

## Research Article

# Menstrual Hygiene Practices among Adolescent Girls in a Rural Area of Kanyakumari District of Tamilnadu

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DOI: <https://doi.org/10.24321/2349.2880.201902>

## I N F O

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### How to cite this article:

Nath KR, John J. Menstrual Hygiene Practices among Adolescent Girls in a Rural Area of Kanyakumari District of Tamilnadu. *Ind J Youth Adol Health* 2019; 6(1): 8-14.

Date of Submission: 2019-01-26

Date of Acceptance: 2019-02-21

## A B S T R A C T

**Background:** Menstruation is the main pubertal change that occurs in adolescent girls and is the process of growth & maturation and prepare them for motherhood. It is surrounded by various customs, myths and taboos. For proper menstrual hygiene, requires access to appropriate materials and facilities, without which can lead to poor health consequences.

**Objectives:** To assess menstrual hygiene practices among adolescent girls in a rural area of Kanyakumari District and to find out the factors related to menstrual hygiene practices.

**Methodology:** Community based cross sectional study was conducted during January 2016 – June 2017 among 250 adolescent girls, 10-19 years of age group residing in rural area of Kanyakumari district. Adolescent girls were interviewed by a pretested interview schedule to assess their menstrual hygiene practices.

**Results:** Mean age of the study participants is 14.23 years majority of the study participants are currently school going (94.8%) and all the participants' mothers are literate. Only 32% of the adolescent girls have good menstrual hygiene practice. Education of mother, religion, socio economic status, head of the family, source of information, presence of toilet with water supply at home and genito urinary symptoms are associated with good menstrual hygiene practices.

**Conclusion:** Only one third of the adolescent girls had good menstrual hygiene practices.

**Keywords:** Adolescent Girls, Menstruation, Menstrual Hygiene

## Introduction

WHO defines adolescent as any person between ages of 10 to 19 years.<sup>1</sup> Period of transition from childhood to adulthood is said to be adolescent age. Beginning of the adolescent

age is from puberty, a process of physical, psychological and emotional development triggered by a cascade of endocrine changes, that lead to sexual maturation and reproductive capability.<sup>2</sup> The number of adolescents is all time high

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globally. In 2015, the number of adolescents were 721 million. In 2030 adolescent population is expected to be 762 million and by 2040, it will be around 755 million.<sup>3</sup> In India, there is about 243 million i.e. 21% of the total population. In 2015 it is estimated that 113 million adolescent girls.<sup>4</sup> As per 2011 census, there are about 1.24 crore adolescents in Tamilnadu. Majority of adolescents (63.16%) are in rural areas and 36.83% are from urban areas.<sup>5</sup>

Menstruation is the main pubertal change that occurs in adolescent girls and is the process of growth & maturation and prepare them for motherhood.<sup>6</sup> Onset of menstruation is known as menarche and mostly occurs at 10-16 years of age in India.<sup>7</sup> Menstruation is an integral part of women's reproductive life which starts with menarche and stop at menopause.<sup>8</sup>

Proper water and sanitation facilities are inadequate in many schools of developing countries. Adolescent girls and female teachers are facing difficulties in managing menstrual hygiene properly.<sup>9</sup> This in addition to poor sanitary protection results in various stressful and embarrassing situation, further compounded by physical problem.<sup>10</sup> Poor menstrual hygiene leads to reproductive tract infections. It's a silent epidemic that affects and devastates the life of millions of women. In older times women used variety of products to absorb menstrual flow such as mud, ashes, straw, cow dung, leaves, cotton wool etc.<sup>11</sup> But these practices are unhygienic and caused discomfort to the users, along with problem of blood leaking that leads to feeling of shame and embarrassment. Consequently, girls preferred to stay at home from school and the lack of appropriate pads is one of the principle reasons for abstinence from school among adolescent girls.<sup>12</sup> The percentage use of cloth and sanitary napkins varies from place to place within India, based on many factors such as awareness, finance, availability and social norms. Various issues like awareness, availability, quality of napkins, privacy, water supply, disposal of napkins, reproductive health education and family support, needs simultaneous attention for promotion of menstrual hygiene.<sup>13</sup>

The objectives of this study were to assess the menstrual hygiene practices among adolescent girls in a rural area of Kanyakumari District and to find out the factors related to menstrual hygiene practices.

