptoms have been very

infrequent which is a fortunate event. Most of the reactionary symptoms are resulting from physical or psychological symptoms. Thus counseling might play a very crucial role in the management of PMS with psychological and reactionary issues.

CONCLUSION:

PMS is a relatively common condition with wide variation in its prevalence across the globe. It needs to be analysed by some scientific means and suitable solution offered to the patient. It can be really incapacitating and troubling to the women. A knowledge of factors that could either aggravate or alleviate the symptoms could find the key to the appropriate treatment modality. Further studies are required for clarity on the aetiology, pathogenesis and symptomatology of this condition.

PROSPECTS OF THE STUDY AND ITS LIMITATIONS:

An analysis of factors like geographic area, age, diet, socio economic state, profession has not been done in this study which may be very informative. A large number of subjects being involved with a multicentric pattern could be undertaken for more information on this condition. Also other co morbidities and their influence on this condition too can be studied.

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