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Research Article

A Study on Premenstrual Syndrome among Female Students of a Private University of Delhi NCR

Surbhi Teotia[1] , Sayantika Kumari[1], Neha Taneja[2*], Karuna Nidhi Kaur[1], Aanchal Anant Awasthi[2], Rajiv Janardhanan[3]

[1]Student, Laboratory of Disease Dynamics & Molecular Epidemiology, Amity Institute of Public Health, Amity University, Uttar Pradesh, India

[2]Assistant Professor, Laboratory of Health Data Analytics & Visualization Environment, Amity Institute of Public Health, Amity University, Uttar Pradesh, India

[3]Director & Head, Laboratory of Disease Dynamics & Molecular Epidemiology, Laboratory of Health Data Analytics & Visualization Environment, Amity Institute of Public Health, Amity University, Uttar Pradesh, India

[*]Corresponding author: Neha Taneja, Assistant Professor, Laboratory of Disease Dynamics & Molecular Epidemiology, Laboratory of Health Data Analytics & Visualization Environment, Amity Institute of Public Health, Amity University, Noida, Uttar Pradesh, India; E-mail: ntaneja@amity.edu

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Abstract

Background: Premenstrual Syndrome (PMS) is one of the most common disorders of reproductive age. PMS is a set of physical and psychological symptoms that occurs during the luteal phase of menstrual cycle (14 days before menstrual period), resolved with the onset of menstruation and with a symptom-free interval afterwards.

Aim: To assess the knowledge, most commonly reported symptoms, effects on educational activities and interpersonal relationships, treatment options and attitude of female university students towards PMS.

Methods: This cross-sectional study was conducted among 130 female students of a Private University of Delhi

NCR. A pretested, self-administered questionnaire was used to collect the information. The data was compiled in Microsoft excel and analysed using SPSS 25 version. P-value <0.05 was considered statistically significant.

Results: The majority (80%) of female participants knew about PMS while only (43.8%) knew about PMDD. The most common affective and somatic symptoms among participants were irritability (74.6 %) and abdominal bloating (48.5%). More than half (53.8 %) of the female participants reported PMS impaired their College/work efficiency/ productivity and Concentration and (49.2 %) reported PMS impaired their Social life activities. The majority (90%) of female participants think that PMS is an important issue that should be discussed but (40.8%) did nothing to relieve their premenstrual symptoms. The female participants of age group between 23 and 30 years showed higher proportion of knowledge of PMS (n=52, 89.7 %) when compared to female participants of age group between 17 and 22 years and this association was statistically significant (P<0.05). The female participants who did exercise showed higher proportion of knowledge of PMS (n=82, 84.5 %) when compared to female students who did not exercise and this association was statistically significant (P<0.05).

Conclusion: Based on the findings of the present study, it can be said that: PMS is a common problem affecting the educational activities and interpersonal relationships of females significantly. Despite of the positive response of female participants towards PMS in our study, there is lack of knowledge about the necessity to consult a doctor or seek treatment for their symptoms.

Keywords: Premenstrual Syndrome; Female Students; Private University

1. Introduction

Premenstrual Syndrome is one of the most common disorders of reproductive age that can be seen in different intensities in 85-90 % of women [1]. It refers to the emotional, behavioral and physical changes that occur in the late luteal phase of a woman's menstrual cycle (one to two weeks before her periods) [2-6]. Symptoms usually last for six days and are resolved with the onset of menstruation, with a symptom-free interval afterwards [2]. Though more than 200 symptoms have been known to occur, the most frequently occurring symptoms include headache, fatigue, abdominal bloating, backache, breast tenderness, fatigue, anxiety, irritability, social withdrawal and depression [7-11]. Premenstrual Dysphoric Disorder (PMDD) is a severe form of Premenstrual Syndrome (PMS), which leads a significant loss of function due to unusual severe symptoms that occurs in 2–6% of women [12]. The underlying cause(s) of PMS remain unclear. It is believed that the trigger behind PMS is multi-factorial in nature, with perturbations in reproductive hormone levels being one of the major causes [13]. Epidemiological Surveys have estimated that the frequency of PMS symptoms is quite high about 80-90 % and about 5 % of women experience severe symptoms that the symptoms interfere with their daily activities [14].