## Materials and Methods

This cross-sectional study was carried out from January 2016-June 2017 among adolescent girls, in a rural area of Kanyakumari district Tamilnadu. The sample size was obtained by using the formula  $4pq/d^2$ . According to a previous study done by Gupta M et al.<sup>14</sup> Indore the percentage use of sanitary pads during menstruation was 67.7, the p was taken to be 67.7%  $q = 100-p = 32.3\%$ , with 6% absolute precision the sample size was estimated

to be 234. In this study we took 250 adolescent girls. Multistage sampling technique was used for the selection of samples. Kanyakumari District is divided into nine blocks. One block (Thiruvattar) was randomly selected by lottery method. Thiruvattar block consists of 10 village panchayats and 6 town panchayats. Since only rural area were taken for the study, the 10 village panchayats were included in the study. In each village panchayat there are about 15 wards. By lottery method one ward randomly chosen. From each ward by using random number table one house was chosen. From there house to house survey was done till 25 adolescent girls were obtained. If no adolescent girl presents in the household selected then next household to the right was approached till an adolescent girl fulfilling the criteria was met.

The inclusion criteria for the study were (i) girls who are in the age group of 10-19 years (number of years completed on the day of data collection is taken as age) (ii) those girls who have started menstruating and have had three cycles (iii) those girls who are permanent residents of this study area for past one year till date. The exclusion criteria were (i) those girls who were mentally challenged (ii) those girls who were not willing to participate in the study.

The subjects were interviewed with a pretested interview schedule by principal investigator. The interview schedule was developed through a pilot study conducted among 30 students in a school in Thiruvattar block. Questionnaire was divided into two parts. First part consists of socio-demographic details of the participants and second part consists of questions to assess the menstrual hygiene practices. Socio-demographic information was collected on age, type of family, education, religion, and socio-economic status. The modified BG Prasad scale was used to classify socioeconomic status. Assessment of practice were done by scoring method Questions were asked to assess the practices with regards to the type of sanitary protection used, frequency of changing pad/cloth, disposal of used pad etc. Each correct response under practice was given one point whereas wrong practice was given no mark. On the basis of median score, practice of participants was categorized into two categories namely good (above median score) and poor (below median score).

## Statistical Analysis

Data entry was made in the Microsoft Office Excel 2013. Statistical analysis was done with the help of SPSS trial version 20.0. Descriptive statistics, 95% confidence interval, Chi-square test and binary logistic regression were used for analysis of data.  $p < 0.05$  was considered as significant.

## Results

### Socio-Demographic Characteristics

The age distribution of the study group ranges from 11 to

18 years with a mean age of 14.23 years (95% CI is 14.051, 14.408) and a SD of 1.443 years. The most common age of the study participants is 14 years (28.8%). Majority of the study participants are from nuclear family (59.6%). The rest are from joint family (33.6%) and extended family (6.8%). Among the 250 adolescent girls, Christians forms the majority at 45.6% (114), followed by Hindus at 41.2% (103) and Muslims at (13.2%). Majority of the study participants belongs to lower middle class (48%) followed by middle class (34.4%). Out of 250 adolescent girls 39.6% (99) have siblings or elders who are menstruating. Majority of the study participants siblings or elders are not menstruating (60.4%). Regarding the educational status of the adolescent girls, 94.8% (237) are currently studying and rest of them are not currently studying (5.2%). About 42.8% (107) mothers have high school education, while 41.2% (103) have higher secondary education. Regarding the educational status of the participants' fathers, 45.6% (114) having high school education and 27.6% (69) having higher secondary education (Table 1).

