

## A comparative cross sectional study of knowledge and practice of menstrual hygiene among adolescent girls in rural and urban schools of Rural Karnataka

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### Abstract

**Background:** Comprehensive knowledge about good menstrual hygiene practice right from childhood may promote safe practices and may help in mitigating the suffering of women throughout their reproductive age. Among adolescent girls there is shyness and embarrassment regarding discussions about menstruation with friends and family members which can lead to adoption of non-scientific methods during menstruation.

**Objectives:** To assess the knowledge and practices related to menstrual hygiene among rural and urban school going adolescent girls and to provide health education regarding menstrual hygiene.

**Methods:** A cross sectional study was conducted in August to October, 2015 among 220 school going adolescent girls. A pretested and structured questionnaire was used to collect data after obtaining informed consent and assent. Descriptive statistics like proportions and frequencies was computed. Chi-square test was the test of significance for qualitative data and p value of < 0.05 was considered as statistically significant.

**Results:** 220 adolescent girls were recruited in to the study. Majority of the girls were in the age group 15 years (46.8%), belonging to Hindu religion (90.9%). Urban girls attained menarche at earlier age than their counter parts in rural area. 87.3% & 65.4% of the urban and rural girls respectively used sanitary pads during menstruation. Majority of the girls from urban area (84.5%) got score of >9 for practices during menstruation whereas 52.7% of rural girls got an overall score >9. Most common reason for school absenteeism due to menstruation in both urban and rural girls was abdominal pain, second most common reason was fear of leak.

**Conclusion:** Knowledge regarding menstruation was almost similar among the girls studying in both urban and rural schools. However, the practices during menstruation were not optimal in rural girls compared to urban girls. A variety of factors like lack of sanitary latrine and adverse social customs were found to be affecting school attendance significantly.

**Keywords:** Adolescent girls, Menstrual hygiene, Knowledge and Practice

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### Introduction

According to WHO, the term 'adolescents' refers to young people between the ages of 10 and 19.<sup>1</sup> Today there are 1.2 billion adolescents, worldwide. Nearly 90 per cent of them live in developing countries, which forms eighteen percent of the world's population.<sup>2</sup> Population of adolescents in India is 250 million according to census 2011. Adolescent girls in India constitute almost 47% of total population.

The first menstruation, also called as 'Menarche' is an indicator of developmental maturation in women whose arrival determines the transition from being a child to being a teenager.<sup>3</sup> The first menstruation (menarche) occurs between 11 and 15 years with a mean of 13 years. In developing countries poor menstrual hygiene has been an insufficiently recognized problem.<sup>4</sup> There have been several cultural and religious taboos concerning menstrual blood, menstruating girls, women and menstrual hygiene.<sup>5</sup>

Many studies depicted that there is improper and inadequate care and unhygienic practices during menstruation among adolescent girls. Menstrual hygiene is neglected by girls especially in rural areas and a strong association is also found between Reproductive Tract Infections and poor menstrual hygiene.<sup>6,7,8,9</sup>

Knowledge about good menstrual hygienic practice right from early adolescence may promote safe practices and help in mitigating the sufferings of women throughout their reproductive age. Among adolescent girls there is shyness and embarrassment regarding discussions about menstruation with friends and family members hence they are at risk of adopting nonscientific practices during menstruation. Hence, this study was intended to assess the knowledge and practices among adolescent girls during menstruation.

### Objectives

1. To assess the knowledge and the practices of menstrual hygiene among rural and urban school going adolescent girls.
2. To provide health education regarding menstrual hygiene to improve the awareness.

### Materials and Methods

Adolescent school girls (10-19 years) were enrolled from two schools (one from rural & one from urban)

around the field practicing area of a Rural Medical College. This was a cross sectional study conducted for a period of six months. Sample size was calculated based on the knowledge of use of sanitary pads from the study by Shubhash B Thakre et al with the urban knowledge at 60.5% and rural knowledge at 30.82%. With  $\alpha$  at 0.01 and power at 90%, sample size of 88 was obtained for each group, and assuming 20% non-response rate minimum required sample size was 105 subjects in each group. Simple random sampling was done to select the girls in each school after obtaining the sampling frame of the selected school.

