

## Original Research Article

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# Menstrual hygiene patterns and practices among rural adolescent school girls

Kumar Chinta, Sasikala P.\*, Chandrasekhar V., Jayanth C., Geethanjali A.

Department of Community Medicine, Narayana Medical College, Nellore, Andhra Pradesh, India

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**\*Correspondence:**

Dr. Sasikala P.,

E-mail: sasilaxman7@gmail.com

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## ABSTRACT

**Background:** Menstruation is described as the periodic vaginal bleeding that occurs with the shedding of the uterine mucosa. Issues associated with menstruation are never discussed openly and the silence surrounding menstruation burdens young girls by keeping them ignorant of this biological function. The taboo surrounding menstruation in society prevents girls from articulating their needs and problems of poor menstrual hygiene management have been ignored or misunderstood. Implications of ignoring this issue of menstruation are serious and at times life threatening.

**Methods:** This study is a cross-sectional observational study conducted among 217 adolescent girls studying in government high schools located in the field practice area of rural health training centre attached to the department of community medicine, Narayana Medical College, Nellore.

**Results:** Out of 169 girls who have attained menarche, 154 (91.12%) were having periods at regular intervals. Among 154 girls with regular menstrual cycle majority (55.2%) had 28-31 day cycle. Out of 169 girls who had attained menarche at the time of study 76.9% reported that they use sanitary napkins for absorption of blood during menstruation. The most common method of disposal of material used for absorption of blood during menstruation was burning (91.7%) and 65.7% were using soap for washing private parts.

**Conclusions:** The study concludes that majority of adolescent girls had regular menstrual cycles and majority of the respondents were using sanitary napkins.

**Keywords:** Adolescent girls, Menstrual cycle, Menstrual patterns, Menstrual hygiene, Sanitary napkins

## INTRODUCTION

The term adolescence has been defined as including those aged between 11 and 19 years. Adolescence is the period of physical, psychological and social maturing from childhood to adulthood.<sup>1</sup> Most of the Indian studies reported average age at menarche as between 12.18 and 13.64 years.<sup>2-5</sup>

Menstruation is described as the periodic vaginal bleeding that occurs with the shedding of the uterine mucosa.<sup>6</sup> The menstrual cycle is usually of 28 days, measured by the time between the first day of one period and the first day of the next. The duration of bleeding is

about 3-5 days and estimated blood loss is between 50-200ml. The regular cycle of 28 days is seen only in a small proportion of women. A deviation of 2-3 days from the 28 day rhythm is quite common.<sup>7</sup>

Issues associated with menstruation are never discussed openly and the silence surrounding menstruation burdens young girls by keeping them ignorant of this biological function. Even after attainment of menarche, very little information is given to young girls about the physiological process involved and the hygienic practices to be followed. The taboo surrounding menstruation in society prevents girls from articulating their needs and problems of poor menstrual hygiene management have been ignored or misunderstood.<sup>8</sup> Implications of ignoring

this issue of menstruation are serious and at times life threatening.<sup>9</sup> In this background the present study has been conducted among adolescent school girls in the field practice area of rural health training centre attached to Narayana Medical College, Nellore, AP to describe the menstrual hygiene practices.

## METHODS

This study is a cross-sectional observational study conducted among 217 adolescent girls studying in government high schools located in the field practice area of rural health training centre attached to the department of community medicine, Narayana Medical College, Nellore. Many Indian studies reported the average age at menarche as between 12.64 and 13.28 years. Hence this study included adolescent girls from class 8<sup>th</sup> to 10<sup>th</sup>. There were three government schools in the study area and all the three schools were included in the study. Prior approval was taken from institutional ethical committee. Prior permission was taken from the school authorities after explaining about the study and its purpose. The school authorities were given prior information about our school visit and requested to instruct students to be present on the day of our visit. The three schools were visited on three different days. After visiting the school, with the help of school staff all the girl students from class 8<sup>th</sup> to 10<sup>th</sup> were made to assemble in one room. All the eligible girls present on the day of visit were studied. Follow up visit was not made to collect information from those girls who were absent on the day of our visit. Before taking the information verbal consent was taken from the participants. The information was collected using a predesigned and pretested questionnaire which contained questions about menstrual pattern, menstrual hygiene practices and some social factors. The students were made to sit in such a way that the peeping and talking is prevented. The questionnaire was distributed to all the participants and before filling the questionnaire, the questionnaire was explained and instructions were given on how to fill the questionnaire. Adequate time was given to fill the questionnaire. After completing the filling of questionnaire a health educational talk was given to participants on menstruation and menstrual hygiene practices. The data was entered in Microsoft excel and analyzed using SPSS version 22.00.

