

Research Article**Patterns & Problems of Menstruation amongst the Adolescent Girls Residing in the Urban Slum****Sheetu M K Jalkhani^{1*}, Naik J D², Thakur M S³, Langre S D⁴, Pandey V O⁵**^{1,3}Junior Resident, Department of Community Medicine, GMC, Miraj, Maharashtra, India²Associate Professor & Head, Department of Community Medicine, GMC, Miraj, Maharashtra, India⁴Ex-Assistant Professor, Department of Community Medicine, GMC, Miraj, Maharashtra, India⁵ Statistician, Department of Community Medicine, GMC, Miraj, Maharashtra, India***Corresponding author**

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Abstract: Menstruation is a normal physiological phenomenon for females indicating her capability for procreation and abnormalities of menstruation are a major gynaecological problem in adolescence. However, variability in menstrual cycle characteristics and menstrual disorders are common. The objectives of the study were to find out the age of menarche among the Adolescent girls of the urban slum, to study different menstrual patterns and practices among them & to find out the prevalence and types of menstrual disorders in Adolescent girls. A Cross sectional study was undertaken in an urban slum area of GMC, Miraj for period of 3 months. All unmarried adolescent girls from 10–19 years of age, who had attained menarche were included. Information was gathered on menarcheal age, menstrual patterns, practices & problems using a pretested semi-structured questionnaire. A total of 268 girls were interviewed. Mother was the source of information regarding menstruation in 45.5% of girls. Mean age of menarche was 13.43 + 1.01 years. 21.3% adolescents had abnormal cycle length, 24.2% had irregular menstrual cycle, 67.2% experienced dysmenorrhoea & 51.5% had premenstrual syndrome. Significant association was found between cycle length, duration of menstruation & amount of flow. Out of 199 girls who had ever experienced menstrual problem, 31% had any consultation & of them only 45.2% consulted doctors. There is an urgent need for strong health educational activities among the adolescent girls, their parents and teachers for effective management of menstrual problems & improvement of their health seeking behavior as regards menstrual abnormalities.

Keywords: Adolescence, Menstruation, Menarche, Menstrual Patterns, Dysmenorrhoea

INTRODUCTION

Adolescents (10-19 years) constitute 21.3% i.e. nearly 1/5th of total population of India [1]. Adolescence in girls has been recognized as a special period which signifies the transition from girlhood to womanhood. This transitional period is marked with the onset of menarche, an important biological milestone [2]. Menstruation is a normal physiological phenomenon for females indicating her capability for procreation and abnormalities of menstruation are a major gynaecological problem in adolescence [3]. Menstrual disorders are common in adolescence because they are closely related to the processes involved in the pubertal development of females. The menstrual cycle is a very important indicator of women's reproductive health and of their endocrine function. Menstruation, and the menstrual cycle are characterized by variability in volume, pattern and regularity. The prevalence of menstrual disorders has been recorded as high as 87 % [3]. Menstrual disorders include menstrual irregularity, menorrhagia,

polymenorrhoea, oligomenorrhoea, dysmenorrhoea, and other related symptoms. It is common observation that every woman does experience one or other type of menstrual problems in her lifetime. The timing of this process is individual-specific, within a broad range of normality. Menstruation is still regarded as something unclean or dirty in the Indian society. Because of various myths, misconceptions and restrictions practiced during menstruation, the adolescent girls often develop negative attitudes towards this natural physiological phenomenon. Majority of the girls lack scientific knowledge about menstruation and puberty. dysmenorrhoea Adolescent girls often are reluctant to discuss this topic with their parents and often hesitate to seek help regarding their menstrual problems.

The aim and objectives of the study was to

- To find out the age of menarche among the Adolescent girls of the urban slum.
- To study different menstrual patterns and practices.

- To find out the prevalence and types of menstrual disorders.

