# PREVALANCE OF PREMENSTRUAL SYNDROME AND KNOWLEDGE ASSESSMENT REGARDING IT'S PREVENTION AMONG MEDICAL STUDENTS OF A PRIVATE MEDICAL COLLEGE OF ISLAMABAD

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## ABSTRACT

***Objective:*** To assess prevalence of premenstrual syndrome (PMS) in medical students and to determine their knowledge regarding its prevention.

***Study Design:*** A cross sectional study.

***Place and Duration of Study:*** This study was conducted at Foundation University Medical College, Islamabad, from Jun to Aug 2017.

***Material and Methods:*** A purposive sample of 359 female medical students was taken after applying selection criteria. After ethical approval and consent of respondents, data was collected through self-administered structured questionnaire on demographic variables, prevalence of PMS, physical, psychological and behavioral changes, knowledge regarding its prevention etc. Data was analyzed by SPSS version 20. Frequencies were computed and descriptive statistics applied. Cross tabulation between knowledge regarding prevalence of premenstrual syndrome and prevention of premenstrual syndrome was done. Pearson Chi Square test was applied to see the association between these two variables. Cochran test of conditional independence was applied to see conditional association between these variables at *p*-value <0.05.

***Result:*** PMS was found in 280 (80%) students. Out of them, 266 (95%) experienced physical changes and breast tenderness was the most common 159 (60%). While 210 (75%) had psychological changes and depression was found in 76 (36%). Behavioral changes were present in 120 (43%) and most prevalent was effect on academic performance which was 88 (76%). About 250 (71.5%) were ignorant about its prevention while only 100 (28.5%) knew about its prevention. Statistically significant association was found between knowledge regarding prevention of premenstrual syndrome and presence of premenstrual syndrome, as *p*-value 0.00 of Pearson Chi-Square 35 at df1 was less than 0.05. On application of Cochran test of conditional independence, significant conditional association was found between these variables as *p*-value of 0.00 was <0.05.

***Conclusion:*** Premenstrual Syndrome was found in majority of the students while knowledge about its prevention was low. Its effect on academic performance was agreed by majority of students. Awareness activities should be undertaken about the syndrome and its prevention. The subject should be given importance especially in the curriculum of medical education.

**Keywords:** Behavioral changes, Physical changes, Premenstrual syndrome, Prevalence, Prevention, Psychological changes.



## INTRODUCTION

It was estimated through epidemiological studies that 80-90% of premenstrual syndrome symptoms (PMS) are experienced by women which interfered with their daily activities[1]. Prevalence was higher among the women who reported four or more symptoms as the diagnostic criteria was less rigid[2]. A variety of symptoms include premenstrual dysphoric disorder (PMDD) ranging from mild to severe[3]. Mild symptoms do not interfere with routine daily activities while moderate do, whereas severe symptoms cause hindrance in participation of activities[1]. This condition is faced by woman in reproductive age at least once in her life time. There is no known cause of this psycho-neuro-endocrinal disorder. Its diagnosis is dependent on the presence of physical,

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*Received: 28 Nov 2017; revised received: 09 Jan 2018; accepted: 12 Jan 2018*

