Premenstrual Syndrome and Its Effects

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Abstract
Background: The premenstrual syndrome (PMS) is particularly common in the younger age groups and, therefore represents a significant public health problem in young girls. This study aims to estimate the prevalence of PMS, and its effects.

Materials and Methods: Unmarried medical students aged 18-25 years with regular menstrual period for the last 06 months were recruited by convenience sampling. The study employed a pretested, self-administered questionnaire. The questionnaire included four sections; demographic data, menstrual features, a section on symptoms and another section dealing with the effects of PMS.

Results: Prevalence of premenstrual syndrome was found to be 47%. Among the somatic symptoms breast tenderness was the common symptom in 26% subjects and among the behavioural symptoms irritibility is the commonest symptom in 26.5%. PMS was significantly associated with dysmenorrheal (P=0.00) and positive family history (P=0.01). Statistical significant differences was found between students with PMS and those without PMS regarding effect of premenstrual period on student's overall academic life (p=0.000), daily activities (p =0.000) and sleep rhythm(p =0.001).Data was analysed using percentages, Chi-squares.

Conclusion: Premenstrual syndrome is a common problem in young girls which adversely affects their educational performance and emotional well-being.

Keywords: pms, medical students, effects.

Introduction
Millions of women during their reproductive years are affected by premenstrual syndrome (PMS)¹. Premenstrual disorders are characterized by the cyclical recurrence of a variable constellation of physical, psychological, and behavioural symptoms which appears in the luteal phase and subsides with the onset of menstrual flow. It is a debilitating condition, causing social and occupational impairment in the lives of affected women comparable to that associated with major depressive disorder and with a burden of disease and disability adjusted life years lost on a par with major recognized disorders. Hence, the quality of life as well as economic implications of PMS should not be overlooked².

The common symptoms of PMS include breast tenderness, body aches, headache, bloating, sleep disturbances, appetite change, poor concentration, decreased interest, social withdrawal, irritability,
mood swings, anxiety/tension, depression, and feeling out of control. Of these, six symptoms identified as core symptoms suggesting that clinical diagnosis of PMS can be developed around a core symptom group. The identified core symptoms are: anxiety/tension, mood swings, aches, appetite/food cravings, cramps, and decreased interest in activities. Although these symptoms are diverse and may be unrelated, their common factor is the consistency in which they appear during each menstrual cycle and the way they speedily resolve with the onset of menses. The morbidity associated with PMS is because of severity of symptoms, chronicity, the resulting emotional distress or impairment in work, relationships, and activities. The level of impairment of PMS is significantly higher than community norms on assessment by standard measures. Women with PMS report significant impairment in personal relationships, compromised work levels and increased absence from work, school, or college.

Materials and Methods
A cross-sectional study designed to assess the Premenstrual syndrome and its effects was carried out over 200 nursing and medical students July 2017 to Dec 2017. Participants were asked to indicate (yes’ or ‘no) whether a premenstrual symptoms interfere with work, relationships with co-workers, family members, friends, social and academic life. unmarried medical students at the college of Medicine aged 18-25 years old , after menarche by at least one year, with regular menstrual period for the last 6 months who agreed to participate in the study were the target group. Students with irregular menstrual cycle, current major medical and psychological problems, those receiving hormonal therapy and experiencing a catastrophe shortly before or during the study were excluded from the study. The students who met the inclusion criteria were explained about the study objectives and participants obligations to fill the self-administered questionnaires for at least three consecutive menstrual cycles. If they did not experience any symptoms during the first three months, the students were allowed to record for another three month. The questionnaire included four sections; demographic data, menstrual features, a section on symptoms and another section dealing with the effects of Premenstrual syndrome. Premenstrual syndrome was diagnosed according to American college of obstetricians and gynecologists which diagnose PMS as having physical and emotional symptoms 5 days before the menstrual period for at least 3 successive cycles and within 4 days after the beginning of the menstrual period that interfere with normal daily activity. Full consent was obtained from all of the participants prior to their participation.