The PMS symptoms could impact an individual's interpersonal relationships, social interactions, occupational activities and productivity for her entire reproductive age life [15, 16]. Especially for young women, premenstrual symptoms can be related to academic performance impairments including poor grades [17] and absenteeism [18]. This disorder in young women is a significant public health problem, as increased incidence of depression and

anxiety disorders were found in women suffering with PMS, which could economically burden the society indirectly in the form of absenteeism at work, frequent hospitalization and suicides [19]. With this background the present study was conducted to assess the Knowledge, most commonly reported symptoms, impairments affecting educational activities and interpersonal relationships, treatment options, and attitude of female students towards PMS.

2. Materials and Methods

This cross-sectional study was conducted among 130 female students of a Private University of Delhi NCR. The inclusion criteria were female students of college of 17-30 years of age and exclusion criteria were students suffering from PCOD/PCOS. A pretested, self-administered questionnaire was used to collect the information. The questionnaire comprised of three parts. The first part included questions on Knowledge of PMS and PMDD, Demographic data and Menstrual History. The second part included questions on symptoms of PMS. The third part included questions about impairments, treatment options and attitude towards PMS. Symptoms of PMS were assessed according to American College of Obstetricians and Gynaecologists (ACOG) criteria [20]. The data was compiled in Microsoft excel and analysed using SPSS 25 version for various descriptive statistics and bivariate analysis. P-value <0.05 was considered statistically significant.

3. Result

The study included 130 participants. Bivariate analysis of association between Socio-Demographic variables and Menstrual Patterns and knowledge of PMS is presented in Table 1. Majority of female participants (55.4 %) belonged to age group 17 and 22 years.10.8 % of study participants were obese. Majority of them 89 (68.5 %) were UG students. Majority of them 79 (60.8 %) were from Outside Delhi. Considering the stay 47 (36.2 %) stay in home and 83 (63.8 %) stay in hostel. Majority of them 97 (74.6 %) were doing the exercise. Only 39 (30 %) of them were consuming coffee on daily basis. 57 (43.8 %) were consuming tea on daily basis. Considering the drinking alcohol 39 (30 %) of them were drinking alcohol. In Table 1 it was found that the female participants of age group between 23 and 30 years showed higher proportion of knowledge of PMS (n=52, 89.7 %) when compared to female participants of age group between 17 and 22 years and this association was statistically significant (P<0.05). The female participants of PG course showed higher proportion of knowledge of PMS (n=38, 92.7 %) when compared to female participants of UG course and this association was statistically significant (P<0.05). The female participants who did exercise showed higher proportion of knowledge of PMS (n=82, 84.5 %) when compared to female students who did not exercise and this association was statistically significant (P<0.05). No statistically significant association was observed with BMI, residence, current stay, coffee consumption on daily basis, tea consumption on daily basis and drinking alcohol.

Regarding the age at menarche majority 83 (63.8 %) of female participants had their menarche at the age of >12 years. Majority of them 112 (86.2 %) had their menstrual cycle of ≤ 35 days. Regarding the days of menstrual bleeding majority111 (85.5 %) of them had menstrual bleeding of ≤ 5 days. Majority of female participants 110 (84.6 %) had normal/light menstrual flow. Regarding the regularity of cycle majority of them 109 (83.8 %) had regular cycle. Only 11 (8.5 %) had family history of PMS. More than half 76 (58.5 %) of females suffer from

dysmenorrhea. In Table 1 it was also found that the female participants who had regular cycles showed higher proportion of knowledge of PMS (n=91, 83.5 %) when compared to female students who had irregular cycles and this association was statistically significant (P<0.05). No statistically significant association was observed with age at menarche, length of menstrual cycle, days of bleeding, amount of menstrual flow, Family history of PMS and dysmenorrhea. Knowledge of PMS and PMDD among study participants is presented in Figure1. 80% of study participants had knowledge of PMS and only 43.8% participants had knowledge of PMDD. The Premenstrual Symptoms according to ACOG criteria are presented in Figure 2. The most common affective symptoms among participants were irritability (74.6 %), angry outbursts (62.3 %) and anxiety (51.6 %). The most common somatic symptoms among participants were: abdominal bloating (48.5 %) and headache (40.8 %).

