

## DYSMENORRHOEA AND PREMENSRTUAL SYNDROME: FREQUENCY AND EFFECT ON DAILY ACTIVITIES OF ADOLESCENT GIRLS IN RURAL AREAS OF BANGALORE

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### ABSTRACT

**Background:** There are several problems associated with menstruation. Common problems are dysmenorrhea, premenstrual syndrome (PMS) and menstrual irregularities. These problems significantly lower the quality of life in adolescents.

**Aims & Objectives:** Present study was undertaken with the objective of assessing the frequency of dysmenorrhea and PMS and the effect of dysmenorrhea and PMS on school attendance and daily activities of adolescent girls and their treatment seeking pattern.

**Materials and Methods:** A descriptive study was carried out in Government high schools in rural field practice area of Kempegowda Institute of Medical Sciences, Bangalore, India. All girls studying in high schools who had attained menarche were included in the study. Totally 304 subjects fulfilled inclusion criteria and participated in the study. Statistical analysis was done using descriptive statistics, chi square test and odds ratio.

**Results:** Dysmenorrhea was reported by 183 (60.19%) study subjects and PMS was reported by 159 (52.30%) subjects. During menstruation, 208 (68.42%) study subjects reported that they could not attend school, 196 (65.13%) reported that they could not concentrate on studies, 181 (60%) reported inability to participate in sport activities. Whereas 235 (77.30%) reported inability to carry out household activities like cooking and 76 (25%) study subjects did not attend any social gatherings.

**Conclusion:** More than half of study subjects suffered from dysmenorrhea and PMS which significantly affected school attendance and daily routine activities. Comprehensive health education regarding menstruation, awareness regarding menstrual problems and the treatment available for these problems should be provided at schools.

**Key Words:** Menstruation; Dysmenorrhea; Premenstrual Syndrome (PMS); School Absenteeism; Routine Activities

### Introduction

Adolescents face the turmoil concerning physical growth, psychological changes and secondary sexual changes occurring during adolescence phase. Adolescent girls, in addition, face problems related to menstruation. Menstruation is a normal physiological process experienced by all females, but there are several health problems associated with menstruation. The most common problems are dysmenorrhea, premenstrual syndrome (PMS), menstrual irregularities, precocious or delayed puberty, vaginal discharge and acne.<sup>[1]</sup> Several other psychological and somatic symptoms are also seen during menstruation. The most common psychological problems include tiredness, lethargy, depressed mood and most common somatic symptoms are backache, abdominal bloating, muscle pain, acne and headache.<sup>[2]</sup>

Several studies have shown the prevalence of dysmenorrhea to vary from 52% to 74%.<sup>[3,4]</sup> The prevalence of PMS was found to be 63% in one of the study conducted in New Delhi.<sup>[4]</sup> Dysmenorrhoea and PMS are significantly associated with school absenteeism and disruption of social and daily routine activities.<sup>[4-6]</sup> School absenteeism varied from 17% to 53% in different studies.<sup>[4,5]</sup> Thus, dysmenorrhea and PMS significantly

lowered the quality of life in all dimensions in adolescent girls during menstruation.<sup>[3]</sup>

Treatment seeking behaviour among adolescents has indicated suboptimal utilization of health care facilities which may be due to poor awareness or poor access. This may also be attributed to feeling of shame or embarrassment associated with menstruation related issues among adolescents females.<sup>[5,6]</sup>

No baseline data on menstrual problems was available in the rural field practice area of Kempegowda Institute of Medical Sciences, Bangalore. Hence, the present study was undertaken with the objective of assessing the frequency of dysmenorrhea and PMS and effect of dysmenorrhea and PMS on school attendance and daily activities of adolescent girls and treatment seeking pattern among them.

### Materials and Methods

This descriptive study was conducted among adolescent girls studying in Government high schools in rural field practice area of Kempegowda Institute of Medical Sciences, Bangalore, South India. Since there were only four government high schools in this area, all four

schools were taken for study. Study was conducted from June 2012 to December 2012. Permission was obtained from the Principals and respective class teachers of all four schools.

Inclusion criteria included girls who had attained menarche and had experienced a minimum of 6 menstrual cycles and all those girls whose parents consented for the study. Students consent was also obtained before the study. Study excluded students who were absent during the study period and those who were not willing to participate. A total of 464 girls were studying in 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> standards in all four schools at the time of study, out of them 304 fulfilled inclusion criteria. All 304 girls were included in the study. Each study subject was interviewed for menstrual pattern, menstrual problems and activities affected during menstruation with the help of an open ended questionnaire. Privacy and confidentiality was maintained throughout the study period.

Dysmenorrhoea is defined as painful cramping accompanying menstruation. It can be either primary or secondary dysmenorrhea. Primary dysmenorrhea refers to one that is not associated with any identifiable pelvic pathology.<sup>[1]</sup> (In this study, the objective was to find out the frequency of primary dysmenorrhoea. Secondary dysmenorrhoea was ruled out with medical and menstrual history.)

