

Original Research Article

MENSTRUAL HYGIENE MANAGEMENT PRACTICES AMONG ADOLESCENT GIRLS OF LUCKNOW DISTRICT

Geeta Singh¹, Monika Agarwal², Anish Khanna³, V.K. Singh⁴, Rekha Sachan⁵

¹Associate Professor, Department of Community Medicine, MSDASMC, Bahraich, Uttar Pradesh, India.

²Professor & Head, Department of Community Medicine and Public Health, KGMU Lucknow, Uttar Pradesh, India.

^{3,4}Professor, Department of Community Medicine and Public Health, KGMU Lucknow, Uttar Pradesh, India

⁵Professor, Department of Obstetrics and Gynaecology, KGMU Lucknow, Uttar Pradesh, India.

Received : 28/08/2026
Received in revised form : 20/09/2026
Accepted : 25/09/2026

Corresponding Author:

Dr. Monika Agarwal,
Professor & Head, Department of
Community Medicine and Public
Health, KGMU Lucknow, Uttar
Pradesh, India.
Email: monicaag51@gmail.com

DOI: 10.70034/ijmedph.2026.4.29

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2026; 16 (4); 192-199

ABSTRACT

Background: Menstrual hygiene deals with the special health care needs and requirements of women during monthly menstruation or menstrual cycle. If poorly managed, menstrual period may be accompanied by discomfort, reproductive tract infection, smelling and embarrassment among others. **Aims and Objective:** To assess the menstrual hygiene practices among adolescent girls.

Materials and Methods: A cross-sectional study was carried out school going adolescent girls of Lucknow district. The study population were school going adolescent girl in the age group of 10 -19 years. Data regarding menstrual hygiene practices were collected and analysed.

Results: Overall, 43.2.% girls with 49.5% urban girls and 30.0% rural girls used sanitary napkin only as menstrual absorbent while 27.8% urban girls and 40.0% rural girls used both (sanitary pad and cloth). 22.8% urban and 30% rural girls used cloth. There was a significant difference between use of sanitary pad in urban and rural girls.

Conclusion: In present study that significant association was observed between use of sanitary pad in urban and rural girls, educational status of mother, religion. They ignore menstrual hygiene practices. There are many reasons for all these issues.

Key words: Menstrual hygiene practice, Adolescent girls, schools.

INTRODUCTION

The World Health Organization defined adolescence as being between ages of 10-19 years, encompassing the entire continuum of transition from childhood to adulthood. Adolescents represent 23% of population of India.^[1]

Menstrual hygiene deals with the special health care needs and requirements of women during monthly menstruation or menstrual cycle. If poorly managed, menstrual period may be accompanied by discomfort, reproductive tract infection, smelling and embarrassment among others. Learning about hygiene during menstruation is a vital aspect of health education for adolescent girls as patterns that are developed in adolescence are likely to persist into adult life.^[2]

Good hygienic practices, such as use of sanitary pads and adequate washing of the genital areas, are essential during menstruation period.^[3]

Poor menstrual hygiene comes in the way of achieving the several Millennium Development Goals like MDG 2,3,5,7 and 8,^[4] MDG 2 (Achieve universal primary education) Menstruation is an important cause of absenteeism and even school dropout.

MDG 3 (promotes gender equality and empowered women). Taboos and misconceptions regarding menstruating girls and menstrual hygiene evolve in gender inequality and degradation of women empowerment.

MDG 5 (Improve maternal health) Poor menstrual hygiene causes Reproductive Tract Infection which is a morbidity that is suffered by many women with

hushed silence. Cancer of the cervix, which is the commonest cause of cancer among women in India, is another morbidity whose risk factor is poor reproductive tract hygiene.

MDG 7 (Ensure environmental sustainability). Indiscriminate disposal of sanitary napkins and other absorbent materials is not ecologically friendly.

MDG 8 (Global partnership for development). Absence of a structured programme or policy for upliftment of menstrual hygiene, thus neglecting MDG.

Very recently ARSH in NRHM is promoting menstrual hygiene through free distribution of sanitary napkins to adolescent girls especially in rural areas. The aim of present study was to assess the menstrual hygiene practices among adolescent girls in Lucknow District.