behavioral and mood symptoms which arise in the second half of menstrual cycle and disappear after menstruation[4]. Though menstruation is a physiological phenomenon but it is an important indicator of women's health. One or more symptoms were reported in 85% of women. PMDD is experienced by 3% to 8% of fertile women[5]. It is used to define occurrence of cyclical physical, intellectual, affective, and behavioral symptoms during the luteal phase of the menstrual cycle. These symptoms resolve quickly at or within a few days of the commencement of menstrual flow[6-8]. Premenstrual symptoms are experienced by almost 95% of women of reproductive age group[9]. Less than 10% of them are diagnosed with PMDD. Advancing age (beyond 30 years) and genetic factors are the contributing risk factors for this disorder. However, in adolescents, these symptoms are recognized and can begin in about 14 years of age, or 2 years after the menarche, and remain until menopause[10]. It is reported by WHO that about 199 million women are estimated to have this condition, which accounts for 5.8% of the whole population while 80% of menstruating women have at least one feature that can be attributed towards PMS. The diagnostic criteria is presence of at least one of the six affective and somatic symptoms reported five days before the onset of menses in prior three cycles and end within four days of the onset of menses[11]. This disorder has become a significant public health problem and particularly common in young girls[12]. The educated women reported mostly due to increased level of awareness[13]. Prevention of PMS is possible through lifestyle adjustments, medicines, vitamins and minerals, plenty of high-protein foods and whole grains, eating small and frequent meals, reducing caffeine and salt intake. Other preventive supportive remedies include exercise for about 30 minutes a day, enough sleep, measures to reduce stress, such as massage, meditation. It is also very helpful if smoking is quitted[14]. Females are a vital component of society and play an important role in family unit. Any condition such as PMS will have effect on her family, social and professional life. Despite the high prevalence and importance of PMS this problem has not received much attention in the past. Researches done are limited to certain social groups. In Pakistan situation is much worst as almost 50% of the population comprise of females but due to social and cultural limitations this topic has not been discussed openly. Therefore, in this study we have focused on determining prevalence and knowledge regarding its prevention among the young females so that future interventions can be formulated.

## MATERIAL AND METHODS

A cross sectional study was conducted at Foundation University Medical College from June 2017 to August 2017. Ethical code of conduct was strictly followed. A purposive sample of 359 female medical students was taken. Unmarried students were included and those having medication for psychological problems were excluded. Students of final year MBBS were also excluded as their clinical knowledge might have affected their responses. Informed consent was taken. Privacy was maintained and data kept confidential. Sample size was calculated by online sample size calculator for prevalence studies (SSCPS version 1.0.01xls) for infinite population, estimated prevalence taken as 0.37[1] with $p$-value<0.05 and confidence level of 95%. A self-structured questionnaire was used to collect the responses. Those who did not return

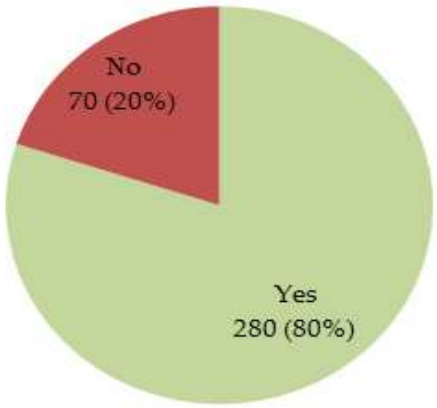


**Figure-1: Prevalence of Premenstrual Syndrome among the medical students (n= 350).**

the questionnaire were not included in the study. Data was collected on variables pertaining to demographic characteristics, presence of PMS, knowledge of respondents regarding PMS, its prevention, physical, psychological and behavioral symptoms etc. In this study operational definition of respondents having PMS was taken as "medical students who had at least one of the somatic symptoms and one of the psychic symptoms, at least 5-7 days before the menstrual cycle, in more than three cycles and disappearance of these symptoms with the onset of menstruation". Data was entered into SPSS version 20 software for analysis, descriptive statistics was applied and frequencies were computed for the various variables. Mean and standard deviation was calculated for age of the respondents. Cross tabulation between independent variable of knowledge regarding prevention of premenstrual syndrome and dependent variable of prevalence of premenstrual syndrome was done. Pearson's Chi square test was applied to see the association. Cochran test of conditional independence was also applied to see the conditional association between these variables at $p$-value < 0.05. Results were presented in the form of text, frequency tables, bar chart and pie chart.