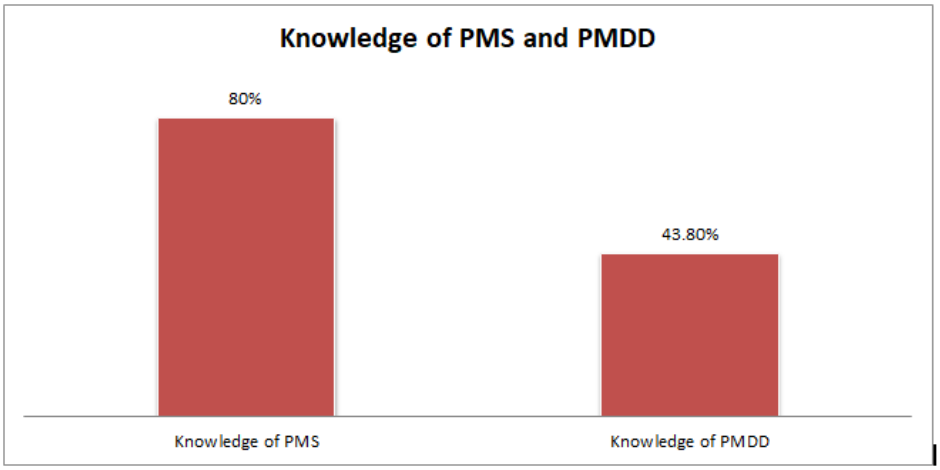
Effect of PMS on Educational activities and Interpersonal relationships and Treatments opted by female participants to relieve their premenstrual symptoms is presented in Table 2. Most frequent impairments seen in this study were: Concentration impairment (53.8), College/work efficiency/productivity impairment (53.8 %) and Social life activities impairment (49.2 %). Other impairments were: Home responsibilities impairment (46.9 %), Motivation impairment (46.9 %), Absenteeism from college (45.4 %), Relationship with friends/classmates/family impairment (42.3 %), Low scores/grades (25.4 %). The most frequent treatments opted by female participants were: Hot Pack (56.2 %), Traditional remedies (40.8 %) and (40.8 %) of female participants did nothing to relieve their premenstrual symptoms. Only (10.8 %) of female participants seeks gynecologist to relieve their symptoms. Use of painkillers (27.7 %), exercise/yoga (26.9 %), dietary supplements (26.2 %) and homeopathic medication (6.9 %) were less common among female participants in our study. Attitude of female participants towards PMS is presented in Table 3. Majority (90 %) of female participants think that PMS is an important issue that should be discussed, (84.6 %) of female participants want to talk to their family/spouse about PMS, (81.5 %) of female participants think that Menstrual leave should be an option at college/workplace and (72.3 %) of them were likely to consult a doctor for PMS.

Variables	**Frequency (%)**	**Knowledge of PMS (No) n=26 (%)**	**Knowledge of PMS (Yes) n=104 (%)**	**P-value**
Age				
17-22 years	72 (55.4)	20 (27.8)	52 (72.2)	0.014*
23-30 years	58 (44.6)	6 (10.3)	52 (89.7)	
BMI (kg/m2)				
Normal	78 (60.0)	13 (16.7)	65 (83.3)	0.075
Overweight	38 (29.2)	7 (18.4)	31 (81.6)	
Obese	14 (10.8)	6 (42.9)	8 (57.1)	
Course				
PG	41(31.5)	3(7.3)	38 (92.7)	0.014*
UG	89 (68.5)	23 (25.8)	66 (74.2)	
Residence				
Delhi	51 (39.2)	9 (17.6)	42 (82.4)	0.590
Outside Delhi	79 (60.8)	17 (21.5)	62 (78.5)	
Stay				
Home	47 (36.2)	9 (19.1)	38 (80.9)	0.855
Hostel	83 (63.8)	17 (20.5)	66 (79.5)	
Exercise				
No	33 (25.4)	11 (33.3)	22 (66.7)	0.027 *
Yes	97 (74.6)	15 (15.5)	82 (84.5)	