MATERIALS AND METHODS

According to the census 2011 the Lucknow district has a population of 45,88,4553 urban population 3037781 and rural population 1550737 (66.2% and 33.8%) respectively. This study was conducted in Government and Government aided schools of urban and rural areas of Lucknow from September 2014 to August 2015. The study population was school going adolescents' girls of age group 10 to 19 years. It was Cross-sectional descriptive study. **Inclusion criteria** were School going adolescents' girls in the age group of 10 -19 years whom menarche started and are studying in class VIII, IX, X, XI and XII. **Exclusion criteria** 1. The girls whom age was below 10 years, and menarche was not started 2. Associated with any chronic or medically diagnosed conditions and unable to comprehend the study questionnaire.

Sampling done by taking sample size.

The required sample size was calculated by using following formula:

$$n = (Z\alpha/2)^2 \times p \times (1-p) / d^2$$

n=sample size

z=value of Z statistic at $\alpha/2$ level of significance

p= prevalence of knowledge regarding menstruation taken as 50% (Juyal R. et al. (2012),^[5])

d = allowable error = 5%

z statistics: for 0.05/2 the level of significance the value is 1.96.

Based on the probability the knowledge regarding menstruation is 50%. No reliable data available. So $n = (2)^2 \times 0.5 \times 0.5 / (0.05)^2 = 400$

Since the subjects are chosen by multistage random sampling a design effect due to complex sample design comes into picture. Taking into account design effect of 1.5, the sample size will be (used to adjust design effect in multistage random sampling) the total sample size, $n = 400 \times 1.5 = 600$.

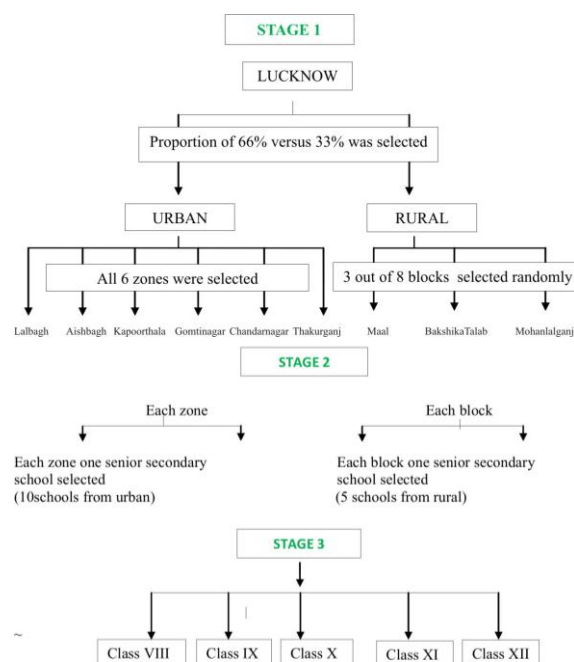
Sampling design: multi-stage sampling technique was used to select the requisite number of sample size. Adolescent were selected from urban and rural areas in the ratio of 2:1.

First stage: At first stage, Lucknow district was divided into urban and rural areas. In urban Lucknow that has six zones., all were selected and in rural Lucknow out of 8 blocks, 3 blocks were selected randomly.

Second stage: At the second stage, from each zone one senior secondary school was selected randomly from the listed senior secondary schools. Similarly rural Lucknow was divided into eight blocks of which 3 blocks were randomly selected. In the next step from each block, one senior secondary school was randomly selected from listed senior secondary schools. Of the total of 15 senior secondary schools selected 10 were from urban and 5 were from rural area.

Third stage: At the third stage, in a given school, student from classes VIII to XII of age group 10-19 years were selected. Students within the class were selected through systematic random sampling.

By using the multistage sampling technique, 400 adolescent girls were chosen from 10 schools in the urban area and 200 adolescents' girls were chosen from 5 schools from the rural area adding to a total of 600 study subjects.



From each class eight students were selected randomly. An average of 10 students were selected from each class in each school adding up to a total of 750 students from 15 schools to meet the required sample size of 600.