## RESULTS

Response rate was 97.5% as out of 359, 350 responded and 9 did not return the questionnaires. Mean age of respondents was 20.9 years ± 1.7. The study result showed that 280 (80%) of the study population had PMS (fig-1). Out of these 280 respondents, 266 (95%) experienced physical changes while 210 (75%) psychological and 120 (43%) experienced behavioral changes in the premenstrual period. Physical changes were assessed on basis of presence of bloating, breast tenderness, tiredness, joint and muscle pain, headache and weight gain. While psychological changes were assessed on presence of anxiety, feeling of guilt, tearfulness, change in sleep pattern and depression. Behavioral changes were assessed on the basis of social withdrawal and effect on academic performance (table). Regarding prevention 250 (71.5%) did not have knowledge regarding its prevention while knowledge was found in 100 (28.5%) (fig-2). Among these respondents 50 (50%) were of the opinion that PMS can be prevented by home remedies, 20 (20%) by medications and 30 (30%) with supportive measures like sleep, diet, exercise, meditation, rest and reassurance etc. Statistically significant association was found as $p$-value 0.00 of Pearson Chi Square 35 at df 1 was less than 0.05. On

**Table: Physical, psychological and behavioral changes among the respondents experiencing PMS (n=280).**

| | |
|---|---|
| **Physical Changes 266 (95%)** | |
| Breast tenderness | 159 (60%) |
| Headache | 106 (40%) |
| Joint and muscle pain | 80 (30%) |
| Bloating | 53 (20%) |
| Weight gain | 53 (20%) |
| **Psychological changes 210 (75%)** | |
| Depression | 76 (36%) |
| Anxiety | 63 (30%) |
| Change in sleep pattern | 53 (25%) |
| Feeling of guilt | 42 (20%) |
| Tearfulness | 42 (20%) |
| **Behavioral changes 120 (43%)** | |
| Effect on Academic Performance | 88 (76%) |
| Social withdrawal | 56 (46.7%) |

application of Cochran test of conditional independence, significant conditional association was found between the independent variable of knowledge regarding prevention of premenstrual syndrome and dependent variable of prevalence of PMS, as the *p*-value of 0.000 was <0.05.

## DISCUSSION

Out of 350 study population, 280 (80%) had PMS, this result appears to be similar with a study conducted at Rahim Yar Khan[15] as the prevalence of PMS was 84% but the study group included 26% of house wives and working women while the students were 74%. Among these students, PMS was found in 62%. In our study whole of the study population was of students. Similarly 74% of the respondents in the reference study were unmarried whereas in our study only unmarried were included. The mean age of the study group was similar 20.9 ± 1.7 years[15]. In another study of Isra University Hyderabad, frequency of PMS (81.25%) and mean age 26.83 ± 6.32 years of the students was similar to our result[16]. The results of our study revealed that out of 280 respondents who had PMS, 266 (95%) experienced physical changes while 210 (75%) psychological and 120 (43%) experienced behavioral changes which are not comparable with the reference study as the frequency of physical changes was 54.78%, psychological 43.97% and social symptoms was 4.29% this difference might be attributed to the education of the respondents as our study group comprised of only medical students[15]. Another study conducted in Ethiopia stated that 150 (86.1%) subjects reported to experience the signs and symptoms of PMS[17]. This similarity is due to the fact that up to 95% of all women of reproductive age experience PMS[9]. This higher prevalence may be because of less strict criteria for PMS assessment of the study group and may also be due to the reason that our study population was medical students who being more knowledgeable were able to appreciate and discuss the changes.