Consume Coffee on Daily basis				
No	91 (70.0)	22 (24.2)	69(75.8)	0.069
Yes	39 (30.0)	4 (10.3)	35 (89.7)	
Consume Tea on Daily basis				
No	73 (56.2)	15 (20.5)	58 (79.5)	0.860
Yes	57 (43.8)	11 (19.3)	46 (80.7)	
Drink Alcohol				
No	91 (70.0)	22 (24.2)	69 (75.8)	0.069
Yes	39 (30.0)	4 (10.3)	35 (89.7)	
Age at Menarche				
≤12 years	47 (36.2)	12 (25.5)	35 (74.5)	0.259
>12 years	83 (63.8)	14 (16.9)	69 (83.1)	
Length of Menstrual Cycle				
≤ 35 days	112 (86.2)	20 (17.9)	92 (82.1)	0.199
> 35 days	18 (13.8)	6 (33.3)	12 (66.7)	
Days of Bleeding				
≤5 days	111 (85.5)	23 (20.7)	88 (79.3)	0.763
>5 days	19 (14.5)	3 (15.8)	16 (84.2)	
Amount of Menstrual Flow				
Normal/Light	110 (84.6)	23 (20.9)	87 (79.1)	
Heavy	20 (15.4)	3 (15.0)	17 (85.0)	0.763
Regularity of Cycle				
Regular	109 (83.8)	18 (16.5)	91 (83.5)	0.035 **
Irregular	21 (16.2)	8 (38.1)	13 (61.9)	
Family History of PMS				
No	119 (91.5)	25 (21.0)	94 (79.0)	0.693
Yes	11(8.5)	1(9.1)	10 (90.9)	
Dysmenorrhea				
No	54 (41.5)	12 (22.2)	42 (77.8)	0.659
Yes	76 (58.5)	14 (18.4)	62 (81.6)	

*/**P<0.05 is considered statistically significant. PMS-Premenstrual Syndrome, * Chi-square P-value, ** Fisher's exact P-value

Table 1: Bivariate Analysis of association between Socio-Demographic Variables and Menstrual Patterns and Knowledge of PMS (n=130).



*PMS-Premenstrual Syndrome, PMDD-Premenstrual Dysphoric Syndrome

Figure 1: Knowledge of PMS and PMDD among study participants (n=130).

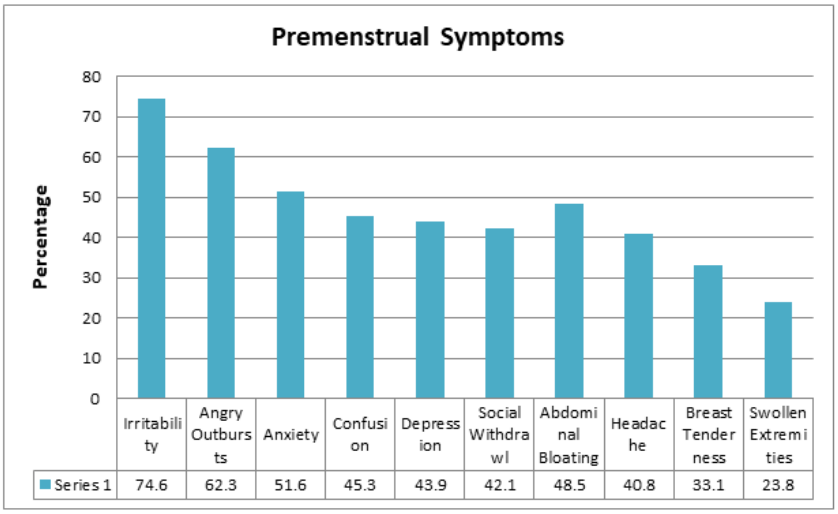


Figure 2: Premenstrual symptoms among study participants according to the American College of Obstetricians and Gynaecologists (ACOG) criteria (n=130).

Impairments	**n (%)**
Concentration impairment	70 (53.8)
College/Work Efficiency/Productivity impairment	70 (53.8)
Motivation impairment	61 (46.9)
Absenteeism from college	59 (45.4)
Low Scores/Grades	33 (25.4)
Social Life activities impairment	64 (49.2)
Home Responsibilities impairment	61 (46.9)
Relationship with Friends/Classmates impairment	55 (42.3)
Relationship with your Family impairment	55 (42.3)
Treatments Opted	
Hot Pack	73 (56.2)
Traditional Remedies	53 (40.8)
Painkillers	36 (27.7)
Exercise/Yoga	35 (26.9)
Dietary Supplements	34 (26.2)
Seeks Gynecologist	14 (10.8)
Homeopathic Medication	9 (6.9)
Do nothing to relieve symptoms	53 (40.8)

Table 2: Effect of PMS on Educational activities and Interpersonal relationships ant Treatments opted by female participants to relieve their premenstrual symptoms (n=130).