Data collection: Data were collected using a pre designed and pre tested interview and examination schedule which consisted of five parts. The questionnaire was also translated in local language (Hindi) for the convenience of students. After getting permission and other documents like list of schools from the District Inspector of Schools, Shiksha Bhawan, Lucknow schools were selected as mentioned in the sampling technique. When the

schools were approached, immediately consent from the principal in-charge of the school was obtained and also approbation of the teachers whose period was bestowed for the data collection. Verbal consent was taken from each selected participant to confirm willingness. Honest explanation of the survey purpose, description of the benefits and an offer to answer all inquiries was made to the respondents. Also, affirmation that they are free to withdraw consent and to discontinue participation without any form of prejudice was made. Later, the students were asked to gather in a separate hall and an attempt was made to convince all the students fulfilling inclusion criteria to participate in the study after informing them about the aims, objectives and likely benefits which would accrue from the study. As the questionnaire was self-administered type, caution was taken for missing values and each & every question was explained delicately even repeated if they didn't understand. Complete confidentiality and anonymity of the respondents was maintained. Furthermore, on collating the questionnaire back heedfulness was ensued to rectify missing values and if at all the repletion not possible on the same day, efforts were made for the same on the next day of visit to same school. A total of 600 students fulfilling the inclusion and exclusion criteria were enrolled for the study. Students practice of menstrual hygiene score

was calculated out of practice specific questions (Table 2 and Table 3). Each correct response earned one point, where as any wrong or do not know response attracted no marks. In here the sum score of practice was calculated (7 points), where the mean score of practice of menstrual hygiene (4.17+ _1.22) was used to decide the cutoffs of the rank. Good practice of menstrual hygiene was given to those respondents who scored 4-7 points and poor practice of menstrual hygiene was given to those respondents who scored 0-3 points.

Data Analysis: Done by using SPSS software Probability (p) was calculated to test for statistical significance at the 5% level of significance. Association between knowledge and independent factor was determined using Chi Square test. The continuous variables were described as mean $\pm$ standard deviation. The categorical variables were presented in terms of their frequencies and proportions. For comparison of means between the groups, independent t-test was used. In order to test the association between attributes, Pearson's chi-square test/Fisher's exact test were used. A p-value of less than 0.05 have been considered as significant. Multivariate binary logistic regression analysis was done to rule out factors associated with hygiene practices during menstruation.

RESULTS

Table 1: Biosocial characteristics of study population

Variables	Urban (n=400)		Rural (n=200)		Total (n=600)	
	No.	%	No.	%	No.	%
Age group (years)						
10-13	44	11.0	18	9.0	62	10.3
14-16	285	71.2	137	68.5	422	70.3
17-19	71	17.8	45	22.5	116	19.4
Mean age $\pm$ SD	15.11 $\pm$ 1.43		15.40 $\pm$ 1.4		15.21 $\pm$ 1.42	
	p-value: 0.249					
Current schooling						
8-9	119	29.8	34	17.0	153	25.5
10-12	281	70.2	166	83.0	447	74.5
	p-value: 0.001					
Religion						
Hindu	309	77.2	173	86.5	482	80.2
Muslim	90	22.5	26	13.0	116	19.3
Sikh	1	0.3	1	0.5	2	0.5
	p-value: 0.021					
Category						
General	218	54.5	70	35.0	288	48.0
OBC	116	29.0	82	41.0	198	33.0
SC/ST	66	16.5	48	24.0	114	19.0
	p-value: 0.000					
Type of family						
Nuclear	260	65.0	131	65.5	391	65.2
Joint	140	35.0	69	34.5	209	34.8
	p-value: 0.904					
Education of mother						
Illiterate	124	31.0	107	53.5	231	38.50
Up to Primary	62	15.5	31	15.5	93	15.50
Up to secondary	56	14.0	17	8.5	73	12.16
Up to High school	70	17.5	27	13.5	97	16.16
Up to Higher secondary	52	13.0	17	8.5	69	11.50
Graduate and above	36	9.0	1	0.5	37	6.10
	p-value: 0.999					

Socio economic status *						
I(upper)	15	3.8	3	1.5	18	3.0
II (middle)	41	10.3	2	1.0	43	7.2
III (lower middle)	42	10.5	3	1.5	45	7.5
IV (upper lower)	91	22.8	29	14.5	120	20.0
V(lower)	211	52.1	163	81.5	374	62.0
		p-value: 0.000				
*(Modified BG Prasad SES May 2014)						