Results
The prevalence of PMS among the studied group was 47% (Table 1). Among those with PMS, the mean aged was 20.33±1.57, where the age at menarche was 11-15 years in 31% and 16-19 years in 32%. The mean menstrual period duration was less than 5 days in 27% subjects and greater than 5 days in 25% subjects. Girls having PMS reported significant higher prevalence of dysmenorrhea (55.3%) and positive family history of PMS 57.4%) than those without PMS Table (2). PMS was not found to be statistically associated with age in years, age at menarche duration of cycle. PMS was significantly associated with dysmenorrheal (P=0.000) and positive family history of PMS (P=0.01). Among the the somatic symptoms breast tenderness was most common symptom in 26% of pms subjects and among the behavioural symptoms irritilibilty was present in 26.5% (Table 3) subjects. Stastical significant differences was found between students with PMS and those without PMS regarding effect of premenstrual period on student's overall academic life (p=0.000), daily activities (p =0.000) and sleep rhythm(p =0.001)( Table 4).
Table 1 Number and percentage distribution of PMS among the studied sample

| PMS       | Number | Percentage |
|-----------|--------|------------|
| Present   | 094    | 047%       |
| Absent    | 106    | 053%       |
| Total     | 200    | 100%       |

Table 2 Comparison between students with and without PMS regarding demographic and menstrual characteristics

| Parameter                        | With PMS       | Without PMS      | P value   |
|----------------------------------|----------------|------------------|-----------|
| **Age in years**                 | 20.33 ± 1.57   | 20.27 ± 1.66     | p= 0.83   |
| **Age at menarche**              |                |                  |           |
| 11-15 years                      | 62             | 80               | chi-square=2.19 |
| 16-19 years                      | 32             | 26               | p value=0.13 |
| **Duration of cycle**            |                |                  |           |
| less than 5 days                 | 54             | 76               | chi square=8.7 |
| greater than 5 days              | 50             | 30               | p value=0.003 |
| **Dysmenorrhoea (NO and %)**     |                |                  |           |
| Yes                              | 52             | 16               | chi square=35.92 |
| No                               | 42             | 90               | p value = 0.000 |
| **Family history of pms (No and %)** | 54             | 30               | p= 0.01   |

Table 3 Symptoms of premenstrual syndrome

| symptom                             | PMS         | Without PMS         |                       |
|-------------------------------------|-------------|---------------------|-----------------------|
| Abnormal bloating                   | 25          | 26%                 |                       |
| Breast tenderness                   | 22          | 23%                 |                       |
| Body aches                          | 16          | 17%                 |                       |
| Back pain                           | 20          | 21%                 |                       |
| Upper thigh pain                    | 4           | 4.2%                |                       |
| Headache                            | 5           | 5.3%                |                       |
| Swelling of extremities             | 2           | 2.1%                |                       |
| Anxiety                             | 15          | 15.9 %              |                       |
| Mood changes                        | 15          | 15.9%               |                       |
| Angry outbursts                     | 5           | 5.3%                |                       |
| Irritability                        | 25          | 26.5%               |                       |
| Confusion                           | 3           | 3.1%                |                       |
| Decreased concentration             | 5           | 5.3%                |                       |
| Change in appetite                  | 6           | 6.3%                |                       |
| Withdrawal of social activities.    | 20          | 21%                 |                       |

Table 4 Effects of premenstrual period on students’ academic and social life

| variable                        | Students with pms | Students without pms | Chi-square | P value |
|---------------------------------|-------------------|----------------------|------------|---------|
| Effect on overall academic life |                   |                      |            |         |
| Yes                             | 60                | 11%                  | 11         | 10%     | 62.17    | 0.000    |
| No                              | 34                | 95%                  | 95         | 90%     |          |          |
| Effect on daily activites       |                   |                      |            |         |
| Yes                             | 70                | 59.3%                | 27         | 82.5%   | 47.88    | 0.000    |
| NO                              | 24                | 40.6%                | 79         | 17.5%   |          |          |
| Effect on sleep                 |                   |                      |            |         |
| YES                             | 13                | 83.7%                | 2          | 67.5%   | 10.24    | 0.001    |
| NO                              | 81                | 16.2%                | 104        | 32.5%   |          |          |
Discussion
Premenstrual syndrome is a common disorder of young and middle-aged women characterized by cyclic occurrence in the luteal phase of the menstrual cycle accompanied by distressing physical, psychological and behavioral changes of sufficient severity to result in deterioration of interpersonal relationships and interference with normal activities; which remit upon onset or immediately after menstruation. In this study, a total of 200 students were enrolled with age 18-25 year. The prevalence of PMS among the participants was 47%. Majority of the PMS diagnosed students had their first menstrual flow between the ages of 11 to 15 years and had menstrual cycles ranging from 21-30 days. In a recently published meta-analysis, the PMS prevalence was reported as 47.8% for all studied groups which are similar to our results. The Prevalance of 51% was found among medical students aged 18-25 years at insra University Hospital, Hyderabad, Sindh, Pakistan which is close to our range. This study is inconsistent with the study conducted on 134 volunteer nurses in Turkey in which prevalence of pms was 38. In the current study, the most frequently reported symptom was irritability (26.5%), which was also reported in previous studies. In terms of symptoms affecting social activities and relationships, women with PMS studied here showed significantly greater impairment than the non-PMS. Significant relationship of PMS with dysmenorrhea and family history of PMS was found similar to other studies. The variations of results from various studies are due to limitations and differences in the definition of PMS, standards and methods of data collection, sampling technique and type of patient population studied.