MATERIAL AND METHODS

A community based Cross sectional study was undertaken in an urban slum area of Government Medical College, Miraj for period of 3 months from July 2012 to September 2012. All unmarried adolescent girls in the age group of 10 – 19 years, who had attained menarche & were willing to participate in the study were included as study subjects after explaining them the aim of the study were included in the study. Rapport was established with the study subjects with the help of Medical Social Worker. These subjects were then interviewed face to face in local language (Marathi) using a pretested semi structured questionnaire after obtaining their informed consent. The questionnaire contained information regarding demographic parameters, age of menarche, pattern of menstruation, total days of bleeding, regularity of cycle, menstrual problems like dysmenorrhea, menorrhagia, etc. & menstrual hygienic practices among them.

The following definitions were used to describe menstrual cycle disorders:

- Oligomenorrhoea defined as infrequent, irregularly timed episodes of bleeding occurring at intervals of more than 35 days.
- Polymenorrhoea defined as frequent episodes of menstruation occurring at intervals of less than 21 days.
- Menorrhagia defined as unaltered menstrual cycles where quantity of menstrual loss is excessive.
- Hypomenorrhoea defined as regularly timed but scanty episodes of bleeding.
- Pre-menstrual syndrome (PMS) is recurrent variable cluster of trouble some physical and emotional symptoms that develop 7–14 days before the onset of menstruation and subsides when menstruation occurs. The PMS consists of low backache, fatigue, breast heaviness, abdominal bloating, increased weight, headache, irritability, skin disorders, aggressiveness, depression, gastrointestinal symptoms and loss of appetite.
- Dysmenorrhoea defined as Painful cramping abdominal pain accompanying menstruation & lasting 12- 24 hours severe enough to interfere with normal activities, or require medication.
- The data thus collected was entered into Microsoft Excel and analyzed using standard statistical methods. Mean, standard deviation, Chi-square value and simple percentages were determined. $p < 0.05$ was considered significant.

RESULTS

A total of 268 unmarried adolescents (10-19 years), who had attained menarche were included in the study. Most of the girls were in the age group of 15-19 years (67.2%) followed by 10-14 years (32.8%).

Table 1: Distribution by age of respondents

Age in Years	No.	%
Early Adolescence (10-14 yrs)	88	32.8
Late Adolescence (15-19 yrs)	180	67.2
Total	268	100

Information about menstruation

63.43% girls had knowledge about the menstruation before they achieved the menarche. The main source of information was mother (45.5%) while only 23.8 % girls got the information from their teacher. Other sources were elder sister, relatives, friends and books. (Figure 1)

Table 2: Information Regarding Menstrual Cycle

Knowledge regarding menstruation (n=268)	No.	%
Present	170	63.4
Absent	98	36.6
Total	268	100

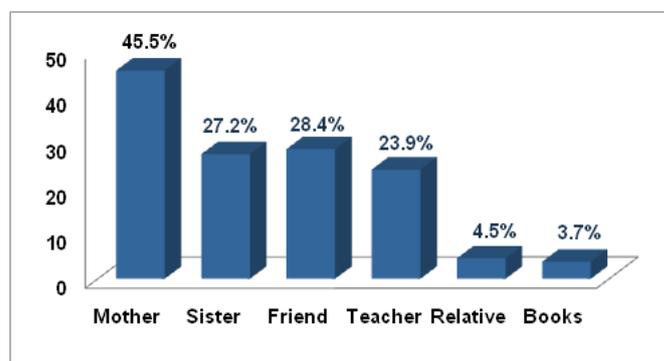


Fig. 1: Source of Information Regarding Menstrual Cycle

Menarche

The mean age of menarche came to 13.43 ± 1.01 years. 81.7% Adolescents had menarche in the age group of 12 to 14 years (Table 3).