The middle adolescents (70.3%) with contribution from urban and rural had been 71.2% and 68.5% respectively. The mean age of the study population was 5.2 years. Of the total, 74.5% were from classes 10th to 12th standards (70.2% in urban & 83.0% in rural) and 25.5% were of classes 8th and 9th standards (29.8% in urban & 17.0% in rural). There was significant difference between class of girls of urban and rural setting. Of the total 600 study population maximum were Hindus (80.2% with 77.2% from urban & 86.5% from rural) followed by Muslims (19.3% with 22.5% from urban & 13.0% from rural). This difference in distribution was statistically significant between religion of urban and rural girls. General caste adolescent was 48% (54.5% in urban & 35.0% in rural), OBC were 33.0% (29.0% in urban & 41.0% in rural) and other caste were 19.0% (16.5% in urban & 24.0% in rural) and the difference was statistically significant. Of the total,

65.2% belonged to nuclear family (65% in urban and 65.5% in rural) and only 34.8% belonged to joint family (35.0% in urban and 34.5% in rural). As per education of mothers of the adolescent girls were concerned, total illiterates were 38.5% (31.0% from urban & 53.5% from rural), up to primary were 15.5% (15.5% in urban as well as rural up to secondary education were 12.2% (14.0% in urban & 8.5% in rural), while those who finished high school, higher secondary and graduates were 16.2%, 11.5% and 6.1% respectively. There was a statistically significant difference between the urban and rural girls in relation with the socioeconomic status with the proportion in urban being 3.8%, 10.3%, 10.5%, 22.8% & 52.1% and rural being 1.5%, 1.0%, 1.5%, 14.5% & 81.5% respectively belonging to the socioeconomic status I, II, III, IV& V (Modified BG Prasad SES May 2014).

Table 2: Menstrual absorbent use and hygiene management practices

Variable	Urban		Rural		Total		p-value
	No.	%	No	%	No	%	
Menstrual absorbent used during menstruation	n=400		n=200		n=600		
Only sanitary pads	198	49.5	60	30.0	258	43.2	0.00
Only clothes	91	22.8	60	30.0	151	25.1	0.04
Both (sanitary pad+ cloth)	111	27.8	80	40.0	191	31.8	0.00
Reason for inconstant use or non-use of sanitary pads	n= 202		n = 140		n=342		
High cost	98	48.5	68	49.0	166	48.8	0.07
Unaware of sanitary pads	12	5.9	10	7.2	22	6.5	
Not know where to avail for pads	92	45.5	62	44.0	154	45.0	
Reuse of clothes as absorbent	n= 198		n= 139		n=342		
Yes	65	32.7	72	55.3	140	41.1	0.00
No	135	66.3	67	44.7	202	58.9	
Practice & washing absorbent for reuse	n= 87		n= 53		n=140		
Water & soap and dried in sunlight	50	56.8	30	57.6	80	57.1	0.87
Water and dried in shade	25	28.4	15	28.8	40	28.6	
Water, soap, antiseptic, sunlight dried	12	30.2	8	13.6	20	14.3	
Chi-square test/Fisher's exact test used; p-values that are bold indicates significance at p<0.05							

Overall 43.2% girls with 49.5% urban girls and 30.0% rural girls used sanitary napkin only as menstrual absorbent while 27.8% urban girls and 40.0% rural girls used both (sanitary pad and cloth). 22.8% and 30% girls in both urban and rural schools' girls used cloth. There was significant difference between urban and rural school's girls with sanitary napkins use and cloth and both (sanitary pad and cloth). Overall, 48.8.% girls were not using sanitary pad due to high cost, while 45% were not aware of where sanitary pads are available and only 6.5 % girls were unaware of use of sanitary pads with no

significant difference found between urban and rural girls. Overall, 41.0 % girls with 33.7 urban girls and 55.3 % rural girls were reusing cloths. The difference was significant between urban and rural girls. Overall, 57.1% girls were washing their cloths with water and drying them under sunlight while only 30.2% urban girls and 13.58% rural girls used antiseptic for wash cloths and dried in sunlight. Overall 28.6 girls dry their clothes in shade. No significant difference observed between urban and rural setting regarding washing of reused cloths.

