Original Research Article

Prevalence and Severity of Pre-Menstrual Syndrome in Reproductive Age Group Females- A Cross-Sectional Study

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ABSTRACT

Premenstrual syndrome is a common health problem in reproductive age group females. Premenstrual dysphoric syndrome (PMDD) is a severe form of Pre-menstrual syndrome (PMS) which adversely affects the quality of life. This study was conducted to show the prevalence and severity of PMS in these females.

This study was conducted in the out-patient department of Lok Nayak Hospital, New Delhi. 200 patients were selected among reproductive age group females. PMS questionnaire was prepared and data was collected regarding the demographic features, PMS symptoms, menstrual history, family history and social factors. Subjects were identified as no/mild, moderate/ severe and PMDD group.

Results showed that mean age of participants was 29.4±1.6 years which was lower in moderate/severe (21.4±1.4 years) and PMDD group (26.13±0.9 years). Positive family history in first degree relative was found in moderate/ severe and PMDD group which was statistically significant. Most commonly reported symptom was inability to concentrate on work followed by anger/irritability.

Early screening and diagnosis of these patients in health care facilities using premenstrual symptoms screening tool (PSST) score will significantly improve their quality of life.

Keywords: PMDD, premenstrual syndrome, premenstrual syndrome scoring tool (PSST), psychological symptoms, functional impairment.

INTRODUCTION

Premenstrual dysphoric disorder (PMDD) is a severe form of premenstrual syndrome (PMS) which can disrupt the lives of reproductive age females. In India 27.7% of female population belong to age group 15-29 years. [1] It is found that more than 80 % of these females may experience some physical or emotional pre-menstrual symptoms in their life. [2]

PMDD includes psychological symptoms like depressed mood, anxiety, anger/irritability, decreased concentration in work, easy fatigability, change in food habits, and physical symptoms like abdominal pain, headache, breast tenderness, bloating and swollen extremities. These symptoms are present in the last week of the luteal phase, remits in first few days of the menstrual cycle and rest of the cycle is pain free. [3] These females with PMS symptoms have significant functional impairment; with decreased efficiency in work, affected inter-personal relationship and increased absentia from work. [4]

Steiner et al developed a screening tool for premenstrual symptoms. Using

PSST scoring criteria premenstrual subjects were divided into no/mild, moderate-severe and PMDD group. [5] The aim of this study is to find the prevalence and severity of premenstrual syndrome and its associated demographic and menstrual factors.

MATERIALS AND METHODS

The study is a cross-sectional study, conducted from October 2018- February 2019 in the department of Obstetrics and Gynecology, Maulana Azad Medical College and LNH, New Delhi. The study sample comprised of 200 patients, including reproductive age group females (15-45 years), coming to out-patient department of the hospital. Patients with medical disorders like anemia, diabetes, hypothyroidism, asthma, heart disease, epilepsy were excluded from the study. Participants were selected using random sampling technique.

PMS questionnaire was prepared and data was collected regarding demographic, socio-economic factors and PMS symptoms. Questionnaire comprised of three parts, first one included demographic data- age, residence, socio-economic status, educational status, marital status, parity. Second one included menstrual history and pre-menstrual symptoms. PMS symptoms included physical (head-ache, bloating, breast tenderness, swollen extremities, backache) and psychological symptoms (anxiety, angry/irritable, confused, depressed, socially withdrawn, inability to concentrate on work), third part included family history in first degree relative (mother and sisters) and survey on support from friends, husband or family members.

Subjects were identified as no/mild, moderate-severe PMS, PMDD using PSST score, screening tool developed by Steiner et al for the degree of severity of PMS symptoms.

Statistical methods:

Data was expressed as range, mean and standard deviation for quantitative variables and for categorical variables number and frequencies (%). Statistical analysis was done using Chi-square test to find the significance of difference between various factors and respective groups- no/mild, moderate- severe and PMDD. p-value<0.05 was considered as statistically significant. Analysis was done using SPSS Statistical Software.