Premenstrual syndrome (PMS) is a symptom complex recognized primarily by cyclical changes associated with ovulation. It occurs 7 – 14 days prior to menstruation and spontaneously resolves after menstruation.<sup>[4]</sup> PMS was diagnosed with the help of American College of Obstetrics and Gynecology (ACOG) diagnostic criteria for PMS.<sup>[7]</sup>

Descriptive statistics such as percentages, mean, standard deviations were computed. Chi square test and odds ratio was used to assess association between menstrual problems and daily activities affected.

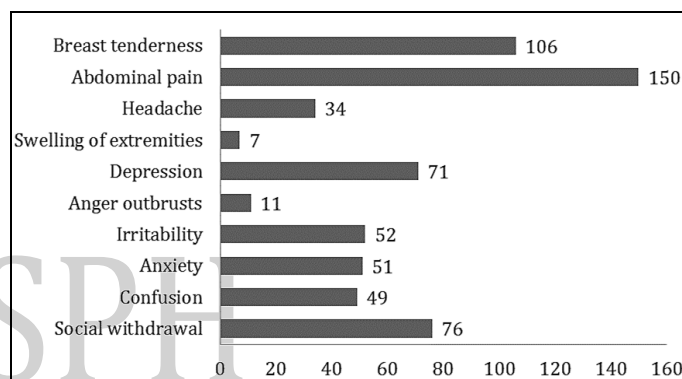
## Results

The mean age of the study subjects was 14.27 years (SD  $\pm 0.978$ ). Majority of the study subjects, i.e. 90.20% belonged to Hindu religion. Most of them, i.e. 274 (70.40%) study subjects, belonged to nuclear family, and 96 (40.67%) hailed from lower middle class of socio-economic status.

**Table-1: Distribution of study subjects according to menstrual pattern and symptoms present during menstruation**

Variables	N	%	
Age at menarche (in years)	9 – 10	15	4.93
	11 – 12	154	50.65
	13 – 14	128	42.10
	15 - 16	7	2.30
Length of cycle (in days)	25 – 30	211	69.40
	30 – 35	21	6.90
	Irregular	72	23.70
Duration of cycle (in days)	3 – 5	233	76.64
	6 – 7	64	21.05
	>7	7	2.30
Symptoms present during menstruation*	Dysmenorrhea	183	60.19
	PMS	159	52.30
	back pain	204	67.33
	Easy fatigability Low	196	64.66
	Reduced appetite	71	23.33
	Pain in legs	62	10.19
Reduced sleep	8	2.66	
Vomiting	6	2.00	

\* Multiple responses



**Figure-1: Frequency of symptoms of premenstrual syndrome**

Majority of the study subjects had attained menarche at the age of 11 to 12 years. The mean age at menarche was 12.35 (SD  $\pm 1.174$ ). Around 211 (70%) study subjects had length of cycle of 25 to 30 days and 72 (23.7%) had irregular cycles. Majority of the study subjects, i.e. 233 (76.7%), had menstrual flow of 3 to 5 days duration. (Table 1)

Dysmenorrhea was reported by 183 (60.19%) study subjects. PMS was reported by 159 (52.30%) subjects. Besides dysmenorrhea and PMS, study subjects also suffered from other somatic symptoms during menstruation (Table 1). Among the subjects who suffered from PMS, the most common somatic symptom was pain abdomen which was observed in 115 (72.5%) study subjects. Among the psychological symptoms, depression was most common PMS symptom which was noted in 71 (44.65%) study subjects (figure 1).

Study subjects who suffered from dysmenorrhea and PMS, reported disruption of daily activities, like inability to attend school, difficulty in concentrating on studies, inability to participate in sports and also difficulty in

**Table-2: Effect of dysmenorrhea on daily routine activities**

Activity affected	Dysmenorrhea		Total (n=304)	$\chi^2$ / P value	OR	95% confidence interval	
	Yes (n=183)	No (n=121)				Lower limit	Upper limit
Studies	144 (69.2)	64 (30.8)	208	22.433/<0.001	3.288	1.989	5.436
Attending school	137 (69.2)	61 (30.8)	198	19.174/<0.001	2.929	1.797	4.774
Participating in sports	127 (70.2)	54 (29.8)	181	18.553/<0.001	2.814	1.747	4.533
Household chores	167 (71.1)	68 (28.9)	235	51.025/<0.001	8.135	4.349	15.216

\* Multiple responses; Figures in parenthesis indicate percentage.