Table 3: Personal hygiene practices during menstruation

Variables	Urban (n=400)		Rural (n=200)		Total (n=600)	
	No.	%	No.	%	No.	%
Frequency of Changing of pads per day						
Once	43	10.8	42	21.0	85	14.2
Twice	148	37.0	82	41.0	230	38.3
Thrice	137	34.2	60	30.0	197	32.8
> than 3 times	72	18.0	16	8.0	88	14.7
	p-value =0.000					
Washing of hands while changing pads						
Yes	383	95.8	190	95.0	573	95.5
No	17	4.2	10	5.0	27	4.5
	p-value = 0.676					
Material used for washing of hands (n=570)						
Water and soap	357	93.2	179	94.2	536	93.5
Water Only	26	6.8	11	5.8	37	6.5
	p-value = 0.721					
Bathing during menstruation						
Every day	261	65.2	152	76.4	413	68.9
Alternate day	83	20.8	37	18.6	120	20.0
Not during menses	56	14.0	11	5.0	67	11.1
	p-value = 0.006					
Regular washing of genitals						
Yes	349	87.2	162	81.0	511	85.2
No	51	12.8	38	19.0	89	14.8
	p-value = 0.04					
Material used for washing genitals during menstruation (n=511)						
Water only	122	35.5	50	30.9	172	33.6
Water with soap	224	64.2	111	68.5	335	65.6
Other (antiseptic)	3	0.8	1	0.6	4	0.8
	p-value = 0.62					
Chi-square test/Fisher's exact test used; p-values that are bold indicates significance at p<0.05						

Overall, 14.7% girls with 18% urban girls and 8% rural girls were changing their sanitary pads more than three times. While 37 % urban girls and 41 % rural girls were changing their pads two times a day. There was significant association between changing of sanitary pads and place of school. Overall, 68.9% girls with 65.2% urban girls and 76.4% rural girls were bathing every day during menstruation. Overall, 85.2% girls with 87.2% urban school girls and 81.0%

rural school girls washed their genitals during menstruation. Overall, 65.5% girls (urban 64.2% and rural 68.5%) use water and soap for washing genitals during menstruation. With no difference between urban and rural was water and soap for cleaning of genitals followed by 35.5 %urban schools' girls and 39.9% rural schools' girls who used water respectively.

Table 4: Menstrual absorbent disposal practices

Variable	Urban (n=400)		Rural (n=200)		Total (n=600)	
	No.	%	No.	%	No.	%
Absorbent disposal at home						
Proper *	336	84.3	118	59.0	454	75.6
Burial in pits	45	11.3	74	37.0	119	19.9
Thrown in open fields	19	4.4	8	4.0	27	4.5
	p-value=0.000					
Provision of sanitary napkin by the schools when required						
Yes	302	75.5	69	34.5	371	61.8
No	98	24.5	131	65.5	229	38.2
	p-value = 0.000					
Changing of absorbents during school hours						
Yes	153	38.2	43	21.5	196	32.7
No	247	61.8	157	78.5	404	67.3
	p-value = 0.000					
Absorbent disposal during school hours	n=153		n=43		n=196	
Wrapped in paper and thrown in dustbin	144	94.1	37	86.1	181	92.4
Thrown in open field	7	4.6	5	11.6	12	6.1
Thrown unwrapped in dustbin	2	1.3	1	2.3	3	1.5
	p-value = 0.000					
Reason for not change absorbent in school	n=247		n=157		n=404	

No place for disposal	94	38.1	57	36.3	151	37.4
No privacy in toilets	82	33.2	68	43.3	150	37.1
No soap	49	19.8	57	36.3	106	26.2
No water	30	12.2	25	15.9	55	13.6
Toilets not available	33	13.4	27	17.2	60	14.8
No need felt	27	10.9	12	7.6	39	9.6
* Wrap in paper and discard in emptied bin						
Chi-square test/Fisher's exact test used; p-values that are bold indicates significance at p<0.05						

Overall, 75.6% girls with 84.3% urban schools' girls and 59% rural schools' girls dispose sanitary pad in proper place while 11.3% urban schools' girls and 37. % rural schools girls dispose sanitary pads improperly by burying the sanitary pads followed by 4.4% urban school girls and 4% rural school girls who dispose their sanitary pads in open fields. The difference was significant between urban and rural girls for disposing of pads. Overall, 32.7% girls with 38.2% urban schools' girls and 21.5% rural schools' girls did change their sanitary pads during schools' hours. There was a significant difference between urban and rural girls for practice of changing of pads during school hour.