**Table 1. Socio-demographic characteristics of study population**

Characteristics	Frequency	Percentage
<b>Type of family</b>		
Joint	84	33.6
Nuclear	149	59.6
Extended	17	6.8
<b>Religion</b>		
Hindu	103	41.2
Christians	114	45.6
Muslims	33	13.2
<b>Socio economic status</b>		
Upper class	1	0.4
Upper middle class	30	12
Middle class	86	34.4
Lower middle class	120	48
Lower class	13	5.2
<b>Education of participant</b>		
Currently studying	237	94.8
Currently not studying	13	5.2
<b>Education of mother</b>		
Primary	11	4.4
High school	107	42.8
Higher secondary	103	41.2
Graduate	28	11.2
Post graduate	1	0.4

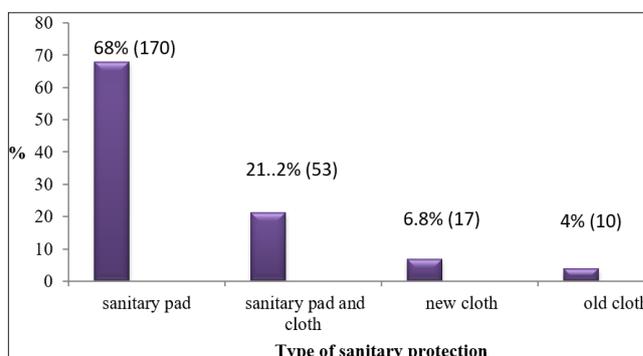
Education of father	Frequency	Percentage
Primary	32	12.8
High school	114	45.6
Higher secondary	69	27.6
Graduate	34	13.6
Post graduate	1	0.4

### Menstrual History

The mean age at menarche among all the 250 study participants was 12.17 years with a SD of 0.935. (95% confidence interval is 12.054, 12.285). Majority of the participants felt unpleasant (63.6%) at the time of menarche. Out of 250 study participants 69.2% (173) have regular menstrual cycle. Menstrual period with 5 days of menstrual flow was the most common among the study participants. Among the 250 adolescent girls, 73.2% (183) have a time interval of 21-35 days between two cycles. But 25.2% (63) have a time interval of more than 35 days between two cycles.

### Menstrual Hygiene Practices

98% (245) of the respondents have access to toilet with regular water supply at school. However only 54% (135) have similar facility at home. In this study 68% (170) adolescent girls use commercially available sanitary pad as menstrual absorbents and 21.2% (53) use both sanitary pad and cloth (Figure 1). Out of 223 adolescent girls who are using sanitary pads, only 39.91% (89) girls are allowed to make a choice on the type and brand of sanitary pad. In most cases mothers decide the type and brand of sanitary pad. Out of 89 girls who have made their own choice for choosing sanitary pad 70.8% based it on the quality. In this study 80 adolescent girls are using cloth as sanitary protection. Out of this 87.5% (70) girls are using cloth because they can't afford sanitary pad and 10% (8) are using cloth because of the lack of regular availability of sanitary pads.

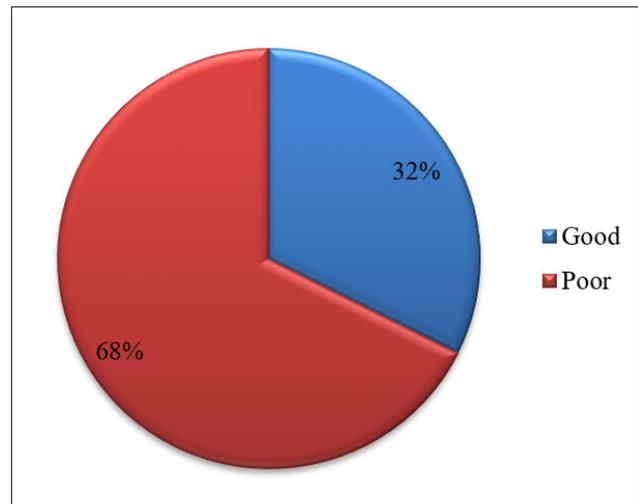


**Figure 1. Type of sanitary protection used**

Among these 80 girls, 51.25% (41) are reusing cloth during the next cycle. All of them are using water and soap for washing the cloths. 43.9% (18) dry the washed cloths