## RESULTS

A total of 217 adolescent girls were studied. Out of them 54 were in 8<sup>th</sup> class, 95 were in 9<sup>th</sup> class and 68 were in 10<sup>th</sup> class. 41.9% mothers and 40.6% fathers of study participants were illiterates. 53.5% mothers of participants were home makers and only 3.7% fathers were unemployed. 32.3% mothers and 43.8% fathers of participants were coolies. Majority of the study subjects were belong to backward caste (56.7%) and Hindu religion (77.9%) (Table 1). Out of 217 adolescent girls studied 169 (77.9%) attained menarche and the mean age

at menarche was 12.82 years with minimum age at menarche being 11 years and maximum age at menarche being 16 years. Majority (90%) of the adolescent girls attained menarche between 12 and 14 years of age (Table 2).

**Table 1: Distribution of study subjects by social factors (n=217).**

Social factor	Frequency	Percentage (%)
<b>Class studying</b>		
8	54	24.9
9	95	43.8
10	68	31.3
<b>Education of mother</b>		
Illiterate	91	41.9
Primary school	67	30.9
High school	57	26.3
Intermediate	1	0.5
Degree	1	0.5
<b>Education of father</b>		
Illiterate	88	40.6
Primary school	55	25.3
High school	66	30.6
Intermediate	3	1.4
Degree	5	2.3
<b>Occupation of mother</b>		
Home maker	116	53.5
Government employee	8	3.7
Private employee	2	0.9
Business	20	9.2
Coolie	70	32.3
Farmer	1	0.5
<b>Occupation of father</b>		
Unemployed	8	3.7
Government employee	4	1.8
Private employee	15	6.9
Business	54	24.9
Coolie	95	43.8
Farmer	40	18.4
*One girls father died		
<b>Caste</b>		
OC	27	12.4
BC	123	56.7
SC	38	17.5
ST	29	13.4
<b>Religion</b>		
Hindu	169	77.9
Muslim	29	13.4
Christian	17	7.8
Others	2	0.9

Out of 169 girls who have attained menarche, 154 (91.12%) were having periods at regular intervals. Among 154 girls with regular menstrual cycle, majority (55.2%) had 28-31 day cycle. Out of 169 girls who had attained menarche at the time of study 75.7% told that they had blood flow during menstruation for 2-5 days, 71.6% (121) reported pain during menstruation, and 76.9% reported that they use sanitary napkins for absorption of blood during menstruation. The most common method of disposal of material used for absorption of blood during menstruation was burning (91.7%). Among 169 adolescent girls studied 45.6% reported that they change the napkin only when it is complete wet and all the girls reported washing of private parts every time napkin is changed. However only 65.7% were using soap for washing private parts (Table 3 and 4).

**Table 2: Age at first period (n=169).**

Age	Frequency	Percentage (%)
11	12	7.1
12	54	32.0
13	62	36.7
14	36	21.3
15	4	2.4
16	1	0.6
<b>Total</b>	<b>169</b>	<b>100</b>

**Table 3: Distribution of study subjects by menstrual pattern.**

	Frequency	Percentage (%)
<b>Menstrual cycle (n=169)</b>		
Regular	154	91.1
Irregular	15	8.9
<b>Gap between two cycles (n=154)</b>		
<25 days	34	22.1
26-31 days	85	55.2
32 & above	35	22.7
<b>Duration of blood flow (n=169)</b>		
2-5 days	128	75.74
6 days & above	41	24.26
<b>Pain during periods (n=169)</b>		
Yes	121	71.60
No	48	28.40

Among 169 adolescent girls who have attained menarche 33% reported restriction on household work, 94% reported restriction on attending pooja, 83.4% reported restriction on attending family functions and only 10.1% reported that they are not allowed to attend school during menstruation (Table 5). The use of sanitary napkin was not associated with literacy status of mother and father, occupation of the father, religion and caste but it was associated with mother's occupation. Out of 169 adolescent girls who have attained menarche 116 know

about menstruation before they attained menarche and the major source information for them was mother (50.9%).

**Table 4: Distribution by menstrual hygiene practices (n=169).**

	Frequency	Percentage (%)
<b>Material used for absorption of blood</b>		
Sanitary napkins	130	76.9
Cloth	4	2.4
Both	35	20.7
<b>Frequency of changing napkins</b>		
When complete wet	77	45.6
One time a day	12	7.1
Two times a day	46	27.2
Three times a day	24	14.2
Four times a day	10	5.9
<b>Washing private parts while changing napkin</b>		
Yes	169	100
No	0	0
<b>Using soap for washing</b>		
Yes	111	65.7
No	58	34.3
<b>Disposal of napkins</b>		
Flushed in toilet	3	1.8
Dustbin	7	4.1
Burning	155	91.7
Burial	4	2.4

**Table 5: Distribution of study subjects by restriction of certain activities (n=169).**

Activity	Frequency	Percentage (%)
<b>Household work</b>		
Yes	113	66.9
No	56	33.1
<b>Pooja</b>		
Yes	159	94.1
No	10	5.9
<b>Family function</b>		
Yes	141	83.4
No	28	16.6
<b>School</b>		
Yes	17	10.1
No	152	89.9
<b>Food</b>		
Yes	90	53.3
No	79	46.7