Characteristics	n (%)
Do you think PMS is an important issue that should be discussed	117 (90.0)
Do you want to talk to your Family/Spouse about PMS	110 (84.6)
Do you think Menstrual leave should be an option at college/workplace	106 (81.5)
Are you likely to consult a doctor for PMS	94 (72.3)

Table 3: Attitude of female participants towards PMS (n=130).

4. Discussion

PMS is common among women of reproductive age (15-49 years of age) [21]. It is accompanied by different symptoms that affect health [22, 23]. The mean age of the female students in this study was 22.32 ± 3.2 years. Similar mean age was found in study done by Mohib A et al [24] whereas the mean age of the students was less in studies done in West Bengal [25], Gujarat [26], Thailand [27] and Egypt [28]. The majority (80 %) of the female participants in this study knew about PMS while only (43.8 %) knew about PMDD. Similar findings were found in the study done by Mohib A et al. [24] where (96.4 %) of female students were aware of PMS while only (19 %) of females knew about PMDD, whereas a study done by Pal SA [29] in Pakistan reported that (98.8 %) of females were unaware of the phenomenon of PMS. In this study Irritability (74.6 %) was found to be the most commonly reported affective symptom which had been reported by several other studies [30-35]. Studies done in West Bengal [25] and Malaysia [36] also reported irritability as the most common affective symptom, whereas studies done in Gujarat [26] and Thailand [27] reported irritability as the third most common reported symptoms.

In our study Abdominal bloating (48.5 %) was found to be the most commonly reported somatic symptom, whereas a study done in West Bengal [25] reported abdominal bloating as the second most common somatic symptom and a study done in Thailand [27] reported abdominal bloating as the third most common somatic symptom. The most frequent impairments seen in this study were: Concentration impairment (53.8 %) and College/work efficiency/productivity impairment (53.8 %). Similar finding was found in the studies done in South India [37] and Gujarat [26] where the most frequent impairment was school/work efficiency/productivity impairment, whereas a study done in Thailand [27] reported Low scores as the most frequent impairment.

In this study the most frequent treatments opted by female students in order to relieve their symptoms were: Hot Pack (56.2 %) and Traditional remedies (40.8 %), whereas a study by Mohib A et al. [24] reported using analgesics (41%) and doing exercise (17.7 %) were the most common treatments opted by females to relieve their symptoms. In our study (40.8 %) of female participants did nothing to relieve their premenstrual symptoms. Similar finding was reported in the study done by Mohib A et al. [24] where (49.4 %) of females did nothing to relieve their symptoms. A positive attitude towards PMS was noted in our study with (90 %) of female participants think that PMS is an important issue that should be discussed, (84.6 %) of female participants want to talk to their family/spouse about PMS and (81.5 %) of female participants think that Menstrual leave should be an option at College/Workplace. These findings were similar to the study done by Mohib A et al. [24] Despite of the positive response only (10.8 %) of female participants seeks gynecologist to relieve their premenstrual symptoms. This result is comparable to the

findings of a national survey done in Spain [38] where only (18.7 %) of females take medical advice for PMS. Despite of the positive response of female participants towards PMS in our study, there is lack of knowledge about the necessity to consult a doctor or seek treatment for their symptoms.

Limitations

The study has certain limitations. It included a small and selective sample size which comprises of college students. The reporting of premenstrual symptoms was based on retrospective recall of the participants which adds a recall bias in data collection.

5. Conclusion

Based on the findings of the present study, it can be said that: PMS is a common problem affecting the educational activities and interpersonal relationships of female participants significantly. Although a positive attitude towards PMS was noted in our study but (40.8%) of female participants did nothing to relieve their premenstrual symptoms and only (10.8%) of them seek gynecologist to relieve their symptoms. Despite of the positive response of female participants towards PMS in our study, there is lack of knowledge about the necessity to consult a doctor or seek treatment for their symptoms. Further research is required on a larger population.

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Conflict of Interest

None

Source of Support

None

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