Research Article

A study on premenstrual syndrome among adolescent girl students in an urban area of West Bengal

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ABSTRACT

Background: Previous studies in India reported a prevalence of premenstrual syndrome to be 20% in a general population and severe symptoms in 8%. The present study was conducted to study the socio-demographic characteristics of adolescent school girls, to estimate the proportion of premenstrual syndrome among them and to find out factors associated with premenstrual syndrome, if any.
Methods: It was a cross-sectional descriptive study conducted at a Kolkata city. Data were collected from the students of Class IX to XII in the classroom using pre-tested pre-designed self-administered questionnaire. Total 278 students were included in the study. Data analysis was done with the help of SPSS version 20.0.
Results: The mean age of the students was 15.61 years ± 1.3. 54% of girls reported to have PMS. Out of the affective symptoms in ACOG criteria depression was by 45.7%, anger by 61.2%, irritability by 88.1%, anxiety by 51.8%, confusion by 46.4%, rejection by 24.8, breast pain by 22.7, abdominal distension by 37.5%, headache by 40.6% and swelling of limbs by 5% of girls.
Conclusions: Proper medical care and psychological counselling should be sought earlier for increased blood flow during menstruation and dysmenorrhoea to get rid of PMS in adolescent girls.

Keywords: Premenstrual syndrome, Adolescent girl students, Urban area

INTRODUCTION

Menstruation is a normal physiological phenomenon in a woman's reproductive life. Among the gynecological problems, menstrual problems are said to be the major ones especially among adolescent females.[1] Premenstrual syndrome (PMS) is used to describe physical, cognitive, affective and behavioural symptoms that occur cyclically during the luteal phase of the menstrual cycle and resolve quickly at or within a few days of the onset of menstruation.[2] Previous studies in India reported a prevalence of premenstrual syndrome to be 20% in a general population and severe symptoms in 8%.[3]

American College of Obstetrician and Gynaecologist (ACOG) put forward a criteria which consists of any one of the Affective symptoms (Depression, Angry outbursts, Irritability, Anxiety, Confusion and Social withdrawal) and Somatic symptoms (Breast tenderness, Abdominal bloating, Headache and Swelling of extremities). These symptoms should occur in the three prior menstrual cycles during the 5 days before the onset of menses and the symptom must resolve within 4 days of onset of menses and not recur until after day 12 of the cycle. The symptoms must adversely affect social or work related activities.[4] These conditions are not life threatening but they can seriously decrease the quality of life of many women and affect their mental health and their productivity.[5]

With this background the present study was conducted to study the socio-demographic characteristics of adolescent school girls, to estimate the proportion of premenstrual

syndrome among them and to find out factors associated with premenstrual syndrome, if any.

METHODS

The present study was a descriptive study with cross-sectional design. It was conducted in Kolkata City. Study period was from July 2014 to August 2014 as this period was found to have maximum attendance of students in previous years. Out of all wards in Kolkata Municipal Corporation, ward number 35 was selected by simple random sampling. Three Higher Secondary Girls' Schools are situated in this ward. Out of them one school was selected by simple random sampling. The name of the selected school was Surah Kanya Vidyalaya, Kolkata -700035. At first the school authority was approached. The purpose of the study was explained to them. Then the data were collected from the students of class IX to class XII who attended the school on the days of data collection. Place of data collection was the class room. Total 278 students could be included in the study. All of the students who were present in school on those days participated in the study. Informed consent was obtained from the students before data collection. Data collection was done with the help of a pre-designed and pre-tested self –administered questionnaire. Questionnaire was translated in Bengali with the help of experts. Again it was retranslated in English to find out the discrepancies.

Students were briefed about how to fill up the questionnaire. 30 minute time was allotted for filling up the questionnaire. ACOG criteria[4] were used for assessment of PMS. It contains six affective and four somatic symptoms. Symptoms must also meet the following criteria: i) be relieved within 4 days of the onset of menses, without recurrence until at least cycle day 13, ii) be present in the absence of any pharmacologic therapy, hormone ingestion, or drug or alcohol use, iii) be causing identifiable dysfunction in social or economic performance and iv) occur reproducibly during two cycles of prospective recording.

Data were entered in M S Excel spread sheet. Data were analyzed with the help of statistical software SPSS version 20.0 using mean, standard deviation, proportion and Chi square test.

RESULTS

The mean age of the students was 15.61 years ± 1.3 (Range 13-19 years) (Table 1). All of them were Hindu and residing in Kolkata. Majority belonged to general caste (84.5%). 68.3% of students came from nuclear families. 4.7% of mothers of the girls were illiterate while 91.7% girls' mother was educated up to secondary or more. In majority of them, mothers were home maker (87.4%) by occupation. BPL card was present in only 9.7% of students.

Table 1: Distribution of adolescent girls according to socio-demographic factors and premenstrual syndrome (n=278).