Permission was taken from the respective school authorities and teachers of class 8<sup>th</sup> to 10<sup>th</sup> standard, the participants were also explained regarding the purpose of the study. Informed consent was obtained from the parents and assent was obtained from girls before enrolment. Pretested and structured questionnaire was used to collect data by interview method. Questionnaire consisted of demographic profile, clinical Profile, knowledge and practices regarding menstruation. The questionnaire also included questions to elicit information regarding restrictions imposed on participants during menstruation and reasons for school absenteeism during menstruation. Prior Institutional Ethics Committee clearance was also obtained for the conduct of study.

Data was compiled in Microsoft excel and SPSS statistical software 22 version was used to analyse the data. Descriptive statistics like proportions and frequencies were computed. Chi-square test was the test of significance for qualitative data and p value of < 0.05 was considered as statistically significant.

## Results

Knowledge and practices on menstrual hygiene among 220 adolescent girls was assessed in the study. 110 adolescent girls from each urban and rural school were recruited for equal representation. Majority of the girls were in the age group 15 years (46.8%), belonging to Hindu religion (90.9%). 52.7% of the mothers of the girls from rural school were illiterates and 16.3% of

urban mothers were illiterates. This difference in mother's educational status was statistically significant (Table 1).

The mean age of menarche among adolescent girls was  $13.43 \pm 2.45$  years and  $12.93 \pm 3.3$  years in Rural and Urban areas respectively. 32.7% of Urban and 8.1% of rural girls attained menarche by 12 years. This difference in age of menarche was statistically significant. Whereas other aspects of knowledge such as cause, sanitary pads and origin of blood though higher in urban girls statistically significant difference was not observed (Table 2).

Significant differences were observed between two groups pertaining to hygienic practices during menstruation. Majority of subjects i.e. 87.3% & 65.4% of the urban and rural girls respectively used sanitary pads during menstruation. All the subjects from urban locality (100%) and 83.6% of rural girls used >2 absorbent pads per day. Among those who used cloth as absorbent, a majority of them used satisfactory method of washing. i.e., 94.7% (rural) and 92.8% (urban) used soap and water to wash the menstrual cloth. Cloth used was disposed off in dustbins in 61.8% of urban and 27.3% of rural girls. 13.4% of rural girls reused clothes more than three times. Higher percentage of girls from rural background cleaned genitalia >4 times.

Scoring was used to assess the practices during menstruation. Maximum score of '3' (Three) and minimum of '0' (Zero) was assigned to the questions related to practices during menstruation. Majority of the girls from urban area (84.5%) gained good scores (i.e. overall score >9) whereas 52.7% of rural girls got an overall score >9. Urban girls had significantly better hygienic practices during menstruation than rural girls (Table 4).

Most common reason for school absenteeism in both urban and rural girls during the period of menstruation was abdominal pain, second most common reason being the fear of leakage. Among these various causes for school absenteeism, only lack of sanitary latrine ( $p=0.003$ ) and prohibitive social customs ( $p=0.009$ ) were found to have statistically significant difference between the rural and urban girls (Fig. 1).

**Table 1: Demographic characteristics of the study subjects (N=220)**

		Residence				P value
		Rural (n=110)	%	Urban (n=110)	%	
Age (in years)	13	17	15.4%	22	20%	0.07
	14	42	38.2%	36	32.7%	
	15	51	46.4%	52	47.3%	
Religion	Hindu	104	94.5%	96	87.3%	0.11
	Muslim	4	3.6%	6	5.4%	
	Christian	2	1.9%	8	7.3%	
Mother's education	Illiterate	58	52.7%	18	16.4%	0.001*
	Literate	52	47.3%	92	83.6%	