directly under the sun on a cloth line, 39% (16) dry them directly under the sun on floor and 17.1% (7) dry them under other clothes. Among the 250 adolescent girls most of them (90%) use 2 or 3 pad/cloth per day. Almost half of the study participants i.e. 48% (120) do not change the pads during menses when they are attending school, while 46% (115) change the pads at school toilet. Majority of the adolescent girls (98.8%) maintain a store of their sanitary pad/cloth. Out of 223 adolescent girls who are using sanitary pads, 47.98% girls dispose off the used pads by burning while 31.39% girls dump them outside. 55.6% (139) girls bath twice daily during menstruation and only one girl does not take bath during menstruation. Only 96 (38.4%) girls clean their private parts every time they change pad/cloth during menstruation. Water is the most commonly used material to clean private parts during menses (52.4%) and only 47.2% of girls are using soap and water. Majority of the study participants (82%) wash their hands before and after changing sanitary pads/cloth.

On the basis of median score menstrual hygiene practice of participants is divided into good and poor. Among all the study participants 32.4% have good menstrual hygiene practices (Figure 2).



**Figure 2. Practice of menstrual hygiene Factors Related to Menstrual Hygiene Practices**

Better education of mother, religion, better socio-economic status, mother as the head of the family, mother as source of information, presence of toilet with water supply at home and genito urinary symptoms have statistically significant association with good menstrual hygiene practices (Table 2).

**Table 2. Factors related to menstrual hygiene practices**

Variable		Practice		Chi-square/ Fisher's exact	P-value
		Good N (%)	Poor N (%)		
Type of family	Joint	26 (31)	58 (69)	0.241	0.887
	Nuclear	50 (33.6)	99 (66.4)		
	Extended	5 (29.4)	12 (70.6)		
Education of mother	Primary	1 (9.1)	10 (90.9)	28.298	0.001
	High school	42 (33.9)	82 (66.1)		
	Higher secondary	32 (31.1)	71 (68.9)		
	Graduate	22 (78.6)	6 (21.4)		
	Post graduate	1 (100)	0		
Religion	Hindu	42 (40.8)	61 (59.2)	6.966	0.031
	Christian	33 (28.9)	81 (71.1)		
	Muslim	6 (18.2)	27 (81.8)		
Education of participant	Currently studying	80 (33.8)	157 (66.2)	0.066	
	Not currently studying	1 (7.7)	12 (92.3)		
SES	Upper	1 (100)	0	33.891	0.001
	Upper middle	23 (76.7)	7 (23.3)		
	Middle	27 (31.4)	59 (68.6)		
	Lower middle	29 (24.2)	91 (75.8)		
	Lower	1 (7.7)	12 (92.3)		
Siblings menstruating	Yes	34 (34.3)	65 (65.7)	0.282	0.595
	No	47 (31.1)	104 (68.9)		

Head of the family	Mother	66 (29.3)	159 (70.7)	9.661	0.002
	Father	15 (60)	10 (40)		
Source of information	Mother	42 (42.9)	56 (57.1)	16.449	0.001
	Teacher	22 (28.9)	54 (71.1)		
	Friends	11 (6.7)	55 (83.3)		
	Others	6 (60)	4 (40)		
Toilet at home	Yes	69 (51.1)	66 (48.9)	46.912	0.001
	No	12 (10.4)	103 (89.6)		
Toilet at school	Yes	81 (33.1)	164 (66.9)		0.178
	No	0	5 (100)		
Genito urinary symptoms	Yes	12 (13)	80 (87)	24.902	0.001
	No	69 (43.7)	89 (56.3)		

