

Prevalence, Severity, and Impacts of Premenstrual Syndrome among Female Medical Students at Taibah University in Saudi Arabia

Nesreen Muhtaseb, Afnan Al-Raddadi, Imtinan Albukhari, Eman Fadil, Nehal Alghamdi, Maryam Fahmie, Duoaa Abdoh, Dareen Al-Hendi

College of Medicine, Taibah University, KSA

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 determine its severity and impacts among female medical students at Taibah University in AlMadina Al-Munawarah city, Saudi Arabia.

Methods: This is cross sectional study, two different questionnaires covering American College of Obstetrics and Gynaecology (ACOG) criteria to diagnose PMS, demographic & reproductive factors, physical activity have been distributed over all 1st and 2nd year medical female students at Taibah University, where 81.2% have returned completed questionnaires.

Results: Premenstrual syndrome was prevalent in 56.4% of participating students. No significant differences ($p < 0.05$) have been found between students with PMS and those without PMS regarding effect of premenstrual period on student's academic & social life (perceived effect on overall academic life, lectures attendance, grades, social activities, and sleep rhythm), however students with PMS perceived effect of premenstrual period on overall academic life more than those with no PMS (40.9% vs. 35.3%).

Conclusion: we concluded that although PMS prevalent among medical students at Taibah University in Saudi Arabia, it is not a significant problem.

I. Introduction

Premenstrual syndrome (PMS) is the name given to a collection of physical and psychological symptoms that some women experience during the late luteal phase of each menstrual cycle. It has a wide variety of symptoms, including mood swings, tender breasts, food cravings, fatigue, irritability and depression [1].

An estimated 3 of every 4 menstruating women experience some form of premenstrual syndrome. These problems tend to peak during female late 20s and early 30s. Symptoms tend to recur in a predictable pattern. Yet, the physical and emotional changes the female experience with premenstrual syndrome may be particularly intense in some months and only slightly noticeable in others. Treatments and lifestyle adjustments can help in reduction or management of the signs and symptoms of premenstrual syndrome [1].

Various biosocial and psychological causes have been proposed as the cause of the premenstrual syndrome, including abnormal serotonin function, presence of progesterone, altered endorphin modulation of gonadotrophin secretion, exercise habits, smoking, use of alcohol,

altered transcapillary fluid balance, and a diet rich in beef or caffeine containing beverages. Studies have emphasized the importance of examining the cultural context in menstrual experiences. One large multi-country study from 14 cultural groups and women from 10 countries identified different patterns of beliefs regarding interpretations and implications of menstruation reflecting socialization according to demographic variables [2].

The PMS is particularly common in the younger age groups and therefore represents a significant public health problem in young girls. The Saudi community is undergoing a rapid and economic change. It has a young population structure, with 60% of Saudis fewer than 30 years of age, and 47% under 15. However a little is known about the extent and severity of premenstrual syndromes in Saudi young women. Also, a minority of women with menstrual problems had sought health care and menstruation was revealed to be a highly personal and secretive topic in this population [3-5].

This has motivated us to conduct the current study to get an overview of the prevalence of PMS among female medical students at Taibah University, who are liable to more stress than the general population, and determine its severity and impacts over the students' academic and social life.

II. Methodology

This cross sectional study has been conducted over 1st two academic years' female medical students at Taibah University in the duration from 1st September 2014 to end of November 2014, where 2 self administered questionnaires were distributed over all 1st two academic years' female medical students, the 1st was predesigned including socio-demographic data and assessing symptoms and impacts of premenstrual syndrome (PMS) over the student, and the 2nd questionnaire is for estimating the severity of the symptoms of PMS which is a preformed scale by Allen Lawrence [6]. However only 81.2% responded and returned completed questionnaires.

PMS 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.

An informed verbal consent has been taken from all participants in the study. Pilot study has been done to check feasibility of study and test questionnaires.

Statistical analysis: Data has been collected and entered to the computer using SPSS (Statistical Package for Social Science) program for statistical analysis, (version 13; Inc., Chicago, IL). Data from questionnaires has been entered as numerical or categorical, as appropriate. Two types of statistics have been done: 1) Descriptive statistics; where quantitative data was shown as mean, SD, and qualitative data was expressed as frequency and percent. 2) Analytical statistics: where Chi-square test was used to measure association between qualitative variables. P-value was considered statistically significant when it was less than 0.05.