RESULTS

Out of 200 subjects 148 belong to no/ mild group, 43 to moderate-severe group and 9 to PMDD. Mean age of participants was 29.4±1.6 years which was lesser in PMDD group (21.4±1.4 years) and in moderate- severe group (26.13±0.9 years). Percentage of participants belonging to no/mild group is 74%, 21.5 % to moderate- severe group and 4.5 % to PMDD group. On studying the socio-demographic factors there was no statistical difference between the three groups with respect to residence, marital status and occupation.

Most common symptom reported was inability to concentrate on work followed by anger/ irritability. 97.6% participants in moderate-severe group and 100% in PMDD group reported decreased concentration/ interest in work. Anger/ irritability was found in 93.02% in PMDD group and 88.8 % in moderate- severe group. Functional impairment was evaluated by subjects being socially withdrawn and affected inter-personal relationship. It was found in 65.1 % in moderate- severe group and 88.9 % in PMDD group.

Mean age of menarche was 14.5±1.1 years which was lower for PMDD (13.6±1.2 years) and moderate- severe group (14.2±1.1 years). There was no statistical difference in study group with respect to the age of menarche, length of cycle and days of menstrual flow. Average BMI was 26.4, which was higher in moderate-severe group (27.2) and in PMDD group (28.4). One-way ANOVA test was conducted to compare the effect of BMI on pre-menstrual symptoms. An analysis of variants showed that there was no statistically significant association between BMI and severity of

PMS symptoms [f statistics $f(2,197) = 1.67$, p value- 0.19].

Positive family history in first degree relatives (mother and sisters) was 18.4 % in no/mild group, 44% in moderate-severe and 32.6% in PMDD group. Chi-square test was used and p value was calculated to be 0.0019, which was statistically significant. More number of subjects in moderate-severe and PMDD group have reported to have symptoms for > 5years than no/mild group (p-value <0.00001). Also symptoms for longer duration (>4 days) was found in moderate/severe and PMDD group (p-value <0.00001). Majority of subjects; 92.4% in moderate/ severe group and 88.6% in PMDD group had no support from family and friends.

TABLES : 1. PATIENTS' CHARACTERISTICS :

AGE	NO/MILD (n/%)	Moderate/severe	PMDD	total	P value
15-19 years	7 (63.63)	3 (27.27)	1 (9.09)	11	
20-25 years	58 (75.32)	15 (19.48)	4 (5.19)	77	0.854
>25 years	83 (74.10)	25 (22.32)	4 (3.5)	112	
MARITAL STATUS					
Unmarried	28 (75.67)	7 (18.91)	2 (5.4)	37	0.88
Married	120 (73.61)	36 (22.08)	7 (4.29)	163	
OCCUPATIONAL STATUS					
Housewife	137 (75.27)	38 (20.87)	7 (3.84)	182	
Unskilled	8 (66.66)	3 (25)	1 (8.33)	12	0.255
Skilled	2 (50)	1 (25)	1 (25)	4	
Corporate	1 (50)	1 (50)	-	2	
AGE OF MENARCHE (in years)					
	14.8±2.4	14.2±1.1	13.6±1.2		0.097
BMI (kg/m^2)					
	26.6±3.2	27.2±3.5	28.4±3.4		0.91
FAMILY HISTORY n (%)					
	27 (18.4%)	19 (44%)	3 (32.6%)		0.0019

Chi-square test, p < 0.05 is considered statistically significant.