**Table 3. Factors associated with menstrual hygiene practices**

Variable	B	S.E.	p-value	Exp (B)	95% C.I for Exp (B)	
					Lower	Upper
Education of mother	0.178	0.264	0.498	1.195	0.713	2.004
Religion	-0.555	0.285	0.051	0.574	0.328	1.003
Socio economic status	0.636	0.253	0.012	1.889	1.150	3.104
Head of the family	1.477	0.575	0.010	4.378	1.419	13.505
Source of information	-0.492	0.210	0.019	0.611	0.405	0.922
Toilet at home	-1.679	0.394	0.001	0.187	0.086	0.404
Genito urinary symptoms	0.445	0.132	0.001	1.561	1.205	2.021

The factors found to be statistically significant with practice, i.e. education of mother, religion, socio economic status, head of the family, source of information, toilet at home and genito urinary symptoms are put into the binary logistic regression model. Socio-economic status, head of the family, source of information, toilet at home and genito urinary symptoms are found to be statistically significant with practice ( $p < 0.05$ ) (Table 3).

### Discussion

We found that 54% of the participants had toilet with regular water supply at home. This might be due to the water supply given by the municipality which is not regular. Thakre SB et al. stated that 86.72% girls had toilets at home.<sup>15</sup> and Salve SB et al. reported that 25% had toilet with regular supply at home.<sup>16</sup> In our study 68% of girls used sanitary pads. Shanbhag D et al., Nagaraj C et al. and Channawar K et al. reported that 44.1%, 26.3% and 91.2% of adolescent girls used sanitary pads during menstruation.<sup>17-19</sup> Our study showed that 47.98% girls burned their sanitary pads, 31.39% girls dump their pads and 20.62% girls flush in latrines. Adhikari P et al. found that 12% of them burned and 2.27% threw in dustbin.<sup>20</sup> and rest of them dumped in separate place. Thakre SB et al. reported that method

of disposal of pads by burning was 46.9%, 45.2% of girls disposed pads in routine waste.<sup>15</sup> Channawar K et al. found that 74.1% threw their pad in dustbin and 25.8% flush in latrines.<sup>19</sup> Most of the girls (99.6%) bathed daily during menstruation in our study. Channawar K et al. and Nair P et al. reported that 87.8% and 98.4% of girls bathed daily during menstruation.<sup>19,21</sup> We found that 60% of participants clean their private parts occasionally in a day during menstruation. Shanbhag D et al. showed that 53.8% cleaned their private parts after urination all the time and 8.5% never cleaned their private parts.<sup>17</sup>

In our study we learned that 32.4% had good practice on menstrual hygiene this might be due to literate mothers. Bhattacharjee S et al. and Shanbhag D et al. found that 19.2% and 1.82% of the adolescent girls had good practice on menstrual hygiene.<sup>17,22</sup> Our study revealed that practice of menstrual hygiene was associated with education of mother, religion, socio economic status, head of the family, toilet at home, toilet at school and genito urinary symptoms. Bhattacharjee S et al. reported that practice of menstrual hygiene was associated with age, education, and marital status of the study participant.<sup>22</sup>

The limitation of the present study was, as the study is

limited to a particular rural area of Kanyakumari district it might not reflect the situation in the state as a whole. Socio-cultural factors may also differ from other parts of the state.

### Conclusion

Material environment is still not adequate to promote good menstrual hygiene practices. Only one third of the adolescent girls had good menstrual hygiene practices. Better education of mother, better socio-economic status, mother as the head of the family, mother as source of information, presence of toilet with water supply at home and school are associated with good menstrual hygiene practices. Religion also has a role to play in proper menstrual hygiene practices. Poor menstrual hygiene practices are associated with increased occurrence of genito urinary symptoms.

### Acknowledgement

We express our gratitude towards the college management for providing us the opportunity to conduct the study. We thank all the faculty of the Department of Community Medicine.

**Conflict of Interest:** None

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