Factors	Premenstrual syndrome				X^2 value, p value
	Present		Absent		
	No.	%	No.	%	
Age(in years)					
13-15	77	(58.3)	55	(41.7)	1.94, 0.16
16-19	73	(50.0)	73	(50.0)	
Caste					
General	116	(51.6)	109	(41.4)	2.73, 0.09
Scheduled caste	34	(64.2)	19	(31.8)	
Type of family					
Nuclear	104	(54.7)	86	(44.3)	0.14, 0,70
Joint	46	(52.3)	42	(47.7)	
Literacy status					
Illiterate	10	(43.5)	13	(56.5)	1.10, 0.29
Literate	140	(54.9)	115	(45.1)	
Occupation					
Housewife	129	(53.1)	114	(46.9)	0.58,0.44
Others	21	(60.0)	14	(40.0)	
BPL card					
Present	12	(48.0)	15	(52.0)	1.08, 0.29
Absent	138	(55.0)	113	(45.0)	

Table 2: Distribution of adolescent girls according to physical factors and premenstrual syndrome (n=278).

| Physical factors | Premenstrual syndrome | | | | X^2 value, p value |
| | Present | | Absent | | |
	No.	%	No.	%	
Age at Menarche					
13-16	90	(70.3)	38	(29.7)	0.004, 0.94
17-19	106	(70.7)	44	(29.3)	
Regularity of cycle					
Regular	12	(50.0)	12	(50.0)	0.166, 0.68
Irregular	138	(54.3)	116	(45.7)	
Flow					
Normal or low	127	(59.3)	87	(40.7)	10.86, 0.001
Heavy	23	(35.9)	41	(64.1)	
Duration of cycle					
≤5 days	99	(55.3)	80	(44.7)	0.36, 0.54
>5 days	51	(51.5)	48	(48.5)	
Dysmenorrhoea					
Present	84	(47.5)	93	(52.5)	8.28, 0.004
Absent	66	(65.3)	35	(34.7)	

Table 3: Distribution of girls according to symptoms in ACOG criteria (n= 278).

Symptom	Number	Percentage
Depression	127	45.7
Anger	170	61.2
Irritability	245	88.1
Anxiety	144	51.8
Confusion	129	46.4
Rejection	69	24.8
Breast pain	62	22.7
Abdominal distension	107	37.5
Headache	113	40.6
Swelling of limbs	14	5.0

Average age at menarche was 11.98 years ± 1.08 (Range 9-15 years) (Table 2). Majority of them (91.4%) had irregular cycles, while flow was more than normal in 23% girls. Near about two-third of the adolescent girls reported to have cycles longer than 5 days along with dysmenorrhoea.54% of girls reported to have PMS. Out of the affective symptoms in ACOG criteria 45.7% reported depression of which 4.7% suffered frequently in premenstrual period (Table 3). Anger was reported by 61.2% of girls where 22.7% was mostly affected. Irritability was reported in as high as 88.1% girls where 22.7% experienced it most frequently. Anxiety and confusion were reported by about half of the adolescent girls where about one-tenth had frequent such episodes. Around one fourth of girls experienced breast pain while only 2.2% experienced it most frequently. 24.8% of girls also faced social rejection during that period out of them 6.5% had to face it most frequently. Headache and abdominal distension were reported by around 40% students. Only 5.4% of girls had both of these most frequently. Only 5% of them had limb swelling in premenstrual period, only 1.1% faced it most frequently.. Premenstrual syndrome was not found to be statistically associated with caste, type of family, education and occupation of mother and possession of BPL card in the family .No statistical significance was observed with age at menarche, duration of cycle and nature of flow. However, it was found to be associated with amount of blood flow during menstruation and presence of dysmenorrhoea (p<0.05).

DISCUSSION

Mean age at menarche was found to be more in studies in Erode[6] and Iran.[7] Menstrual bleeding was reported to be more in the study at Iran.[7] Prevalence of PMS was much more in Iran study [7] and Poland[8] while it was much less in a study in United Arab Emirates.[9] In Iranian adolescents the most reported physical symptoms were lower abdominal and back pain and lethargy was the major psychological complaint of respondents [7]whereas in the present study irritability was commonest psychological and abdominal distension was found to be most common among physical symptoms. Almost one-fourth of the girl students had to face social rejection due to PMS. Like the

present study dysmenorrhoea was found to be significantly associated with premenstrual syndrome in studies conducted in Iran[7] and United Arab Emirates.[9] However the Erode study did not show any association of PMS with socio-demographic or physical factors while the present study also did not show any association of PMS with socio-demographic factors.[6]

The present study revealed high prevalence of PMS among school going adolescents in an urban area. It was significantly associated with amount of blood flow during menstruation and dysmenorrhoea. Proper medical care and psychological counselling should be sought earlier for this problem. This will help them to get rid of PMS so that they can utilize the formative years of life most.

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