Table 3: Age of menarche of study subjects

Age in Years	No.	%
≤ 11	6	2.2
12 to 14	219	81.7
≥ 15	43	16.1
Total	268	100

Menstrual Patterns

Out of the total study population, 188 (70.1%) adolescents had a menstrual bleeding for 3 to 5 days followed by 20.1% who had bleeding for 5 to 7 days. Cycle length was shorter than 21 days in 4.9%, between 21 and 35 days in 78.7% and longer than 35 days in 16.4% girls. 75.8% adolescents had regular cycles. 60.1% girls had moderate blood flow during

menstruation followed by scanty flow in 21.3% & heavy in 18.6%.

Table 4 shows that highly significant association was found between menstrual flow and cycle length as well as between menstrual flow & duration of bleeding in days. No significant association was found between regularity of cycle & menstrual blood flow.

Table 4: Menstrual patterns in the adolescents

Menstrual cycle type	Menstrual bleeding			Total	Chi-square value
	Scanty	Moderate	Heavy		
Regular	41 (71.9)	123(76.4)	39 (78)	203 (75.7)	df=1, $\chi^2=1.874$, p>0.05,NS
Irregular	16 (28.1)	38(23.6)	11 (22)	65 (24.3)	
Total	57 (100)	161(100)	50 (100)	268 (100)	
Cycle length					
≤ 20 days	2 (3.5)	4 (2.5)	7 (14)	13 (4.9)	df=6, $\chi^2=67.76$, p<0.001,HS
21 - 35 days	27 (47.4)	145 (90)	39 (78)	211 (78.7)	
36 – 45 days	23 (40.4)	10 (6.2)	3 (6)	36 (13.4)	
> 45 days	5 (8.8)	2 (1.2)	1 (2)	8 (3)	
Total	57 (100)	161 (100)	50(100)	268 (100)	
Duration of Menstruation in days					
≤ 2	6 (10.5)	3 (1.9)	2 (4)	11 (4.1)	df=6, $\chi^2=26.873$, p<0.001,HS
3 to 5	31 (54.4)	128 (79.5)	29 (58)	188 (70.1)	
5 to 7	18 (31.6)	24 (14.9)	12 (24)	54 (20.1)	
≥ 8	2 (3.5)	6 (3.7)	7 (14)	15 (5.6)	
Total	57 (100)	161 (100)	50(100)	268 (100)	

Numbers in parentheses represent percentages

Menstrual practices

Table 5 shows that 39% girls used sanitary pads, while 37% used cloth & 24% girls used both during menstruation. 98% girls using sanitary pads were literate. Among literate girls 41% used sanitary pads &

35.5% used cloth. 59% of literate girls using cloth reused it after washing. Significant association of education of adolescents was found with different absorbant materials used during menstruation & Reuse of cloth after washing.

Table 5: Menstrual practices & their association with education of adolescents

Absorbant Material used (n=268)	Educational status of Adolescents			χ^2 & p value
	Literate	Illiterate	Total	
Sanitary pad	102 (41.1)	2 (10)	104 (38.8)	$\chi^2=7.576$, df=2, p<0.05, S
Cloth	88 (35.5)	11 (55)	99 (36.9)	
Both	58 (23.4)	7 (35)	65 (24.3)	
Total	248 (100)	20 (100)	268 (100)	
Cloth users (n=164)				
Reuse	85 (59)	18 (90)	103 (62.8)	$\chi^2=4.2385$, df=1, p<0.05, S
No reuse	59 (41)	2 (10)	61 (37.2)	
Total	144 (100)	20 (100)	164 (100)	

Table 6: Menstrual practices & their association with education of the mothers of adolescents

Absorbant Material used	Educational status of Mothers			χ^2 & p value
	Literate	Illiterate	Total	
Sanitary pad	98 (45.4)	6 (11.5)	104 (38.8)	$\chi^2=21.015$, df=2, p<0.05, S
Cloth	69 (32)	30 (57.7)	99 (36.9)	
Both	49 (22.6)	16 (30.8)	65 (24.3)	
Total	216 (100)	52 (100)	268 (100)	
Cloth users (n=164)				
Reuse	69 (56.1)	34 (82.9)	103 (62.8)	$\chi^2=10.632$, df=1, p<0.05, S
No reuse	54 (43.9)	7 (17.1)	61 (37.2)	
Total	123 (100)	41 (100)	164 (100)	

Among girls whose mothers were literate 45.4% used sanitary pads, 31.9% used cloth & 52.2% girls using cloth reused it after washing (Table 6). Significant association of education of the mothers of adolescents was found with different absorbant materials used during menstruation & Reuse of cloth after washing at p value < 0.05.