During school hour overall 92.4% schools' girls disposed sanitary pads in dustbin while 4.6 % urban schools' girls and 11.63% rural schools' girls disposed sanitary pads in open fields followed by 1.3 and 2.3% urban and rural schools' girls respectively who threw sanitary pads without wrapping.

Overall 37.4% girls with 38.1% urban schools girls and 36.3% rural schools girls said that there was no place for disposing sanitary pad followed by 33.2% urban school girls and 43.3% rural school girls was said that there was no privacy in toilets for changing pads followed by 19.8% urban schools girls and 36.3% rural schools girls said that there was no soap for washing hands in the school followed by 12.2% urban schools girls and 15.9% rural school girls that there was no water facility in the schools followed by 13.2% urban school girls and 17.2% rural school girls said that no toilet facility available in the school followed by 10.9% urban school girls and 7.6% rural school girls said that they had no need to change pad because they already changed them at home. Overall, 61.8% girls with 75.5% urban school girls and 34.5% rural schools' girls said that schools provide sanitary pads when required. The difference was statistically significant.

Table 5: Factors affecting menstrual hygiene practices

Variable	Good 243 40.5		Poor 357 59.5		P value
Age	No	%	No	%	P=0.912
10-13	24	9.9	38	10.6	
14-16	172	70.8	247	69.2	
17-19	47	19.3	72	20.2	
Class*					P=0.255
8-9	56	23.0	97	27.2	
10-12	187	77.0	260	72.8	
Religion*					P=0.000
Hindu	223	91.8	259	72.5	
Non-Hindu	20	8.2	98	27.5	
Category					P=0.596
General	118	48.6	170	47.6	
OBC	76	31.3	124	34.7	
SC/ST	49	20.2	63	17.6	
Mothers' education*					P=0.000
Illiterate	73	30.0	158	44.3	
Literate	170	70.0	199	55.7	
Type of school*					P=0.000
Urban	190	78.2	210	58.8	
Rural	53	21.8	147	41.2	
Type of family*					P=0.246
Nuclear	165	67.9	226	63.3	
Joint	78	32.1	131	36.7	
Socioeconomic status*					P=.0.002
Upper	36	14.8	25	7.0	
Lower	207	85.2	332	93.0	

*Chi-square test/fisher exact test is used p<0.05 is taken as significant

As the data obtained, out of total respondents 243, (40.5%) of the respondents had good practice on menstrual hygiene. 70.8% girls had good menstrual hygiene practice were in the age group 14-16 years while 69.2% girls had poor hygiene practices. Only 9.9% girls in 10-13 years age group had good hygiene

practice while 10.6% girls in the same age group had poor hygiene practice, while 19.3 % girls had good hygiene practice and 22.6% had poor hygiene practice and both of them belonged to 17-19 years age group. The difference was not statistically significant between age group and menstrual hygiene

practices.23% girls studying in class 8 and 9 and 77% girls studying in class 10-12 had good hygienic practices during menstruation. 91.8 % Hindu school girls had good hygiene practices during menstruation while 72.5% had poor hygienic practices while in non-Hindus 8.2% school girls had good hygiene practices and 27.5% had poor hygienic practices. The difference was statistically significant between religion and hygiene practices during menstruation. 48.6% school girls belonged to general category had good hygiene practices while 47.6% had poor hygiene practices, 31.3 % belonged to Other backward classes had good hygiene practice while 34.7% school girls belonged to same category had poor hygiene practices and 20.2% school girls belonged to schedule caste or schedule tribe had good hygiene practice while 17.6% girls had poor hygiene practice. 30% school girls had good hygiene practices while 44.3% girls had poor hygiene practices during menstruation due to mother illiteracy.70% school girls had good hygiene practices due to literacy of mother while 55.7% had poor hygiene practices. The

difference was statistically significant between mothers' education and hygiene practice. 78.2% urban girls had good hygiene practices during menstruation while 58.8% girls had poor hygiene practice.21.8% rural school girls had good hygiene practices while 41.2% girls had poor hygiene during menstruation. The difference was statistically significant between place of school and hygiene practices.