III. Results

This study has been conducted over 117 female medical students at Taibah University, their mean age was 19.87 ± 0.83 , nearly have of them (50.4%) were from 1st academic year, majority reported moderate socioeconomic standard , 94.9% live with their families, and 96.6% were single Table 1.

Table 1: Socio-demographic data of the studied group of students.

Variables	Mean±SD	
Age	19.87 ± 0.83	
Weight	158.42 ± 5.42	
Height	1.56. ± 10.35	
Academic year: - 1 st academic year - 2 nd academic year	Number (n=117)	Percentage
	59 58	50.4 49.6
Perceived socioeconomic standard: - High - Moderate - low	16 100 1	13.6 85.5 0.9
	Living with:	
	- Family - Friends - University house	111 5 1
Marital status: - Single - married	113 4	96.6 3.4

Table 2 shows that more than half of the participants reported having regular menstruation (62.9%), 56.4% met the criteria of having PMS, 59% had 1st degree family history of PMS, 53% took medical treatment for PMS, while only 8.5% had history of seeking medical advice for PMS.

Table 2: Reproductive, family, and medical histories of the studied group of students.

Variables	Number (n=117)	Percentage
Having offspring:		
- Yes	4	3.4
- no	113	96.6
Experienced abortion :		
- Yes	1	0.9
- no	116	99.1
Having regular menstruation:		
- Yes	73	62.4
- no	44	37.6
Diagnosed as having PMS*:		
- Yes	66	56.4
- no	51	43.6
Family history of PMS in 1st degree relatives:		
- Yes	69	59.0
- No	48	41.0
History of taking medical treatment for PMS:		
- Yes	62	53.0
- No	55	47.0
History of seeking medical advice for PMS:		
- Yes	10	8.5
- no	107	91.5

*PMS: premenstrual syndrome.

There were no significant differences between students diagnosed as having PMS & those who were free of PMS ($p > 0.05$) regarding material state, presence of family and/or friendship problems, presence of academic problems, the regular practice of physical exercise, and body mass indices. However, students with PMS reported having family problems and academic problems more than students with no PMS (13.6% vs. 9.8%), (40.9% vs. 35.3%), respectively Table 3.

Table 3: Risk factors of premenstrual syndrome among studied group of students.

Variables	Students with PMS (n = 66)		Students without PMS (n = 51)		Total (n = 117)		Chi – square	P value
	n	%	n	%	n	%		
Perceived effect on overall academic life:								
- yes	27	40.9	18	35.3	45	38.5	0.38	0.54
- no	39	59.1	33	64.7	72	61.5		
Effect on lecturers' attendance:								
- yes	32	48.5	23	45.1	55	47.0	0.13	0.72
- no	34	51.5	28	54.9	62	53.0		
Perceived effect on grades:								
- yes	12	18.2	11	21.6	23	19.7	0.21	0.65
- no	54	81.8	40	78.4	94	80.3		
Effect on social activities:								
- yes	33	50.0	24	47.1	57	48.7	0.10	0.752
- no	33	50.0	27	52.9	60	51.3		
Effect on sleep rhythm:								
- yes	45	68.2	35	68.6	80	68.4	0.00	0.959
- no	21	31.8	16	31.4	37	31.6		

*BMI: Body mass Index, **PMS: Premenstrual syndrome

The results of this study revealed no significant differences between students with PMS and those without PMS regarding effect of premenstrual period on student's academic & social life (perceived effect on overall academic life, lectures attendance, grades, social activities, and sleep rhythm), however students with PMS perceived effect of premenstrual period on overall academic life more than those with no PMS (40.9%vs. 35.3%), respectively Table 4.

Table 4: Effects of premenstrual period on students' academic and social life.

Variables	Students with PMS (n = 66)		Students without PMS (n = 51)		Total (n = 117)		Chi – square	P value
	n	%	n	%	n	%		
Perceived effect on overall academic life:								
- yes	27	40.9	18	35.3	45	38.5	0.38	0.54
- no	39	59.1	33	64.7	72	61.5		
Effect on lecturers' attendance:								
- yes	32	48.5	23	45.1	55	47.0	0.13	0.72
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Perceived effect on grades:								
- yes	12	18.2	11	21.6	23	19.7	0.21	0.65
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Effect on social activities:								
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- no	33	50.0	27	52.9	60	51.3		
Effect on sleep rhythm:								
- yes	45	68.2	35	68.6	80	68.4	0.00	0.959
- no	21	31.8	16	31.4	37	31.6		

The severity of PMS ranged among those diagnosed as having PMS, where 28.8% were of borderline degree, 25.8% were of mild degree, 22.7% were of moderate degree, 16.6% were of sever degree, 6.1% were of disabling degree Fig1.