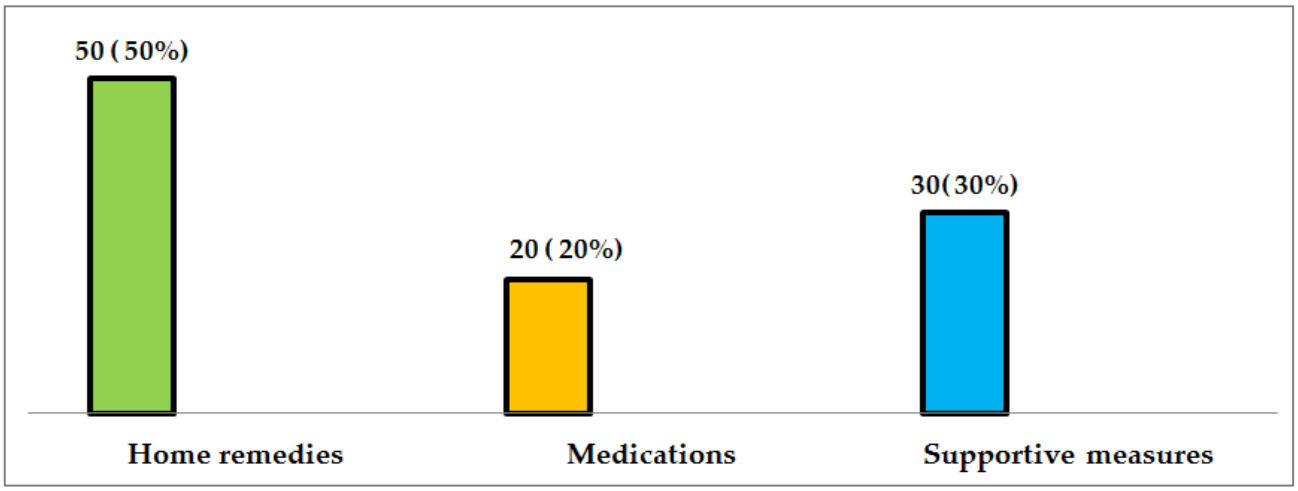


**Figure-2: Knowledge regarding prevention of PMS among the respondents who are of the opinion that it can be prevented (n=100).**

According to our study among the physical symptoms, most common symptoms experienced was breast tenderness 60%, joint or muscle pain 30%, bloating 20%, weight gain 20% and headache 40% when compared with another study conducted among university students of Malaysia showed that breast tenderness (67.9%) was similar but not the most common physical symptoms as this were backache (78.9%), fatigue (67.5%) in this study but can't be compared as this was not assessed in our study[18]. Regarding psychological symptoms, anxiety, feeling guilty tearfulness, change in sleep pattern and depression were 30%, 20%, 20%, 25% and 35%

respectively which is contradicting with study conducted among university students of Iran showing anxiety (70%), tiredness (84%), depressed mood (72.3%), mood changes (70.3%) and sleep problems (66%)[18], this difference may be due to the fact that we excluded those respondents from our study who had any known psychological problems or were on psychotic drugs. According to our study social withdrawal was 46% which is comparable with another study reporting 40.5% has impaired interaction with their friends[19]. The small difference might be due to socio cultural difference among compared populations. Effect on academic performance as stated by our study population with PMS, was 76% which is more as compared with another study stating that 48% of the participants reported academic performance impairment[20]. The difference may be because of difference in educational subjects of both the groups.

Regarding prevention of PMS, majority 250 (71.5%) did not have knowledge regarding its prevention while it was found only in 100 (28.5%). Half of them were of the opinion that it can be prevented by home remedies and 30% said by rest and reassurance and only 20% said medications can prevent PMS. These results are not consistent with study conducted at Rahim Yar Khan which shows a relatively larger percentage (46%) had knowledge regarding its prevention and 26 (8.7%) of respondents with PMS, used home remedies for relief, 112 (37.3%) took medication. As compared to our study, relatively larger respondents were using medications as compared to home remedies[15]. This difference may be because of the age group ie 16-40 years and various social groups of the respondents. In another study conducted in India, results were comparable as 78% of the students had poor knowledge regarding its prevention by life style modifications[21].

## CONCLUSION

Premenstrual Syndrome was found in majority of the students while knowledge about its prevention was low. Its effect on academic performance was agreed by majority of students. Awareness activities should be undertaken about the syndrome and its prevention. The subject should be given importance especially in the curriculum of medical education.

## LIMITATIONS OF THE STUDY

Our study had certain limitations which include limited time duration, non probability sampling technique. The study could have been done on different settings with different study groups which could have generated a comparison.

## ACKNOWLEDGEMENT

Contributions of Ammara, Amber, Maria, Afeefa and Nadia in data collection of this study are hereby acknowledged.

## CONFLICT OF INTEREST

This study has no conflict of interest to declare by any of the authors

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