Conclusion
The findings of this study suggest that frequency and morbidity of PMS is relatively common in young girls. As it adversely affects the educational, social and emotional well-being, means should be adopted to reduce the incidence of this disorder

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References
1. Nesreen Muhtaseb, Afnan Al-Raddadi, Imtinan Albukhari, Eman Fadil, Nehal Alghamdi, Maryam Fahmie, Duoaa Abdoh, Dareen Al-Hendi. Prevalence Severity and Impacts of Premenstrual Syndrome among Female Medical Students International Journal of Academic Scientific Research 2015.Volume 3, Issue 4, PP 134-142.
2. Manal Ahmad Al-Batanony and Sultan Fahad Nohair. Prevalence of Premenstrual Syndrome and Its Impact on Quality of Life among University Medical Students. public Health Research 2014. 2167-7247 ; 4(1): 1-6.
3. Freeman EW, Halberstadt SM, Rickels K, Legler JM, Lin H, Sammel MD: Core symptoms that discriminate premenstrual syndrome. J Womens Health 2011, 20(1): 29–34.
4. Eyob Azaria, Meron Mehari, Nahom Kiros, Filmon Woldu, Awet Tesfay, Fisseha Solomon, Furtuna Weldebruk. The Prevalence and Effects of Premenstrual Syndrome among Female Health Science Students. European Journal of Clinical and Biomedical Sciences 2016 Volume 2, Issue 1, Page 1-5
5. Chintan Madhusudan Raval, Bharat Navinchandra Panchal, Deepak Sachidanand Tiwari, Ashok Ukabhai Vala, and Renish Bhupendrabhai Bhatt. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder among college students of Bhavnagar, Gujarat. J Psychiatry.2016 ; 58(2): 164–170
6. Borenstein JE, Dean BB, Endicott J, Wong J, Brown C, Dickerson V, Yonkers KA: Health and economic impact of the premenstrual syndrome. J Reprod Med 2003, 48:515-524.

7. Hammam RAM, Zalat MM, Sadek SM, Soliman BS, Ahmad RA, Mahdy RS, and Hardy. Premenstrual Syndrome And Work Among Female Academic Teaching Staff In A Governmental Faculty Of Medicine In Egypt. Egyptian Journal of Occupational Medicine, 2017; 41 (1) :35-53

8. A DM, Sattar K. Epidemiology of Premenstrual Syndrome (PMS)-A Systematic Review and Meta-Analysis Study. J Clin Diagn Res. 2014 Feb;8 (2):106-9.

9. Nusrat Nisar, Nishat Zehra, Gulfareen Haider, Aftab Afroz Munir and Nisar Ahmed Sohoo. Frequency, Intensity and Impact of Premenstrual Syndrome in Medical Students. Journal of the College of Physicians and Surgeons Pakistan 2008, Vol. 18 (8): 481-484

10. Effect of Premenstrual Syndrome on Work-Related Quality of Life in Turkish Nurses. Hatice Kahyaoglu Sut and Elcin Mestogullari Saf Health Work. 2016 Mar; 7(1): 78–82.

11. Steiner M, Macdougall M, Brown E. The premenstrual symptoms screening tool (PSST) for clinicians. Arch Womens Ment Health. 2003;6:203–9.

12. Chintan Madhusudan Raval, Bharat Navinchandra Panchal, Deepak Sachidanand Tiwari, Ashok Ukabhai Vala, and Renish Bhupendrabhai. public Health Research 2016 Vol. 18 (8): 488-490

13. Rizk DE, Mosallam M, Alyan S, Nagelkerke N. Prevalence and impact of premenstrual syndrome in adolescent school girls in United Arab Emirates. Acta Obstet Gynecol 2006; 85: 589-98.