**Table 2: Information about menarche and perception about menstruation (n=220)**

		Rural (n=110)	%	Urban (n=110)	%	P value
Age of menarche (in years)	12	9	8.2%	36	32.7%	0.001*
	13	49	44.5%	50	45.5%	
	14	48	43.7%	20	18.2%	
	15	4	3.6%	4	3.6%	
Knowledge before menstruation	Yes	52	47.3%	50	45.5%	0.073
	No	58	52.7%	60	54.5%	
Cause of menstruation	Hormone	63	57.3%	85	77.3%	0.70
	Other	47	42.7%	25	22.7%	
Knowledge about sanitary pads	Yes	99	90.0%	108	98.2%	0.66
	No	11	10.0%	2	1.8%	
Origin of blood	Any other	60	54.5%	33	30.0%	0.57
	Uterus	50	45.5%	77	70.0%	

**Table 3: Practice of menstrual hygiene**

	Residence				$\chi^2$	df	P value
	Rural		Urban				
	Count	%	Count	%			
Absorbent Used							
Cloth (Score = 1)	20	18.2	4	3.6	16.38	2	0.0002*
Cloth and pad (Score = 2)	18	16.4	10	9.1			
Pad (Score 3)	72	65.4	96	87.3			
Absorbents used /day							
<2 (Score 0)	18	16.4	0	0	19.6	1	<0.001*
>2 (Score 1)	92	83.6	110	100			
Washing menstrual clothes							
Water (Score = 0)	2	5.2	1	7.1	0.066	1	0.79
Soap and water (Score = 1)	36	94.7	13	92.8			
Drying of cloth							
Outside the house with exposure to sunrays (Score = 2)	8	21.1	7	50	0.066	1	0.094#
Inside house with exposure to sunrays (Score = 1)	23	60.5	3	21.4			
Other* (Score = 0)	7	18.4	4	28.5			
Disposal of cloth/pad							
Dustbin (Score = 3)	30	27.3	68	61.8	36.8	3	<0.001*
Landfill (Score = 1)	40	36.4	16	14.5			
Latrine (Score = 2)	23	20.9	24	21.8			
Other (Score = 0)	17	15.4	2	1.8			
Reuse of cloth							
>3 times (Score = 0)	15	13.4	1	0.9	36.8	2	<0.001*
<3 times (Score = 1)	23	20.9	21	19.1			
Not applicable	72	65.4	88	80			
Cleaning of genitalia							
<2 (Score = 0)	25	22.7	7	6.3	17.05	2	<0.001*
2-4 (Score = 1)	57	51.8	88	80			
>4 (Score = 2)	28	25.4	15	13.7			

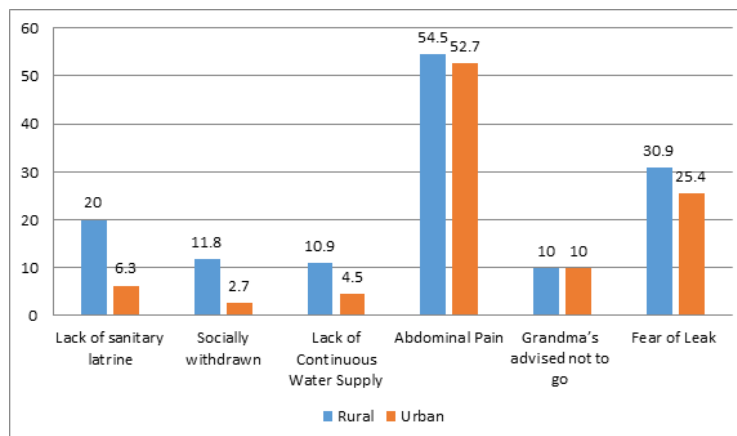
\*Other: Inside/Outside the house without exposure to sunlight

# Fischer's exact test

**Table 4: Scoring for Practice among Subjects**

Total Score	Residence				Total
	Rural		Urban		
	Count	%	Count	%	
Poor (score <9)	52	47.2	17	15.4	69
Good (score >9)	58	52.7	93	84.5	151
Total	110	100	110	100	220