**Table-3: Effect of Premenstrual Syndrome (PMS) on daily routine activities**

Activity affected	Dysmenorrhea		Total (n=304)	$\chi^2$ / P value	OR	95% confidence interval	
	Yes (n=183)	No (n=121)				Lower limit	Upper limit
Studies	128 (64.64)	80 (38.5)	208 (68.13)	22.522/<0.001	3.355	2.013	5.592
Attending school	110 (52.88)	88 (44.4)	198 (64.42)	2.409/0.121#	1.454	0.905	2.335
Participating in sports	104 (57.45)	77 (42.5)	181 (59.53)	4.767/0.290#	1.670	1.052	2.650
Household chores	132 (56.17)	103 (43.8)	132 (56.17)	6.208/0.013	1.994	1.153	3.448

\* Multiple responses; # statistically not significant; Figures in parenthesis indicate percentage.

**Table-4: Distribution of study subjects according to person approached and type of remedy used for menstrual problems**

Variables	N	%	
			Person approached for menstrual problem*
	Doctor	52	26.80
	Sister	14	7.21
	Teacher	6	3.90
	Friend	2	1.03
	Grandmother	2	1.03
Type of remedy used*	Consumption of warm water	154	50.65
	Consumption of sprit or water with soda	55	18.09
	Allopathic drugs	54	17.76
	Consumption of water boiled with fenugreek seeds	18	5.92
	Lemon juice	13	4.27
	Consumption of warm water with turmeric powder	7	2.30
	Consumption of warm water with sugar and salt	6	1.97
	Ayurvedic medicine	5	1.64
	Warm oil massage on stomach	5	1.64
	Consumption of water boiled with neem leaves	3	0.98
	Consumption of papaya fruit with jaggery	2	0.65

\* Multiple responses

carrying out household chores activities during menstruation. Dysmenorrhea was found to significantly affect all these activities, whereas PMS was found to significantly affect only studies and household chores activities (Table 2 & 3).

In the present study, it was observed that 148 (48.68%) study subjects approached their mothers to discuss regarding menstrual problems and only 26.8% consulted doctor (Table 4). Regarding remedy opted for menstrual problems, it was noted that most of the study subjects relied only up on household remedies which did not provide much benefit. Only 55 (18.09%) study subjects took modern medicines (dicyclomine and paracetamol) for remedy (Table 4).

## Discussion

The mean age at menarche in the present study is 12.35 years. Dysmenorrhea was noted in 60.2% and PMS in 52.3% of study subjects. In various studies, dysmenorrhea was reported in more than half of study subjects and its prevalence varied from 54% to 70.3%.<sup>[3-6,9,10]</sup>

The frequency of PMS was seen in 52.3% subjects in present study. Similarly various other studies have also shown that more than half of study subjects suffered from PMS.<sup>[2,4,8]</sup> But the symptoms of PMS varied in other studies. This variation may be due to difference in criteria used for diagnosis of PMS and difference in perceptions of symptoms. Amita Singh and co-authors reported the prevalence of PMS to be 73.83% and other symptoms reported were backache (62%), headache and fatigability (71%) and vomiting & diarrhea (6%) in their study.<sup>[11]</sup>

The most common somatic symptom of PMS noted was pain abdomen followed by breast tenderness, headache and swelling of extremities. The most common psychological symptoms noted were depression, anger outbursts, irritability and anxiety in the present study. These observations were similar to findings of the study done on school girls in Srilanka by Nadeeka et al.<sup>[8]</sup>

In the present study, 65.13% study subjects reported school absenteeism and 68.42% study subjects reported inability to concentrate on studies during menstruation.

60% subjects did not participate in sports and 77.30% reported inability to carry out household activities like cooking in the present study. A study conducted by Atchuta and Saibhargahvi in Andhra Pradesh, reported school absenteeism to vary from 36% to 72% among rural adolescent school girls.<sup>[3]</sup>

Inability to carry out all these activities was reported in other studies also.<sup>[4-6,12,13]</sup> The high rate school absenteeism in present study, when compared to other studies, may be attributed to the difference in socio-cultures practices in various regions, and difference in perception of illness in different individuals. Along with menstrual problems, school absenteeism was also reported due to lack of well-maintained toilets and rest rooms, separate for girls and boys in these schools.

In the present study 39% study subjects reported that they discussed menstrual problems with their mother followed by sister, teacher and friends. This finding is consistent with the observations of other studies where majority of study subjects opted mothers for discussing menstruation related problems.<sup>[4,8,15]</sup>

It is important to note that only 27% of study subjects consulted doctors for menstrual problems. This indicates that health care facilities are less approached by the adolescent girls, and they rely up on household remedies, which do not provide much relief. This suboptimal utilization of health care facilities was also reported by Pragya Sharma and Jasmine N in their studies on adolescent girls.<sup>[4,6]</sup>

## Conclusion

More than half of study subjects suffered from dysmenorrhea and premenstrual syndrome, which significantly affected school attendance and daily routine activities of adolescent girls. It was also observed that health care facilities were sub optimally utilized by adolescent girls.

Comprehensive health education regarding menstruation, awareness regarding menstrual problems

and the treatment available for these problems should be provided at schools. School teachers should also be involved in the health education so that they can provide proper guidance to students when required. This would reduce the suffering from menstrual problems, and improve the quality of life of adolescent girls.

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