## DISCUSSION

The present study was conducted among 217 adolescent school girls, among them 169 were attained menarche. This study reported that 41.9% of mothers of the participants were illiterates. In a study conducted in an

urban community of Gandhinagar illiteracy among mothers of adolescent girls was reported as 79%.<sup>10</sup> In an another study conducted by Sarkar et al a lower illiteracy of 7.5% was reported.<sup>11</sup>

The current study showed an illiteracy rate of 40.6% among fathers of study subjects. A study conducted among adolescent girls in rural Puduchhery reported a lower literacy rate of 6% among fathers of adolescent girls.<sup>4</sup>

In the present study majority of the girls had mothers who are home makers (53.5%). A study conducted among adolescent girls in rural Puduchhery reported a little lower percentage (49.8%) of home makers among mothers of adolescent girls and another study conducted by Dasgupta, Sarkar showed an higher rate of 93.75% mothers of respondents who were homemakers.<sup>4,12</sup> Majority of fathers of study subjects were coolies in the present study (43.8%). Similar results (43.6%) were reported in a study conducted among adolescent girls in rural Puduchhery.<sup>4</sup>

The present study reported mean age at menarche as 12.82 years. Similar findings was reported by some studies (12.31 years, 12.71 years, 12.52 years, 12.8 years).<sup>2,4,5,12</sup> In the present study majority (90%) of the adolescent girls attained menarche between 12 and 14 years of age. A study conducted among adolescent girls in rural Puduchhery reported that 53.8% of girls attained menarche between 12-14y.<sup>4</sup> In an another study done by Jagruti et al reported it as 50%.<sup>10</sup>

In the present study 91.12% of the girls had regular cycles. In a study done among adolescent girls in rural Puduchhery 67.5% had regular menstrual cycle.<sup>4</sup> In the current study among 154 girls with regular menstrual cycle majority (55.2%) had 28-31 day cycle. A study conducted by Jagruti et al showed 53.5% of participants as having 28-32 day cycle.<sup>10</sup>

In our study 75.7% reported the duration of blood flow during menstruation as 2-5 days. In a study conducted by Jagruti et al the same duration of blood flow was reported by 65.9% of the respondents.<sup>10</sup>

In the present study 71.6% reported pain during menstruation. In a study among adolescent girls in rural Puduchhery 70.5% of the respondents reported pain during menstruation.<sup>4</sup>

In the current study 76.9% reported that they use sanitary napkins for absorption of blood during menstruation. Slightly higher percentage of 82.3% by Shamima et al and 89.2% by Priya et al was reported.<sup>4,13</sup> Another study by Sarkar et al reported a lower percentage of 20.8%.<sup>11</sup> In our study 20.7% used both sanitary pads and cloth where as in a study done by Dasgupta et al 40% and another study done by Sarkar et al 47.9% of the respondents used

both sanitary pads and cloth for absorption of bold during menstruation.<sup>11,12</sup>

The present study reported burning as the most common method of disposal of material used for absorption of blood during menstruation (91.7%). Whereas a study conducted by Priya et al reported that 60.8% of respondents disposed the material used for the absorption of blood by burying or burning.<sup>4</sup>

In the present study 45.6% of the girls reported to change napkin when it is complete wet, 27.2% reported to change napkin two times a day, 14.2% reported to change napkin three times a day, 5.9% reported to change napkin four times a day and 7.1% reported to change napkin one time a day. A study conducted by Priya et al reported the change of napkin, 3-5 times a day by 65.3%, 19.1% once a day, and 5.8% according to need.<sup>4</sup>

In the current study all the girls reported washing of private parts every time napkin is changed. However only 65.7% were using soap for washing private parts. A study done by Priya et al reported that 54.4% were using soap for washing private parts.<sup>4</sup> Another study conducted by Jagruti et al. reported it as 35.2%.<sup>10</sup>

Among 169 adolescent girls who have attained menarche 33% reported restriction on household work, 94% reported restriction on attending pooja, 83.4% reported restriction on attending family functions and only 10.1% reported that they are not allowed to attend school during menstruation. Other studies also reported restrictions in certain activities.<sup>11,12</sup>

Out of 169 adolescent girls who have attained menarche 116 know about menstruation before they attained menarche and the major source information for them was mother (50.9%). A study conducted by Dasgupta et al reported that 67.5% of the respondents know about menstruation before they attained menarche and another study reported it as 39.8%.<sup>10,12</sup> These studies also reported that mother is the major source of information

## CONCLUSION

The present study concludes that majority of girls had regular menstrual cycle and of them 55.2% had 28-31 day cycle. Majority (76.9%) had normal blood flow i.e., 2-5 days. The study also concluded that sanitary napkin was the most commonly used material for absorption of blood during menstruation. Burning was the most often used method for disposal of used blood absorption material. Majority of adolescent school girls know about menstruation before they attain menarche.

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