TABLES: 2. SYMPTOMATOLOGY :

	NO/mild 148 (%)	Moderate/severe 43 (%)	PMDD 9 (%)
No. of years with premenstrual symptoms (>5 years)	2 (1.35%)	4 (9.3%)	5 (55.5%)
Days with premenstrual symptoms (> 4 days)	2 (1.35%)	5 (11.62%)	6 (66.6%)
Anxiety	80 (54.05)	35 (81.39)	9 (100)
Anger/ irritability	71 (47.9)	40 (93.02)	8 (88.8)
Depression	63 (42.56)	36 (83.72)	7 (77.7)
Socially withdrawn	62 (41.8)	28 (65.11)	8 (88.88)
Inability to concentrate at work	71 (47.9)	42 (97.67)	9 (100)
Headache	62 (41.8)	29 (67.44)	9 (100)
Bloating	60 (40.05)	27 (62.79)	7 (77.7)
Breast tenderness	54 (36.48)	28 (65.1)	7 (77.7)
Abdominal pain and backache	75 (50.67)	32 (74.4)	8 (88.8)
Swollen extremities	52 (35.13)	28 (65.1)	7 (77.7)

TABLES: 3. SOCIAL ASPECTS :

	No/ mild	Moderate/ severe	PMDD
Family/ friends/ husband aware of disease	14 (9.4)	18 (37.5)	4 (44.4)
Support from family/friends/husband	6 (4.05)	10 (20.8)	2 (22)
Willing for treatment	8 (5.4)	12 (25)	5 (55)
Seeking any treatment	6 (4.05%)	4 (14.2)	2 (22.2%)

DISCUSSION

Prevalence of PMS in our study is 26% (21.5% for moderate/severe group and 4.5% for PMDD) while in the study by Steiner et al, [6] it is 21.3% for moderate/severe group and 8.3% to PMDD group. The difference of prevalence can be explained by the higher age group females in our study. Banerjee et al reported 6.4 % of prevalence of PMDD in Indian women. [7] Our study reported decreased concentration of work followed by anger/ irritability as the most common symptom. Fatigue/ lack of energy was reported as most common symptom in studies done by Bakhshani et al. [8] Study done by Singh et al on Indian

college students reported irritability as most common symptom and those with impairment, tiredness/lack of energy as most common symptom. [9]

Our study showed functional impairment in study group, those who were socially withdrawn and with affected inter-personal relationship affecting 65.4% in moderate-severe group and 88.9% in PMDD group. Steiner et al showed affected inter-personal relationship in about half of severe and three quarters of the PMDD group. [6] Our study showed that average BMI was relatively higher for moderate-severe (27.2) and PMDD group (28.4), which was in agreement to a review article done by Bansal et al. [10]

Similar to study by Issa et al, our study found no statistical difference with respect to age of menarche, length of cycle and duration of menstrual flow. [11] The study found significant family history, 44% in moderate-severe and 32.6 % in PMDD group which was in consistent with the study by Lentz et al. [12]

Our study showed the social aspect of the disease. Only 37.5% subjects in moderate/severe group and 44% in PMDD group have shared their distress from PMS symptoms to their family members/ friends or husband while only 20% in moderate/severe group and 22% in PMDD have got support for them. Only 25% in moderate/severe group and 55% in PMDD group want to seek treatment for their symptoms. 14% subjects in moderate/severe group and 22 % in PMDD group are on some form of treatment for their symptoms. The study showed that burden of disease is very high, awareness of the disease and timely seeking for the help will improve quality of life in these patients.

The study has some limitations. The study included only a group of patients coming to tertiary health care. There was no prospective data collection of PMS symptoms based on monthly menstrual diary. Reporting of PMS symptoms was based on retrospective recall, thus subject to recall bias. Large prospective population-based studies using daily diary of PMS symptoms are recommended.

CONCLUSION

Magnitude of severe PMS and PMDD is high (26%). However it is a commonly under recognized disorder among health care facilities. Most commonly presenting symptoms include lack of energy and concentration and anger/ irritability. It causes significant functional impairment in the form of decrease work efficiency and affected inter-personal relationship. It is significantly associated with high BMI and strong family history.

Early screening and diagnosis of these patients in health care facilities and effective management will significantly improve their quality of life. PSST scoring can act as an effective screening tool for these patients.

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