$\chi^2 = 25.87, df = 1, p < 0.001^*$



**Fig. 1: Bar diagram showing reasons for Absenteeism among adolescent schools**

**Discussion**

Menstrual hygiene and practices assessment in adolescent girls shows that mean age of menarche was found to be 13.18 years. Similar age of menarche was observed in the studies by Thakre SB et al, Girls in urban area attained menarche earlier than rural area.<sup>9</sup> The mean age of menarche among adolescent girls was 13.43±2.45 years and 12.93±3.3 years in Rural and Urban areas respectively. This can be attributed to improvement in social, nutritional and economic condition of the Society.<sup>10</sup> Kamath R et al observed no difference in mean age at menarche was 12.39±0.908 and 12.31±0.984 in urban and rural schools respectively.<sup>11</sup> In the present study the knowledge regarding menstruation before menarche was present among 47.5% of rural and 45.5% of the urban girls. Knowledge was slightly higher in rural girls compared to urban girls. Similar observation in knowledge was made by Kamath et al i.e. 33.27% and 35.82% of the urban and rural participants respectively had awareness about menstruation prior to menarche.<sup>11</sup> Shubha Dube also made similar observation in their study.<sup>12</sup> The presence of prior awareness regarding menstruation among adolescent girls is very much essential as menarche is an important event in the reproductive life of a woman.

It was found that literacy status of mothers of urban subjects was higher than that of those from rural areas; similar finding was found in another comparative study done in Kolkata.<sup>13</sup> Literacy state of the mother is of prime importance since they are the early and main informants regarding knowledge and hygiene practices related to menstruation to these young adolescent girls as

shown in various studies. Knowledge regarding cause of menstruation and source of menstrual blood was more among urban than rural girls. About 54.5% and 30% of the rural and urban girls were unaware of the source of menstrual blood. The findings are consistent with other studies with respect to the cause and source of menstrual blood.<sup>13</sup> This poor state of knowledge regarding menstruation is an important issue to be addressed, especially the rural-urban difference. This may be attributed to the poor level of health education at schools and the inhibitions due to various socio-cultural factors to openly discuss regarding menstruation. Almost all the girls 98.2% of urban and 90% of rural girls had knowledge regarding the use of sanitary pads.

Hygienic practices during menstruation is of utmost importance as poor hygiene has direct implications on the health of reproductive tract and makes them more prone to infections of not only the reproductive but also urinary tract infections (UTI). The findings regarding the practices during menstruation among adolescent girls is consistent with findings in other similar studies across the country.<sup>12,13</sup> Higher percentage of girls from urban area were using sanitary pads than rural girls; most of them changed the absorbent more than twice per day. A study by Anju Ade in Raichur observed that 65% of the rural adolescents used sanitary pads.<sup>14</sup> Yasmin N et al observed usage of sanitary pads in 82.2% of urban girls.<sup>15</sup> Use of sanitary napkin was higher in the urban area (75.9%) compared to rural participants (65%) in the study by Kamath et al.<sup>11</sup>

Majority of the girls both in urban and rural areas were found to wash the cloth used during menstruation

in a satisfactory manner as set by the criteria for this study and also chose an appropriate way of drying the cloth. The major method used to dispose the absorbent was into the dustbin among urban subjects, whereas it was the landfill method chosen by the rural subjects which was relatively unsatisfactory as per the set criteria and scoring system of the study. The frequency of cleaning the genitalia was found to be satisfactory among 80% in urban, were as only 51.8% among the rural adolescents.

The study concludes that though there was no difference in Knowledge regarding menstrual hygiene among rural and urban girls, there were significant differences observed in practices during menstruation. Urban girls were practicing good hygienic practices than rural girls; this can be attributed to Socio economic status, standard of living, education status of mother and various other factors. Hence various measures such as social marketing for sanitary napkins, improving literacy status of girls (future mothers), and removing the myths and taboos associated with Menstrual hygiene and practices by health education from teachers and health care personnel. A variety of factors like lack of sanitary latrine and being socially withdrawn were significantly affecting school attendance. Hence improving the conditions in schools such as building separate toilets for girls can improve the practices and school attendance.

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**Conflict of Interest:** Nil

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