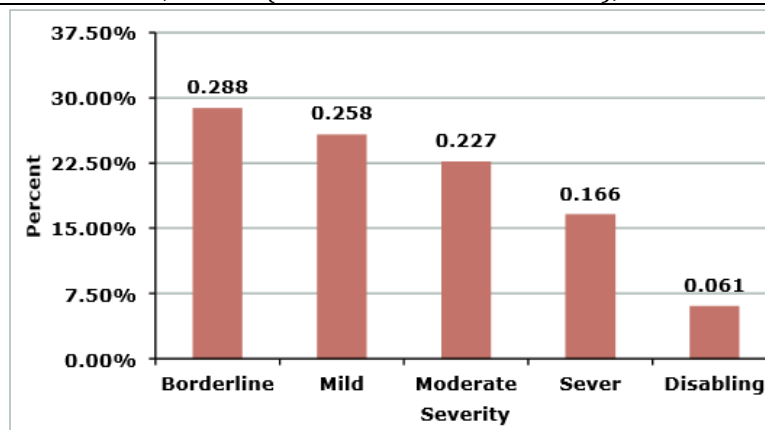


Figure 1: Severity of Premenstrual Syndrome (PMS) among students diag-nosed as having it.

IV. 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 inter- personal relationships and / or interference with normal activities; which remit upon onset or immediately after menstruation [7-9].

This study has been conducted to estimate the prevalence of Premenstrual syndrome among female medical students at Taibah University and determine its severity and impacts over the students' academic and social life.

The results from the self-reported questionnaire indicated that PMS is common among medical female students at Taibah University. Nearly half (56.4%) of the respondents have been diagnosed as having PMS symptoms.

This result is consistent with previous research studies showing that 25 to 95% of women suffer from PMS [10]. A percent of 86% have been reported by a study conducted in female undergraduate students of the University of Calabar in Nigeria [11], and a finding of 99.1% was observed by a study conducted in students of Jimma University in Ethiopia [12]. These findings are based on wider population i.e. both studies were done among students aged between 16-31 years and 17-38 years, respectively. However, our study included medical students aged between 19-21 years. Estimates of PMS vary in the research literature because of the differences in the used instruments, symptom's patterns, and the use of prospective or retrospective protocols. In addition, the research literature does not agree as to the number of symptoms that must be present to warrant a diagnosis of PMS.

In the current study, the severity of symptoms among students diagnosed as having PMS varied, as 28.8% were of borderline degree, 25.8% were of mild degree, 22.7% were of moderate degree, 16.6% were of severe degree, and only 6.1% were of disabling degree.

This results is not so far from results of a study conducted on young females in Turkey within age group 10-17 years, where 49.5% had mild, 37.1% had moderate and 13.4% had severe premenstrual syndrome [13].

There was no significant association between the prevalence of PMS and selected variables like lectures attendance ($p > 0.05$). This is in contrary to the findings of a study conducted in Jimma University in Ethiopia, which reported that class absenteeism was significantly

associated with the prevalence of PMS [12].

There was no significant association between the prevalence of PMS and perceived effect on grades ($p > 0.05$). This is in contrary to the study finding conducted in Jimma University, which reported that low-grade scoring was significantly associated with the prevalence of PMS [12].

No significant differences have been found between students with PMS and those without PMS regarding effect of premenstrual period on student's academic & social life, this could be due to the fact that our study population are medical students who have kind of awareness about PMS and ways of early management, so are not liable to adverse effects of PMS as other females in general population.

V. Limitations

This study was limited to Taibah university students in Almadinah Almonawwarrah city and does not represent the whole female university students population in Saudi Arabia. Our study also included a highly selective sample comprising of medical students which was also small in size.

Another limitation is that the topic is sensitive for the Saudi culture, some participants might not want to reveal their real personal problems.

VI. Conclusion

The study reported a prevalence of PMS of 56.4% in academic years' medical students of the University of Taibah, 28.8% of them were of borderline degree in severity. Premenstrual symptoms didn't significantly affect students' academic and social life.

VII. Recommendations

1. A programmed health education regarding identification of signs and symptoms of pre-menstrual syndrome, its treatment and management could be arranged by health professionals to all university students.
2. As part and parcel of the overall health service, appropriate medical treatment, counseling and relaxation techniques should be provided to the affected students.

VIII. Future research

Future research should be aimed at various populations within Saudi Arabia that include non-university and minority populations.

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