Menstrual problems

Out of 199 adolescent girls who ever had faced menstrual problem, majority of girls had dysmenorrhoea (67.2%) & premenstrual syndrome (51.5%) followed by irregular menstruation (24.3%), menorrhagia (18.7%) & Oligomenorrhoea (16.4%) (Table 8).

Common premenstrual symptoms among the girls were headache (50%), depression (47.8%), tension (36.9%), abdominal cramps (35.5%) irritability (33.3%) & moodiness (30.4%) (Table 9).

Table 9: Symptoms of premenstrual syndrome in the study subjects

Premenstrual symptoms	No.	%
Depression	66	47.8
Irritability	46	33.3
Headache	69	50
Moodiness	42	30.4
Tension	51	36.9
Anxiousness	29	21
Fatigue	30	21.7
Insomnia	19	13.8
Abdominal cramps/pain	49	35.5
Abdominal bloating	23	16.7
Constipation/ Diarrhoea	17	12.3
Nausea/ Vomiting	11	7.9
Breast fullness/ tenderness	14	10.1
Skin problems like acne	25	18.1
Muscle/ joint pain/ pain in thighs	18	13
Changes in appetite/ overeating/ craving	10	7.2

Table 7: Prevalence of menstrual disorders

Ever had a menstrual problem	No.	%
Yes	199	74.3
No	69	25.7
Total	268	100

Table 8: Different menstrual disorders in adolescent girls

Menstrual disorder	No.	%
Dysmenorrhoea	180	67.2
Menorrhagia	50	18.7
Oligomenorrhoea	44	16.4
Polymenorrhoea	13	4.8
Irregular menstruation	65	24.3
Premenstrual syndrome	138	51.5
Hypomenorrhoea	57	21.3

Table 10: Consultation for menstrual problem

Consultation for menstrual problem (n=199)	No.	%
Yes	62	31.2
No	137	68.8
Total	199	100
Consultation by		
Doctor	28	45.2
Mother	22	35.5
Friend	5	8.06
Sister	5	8.06
Others	2	3.2
Total	62	100

Out of 199 girls who had ever experienced menstrual problem, only 31.2% had any consultation & of them 45.2% consulted doctors & 35.5% had consulted their mothers.

DISCUSSION

67.2% of study participants belonged to the age group 15 – 19 years while 32.8% were between age ranges of 10-14 years. 92.5% girls were literate & mothers of 80.6% of the study participants were literate. In our study 63.4% girls had knowledge about menstruation while in study by Verma PB *et al.*[3] in Gujarat, 88.1% girls had information regarding menstruation. 61.29% girls reported mother as a first source of information in the study by Keerti Jogdand [4].

The mean age of menarche in our study was 13.43 ± 1.01 years which is comparable to study by Verma PB, *et al*³ and Dambhare DG. *et al* in Central India i.e. 13.9 ± 1.8 years & 13.51 ± 1.04 years respectively. Maximum number of girls have attained menarche between 12-14 years in the study by Keerti Jogdand⁴ in an urban slum area in Andhra Pradesh.

75.7% girls had regular cycles, 60.1% had moderate blood flow, 78.7% had cycle length between 21 to 35 days & 70.1% had bleeding for 3 to 5 days in our study that is similar to study by Dambhare DG *et al.* [2] in which 70% had regular cycles, 69.52% had cycle length & 67.56% had bleeding for 2 to 4 days. Also comparable with the present study Keerti Jogdand [4] reported 76.65% and Balsubramanian [5] i.e. 84% girls having blood flow between 3-5 days. In the study by Lee L K [6] in Malaysia 88.2% girls had menstrual flow for 3-7 days and 62.8% had cycle length between 21-35 days.

Majority (41.1%) of literate girls used sanitary pads. Concerning the influence of maternal educational status on materials used as absorbent majority (45.4%) of the participants from the literate mothers used sanitary pads as absorbent for menstruation. In the study by Juyal R *et al.* [7] 38.4% adolescent girls used sanitary napkins while 30% used new cloth or rag everytime as menstrual absorbent. In West Bengal [8], majority of girls preferred cloth pieces rather than sanitary pads as menstrual absorbent. In the study by Shanbhag D [9], it was seen that 44.1% used sanitary pad and 21.2% used both cloth and sanitary pad.

In the present study 74.3% had ever faced menstrual problem with dysmenorrhoea (67.2%) being most common. In other studies 60.77% (study in central India by Dharampal Dambhare [2]) & 50.6% (by Verma PB *et al.* [3]) had dysmenorrhoea. 51.5% had reported Premenstrual syndrome with headache (50%), depression (47.8%), tension (36.9%), abdominal cramps (35.5%) being the common symptoms in our study. In the study by Dambhare DG *et al.*[2] 56.15% girls had experienced & headache (26.7%) was the most common symptom. PMS was experienced by 74.6% and dysmenorrhoea by 67.7% of the adolescent girls in the study by Lee L K [6] in Malaysia (2006). Also the

commonest problem was dysmenorrhoea 88.8% in study by Christina John.

Out of girls having menstrual problems 31.2% had some consultation & of them 45.2% consulted doctors & 35.5% had consulted their mothers.

CONCLUSION & RECOMMENDATION

63.4% girls had knowledge about menstruation. Mean age of menarche was 13.43 ± 1.01 years. 39% girls used sanitary pads, while 37% used cloth & 24% girls used both during menstruation. Dysmenorrhoea (67.2%) & premenstrual syndrome (51.5%) were the most common menstrual problems. The prevalence of menstrual problems in adolescent girls is high and may adversely affect their education and daily activity. However, their knowledge is often poor and only a minority seek medical advice. Proper education about menstruation and its related problems is important for both the adolescent girls and their mothers in order to prevent avoidance of medical care. Factors affecting avoidance of health seeking behaviour should be further evaluated and interventions implemented to address these factors. All mothers irrespective of their educational status should be taught to break their inhibitions about discussing with their daughters regarding menstruation much before the age of menarche.

It is essential that all women in the family become educated and are counseled on the importance of the use of sanitary napkins. The role of community health functionaries like ASHA and members of the women self-help groups in community mobilization could be instrumental in reducing the religious and cultural barriers for the use of sanitary napkins. The availability of sanitary napkins should not be restricted to health centers and health functionaries. In the villages, the women self help groups (like Mahila Mandal and Stri-Sabha), traditional birth attendants, female shopkeepers etc. should be involved to store and distribute sanitary napkins as girls would be more comfortable to purchase sanitary napkins from them. In addition, a functional adolescent group should have responsibility and be a part of these self-help groups.

The “peer educators” concept (where a few girl leaders would be trained by ASHA and NGO’s and teach other girls in the group) would help in spearheading the message. In schools, Sanitary napkin vending machine should be placed inside the toilet & a low-cost incinerator should be installed for the soiled napkins. This has already been started in Girls’ school in Tamil Nadu.

Menstrual hygiene promotion needs to be included in school curriculum. The school teachers should be trained regularly so that they can have the clear idea about how to impart the reproductive health

education in classes. As more and more women and community in general become literate and educated, acceptance of menstruation as a normal physiological process, identification of menstrual morbidity and slow disappearance of unhealthy practices as described above should be expected to follow.

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