67.9% girls in nuclear families had good hygiene during menstruation while 63.3% school girls had poor hygiene during menstruation.32.1% girls in joint families had good hygiene during menstruation while 36.7% girls had poor hygiene during menstruation. The difference was statistically not significant between type of family and hygiene practices. 14.8% school girls who belonged to upper class had good hygiene during menstruation while 7.0% girls had poor hygiene. 85.2% school girls belonged to lower class had good hygiene practice during menstruation while 93% had poor hygiene during menstruation.

Table 6: Association between factors affecting of practice of menstrual hygiene by multi logistic regression analysis

Variable	Hygiene practice				Crude OR	Adjusted OR
	Good		poor		OR(CI)	OR(CI)
Type of school	No.	%	No.	%		
Urban	190	78.2	210	58.8	1	1
Rural	53	21.8	147	41.2	2.50(1.73-3.63)	2.630(1.77-3.906)
Socioeconomic status						
Upper	36	14.8	25	7.0	1	1
Lower	207	85.2	332	93.0	2.31(1.34-3.95)	1.49(.841-2.645)
Religion						
Hindu	223	91.8	259	72.5	1	1
Non-Hindu	20	8.2	98	27.5	4.219(2.52-7.04)	4.975(2.93-8.44)
Education of mother						
Illiterate	73	30.0	158	44.3	1	1
literate	170	70.0	199	55.7	1.849(1.31-2.61)	1.53(1.05-2.22)

1=Reference category

Urban school girls had two and half times increased odds [OR-2.63; CI (95%),1.77-3.90] in hygiene practices compared to rural school girl. The girls belonged to Hindu religion had about to five times increased odds [OR-4.97; CI (95%) ,2.93-8.44] in hygiene practices compared to girls belonged to non-Hindu religion. The school girls who mothers were illiterate had one and half times increased odds [OR-1.53; CI (95%) 1.056-.2.21] in hygiene practice compared to literate mothers.

DISCUSSION

During menstruation hygiene related practices are of considerable importance as it affects health by increasing vulnerability to infection especially the infections of urinary tract. In the present study it was found that the overall 43.5% with 49.5% urban girls and 30% rural girls used sanitary pads as menstrual absorbent. In accordance to Subhash B Thakre et al. [6] It was found that significantly more (60.6%) urban girls were using sanitary pad as compared to rural (30.8%) girls. The reason is that sanitary pads are not

easily available in the schools and also its high cost. The finding was significantly associated. In our study reused cloths in rural schools was 55.3 while in urban schools it was 32.7%. Similar findings were observed in accordance with study done by Juyal, R et al. [5] Because we had taken mainly Government school in both urban and rural area where sanitary napkins were not available and girls mainly belongs to low socioeconomic status and cost of napkins are high and 45% girls do not know where sanitary pads are available. In the present study more than half of girls wash the cloth with soap and water and dried them under sunlight. Only more than one fourth girls wash with water and dried in shade. Similar finding was found by the Kamath R et al, [7] those rural girls dried their clothes in shade. In our study overall says that 38 % girls changing their pads two times a day (urban 37%and rural 41%) while 33% girls (urban 34%and rural 30%) change their pads thrice a day and 14.2%(11% urban and 21%rural girl) change their pads once a day . similar finding was found by study done by Shanbhag, et al. (2012). [8] The difference was significant. The reason for is lack of knowledge. In present study it was observed that out of total girls

studied overall 68.9% with 65.2% urban school girls and 76.4% rural school girls were bathing every day during menstruation. The findings are contradictory with Shanbhag D. et al. (2012) in which 88% girls take bath every day during menstruation. The bathing during menstruation was significantly associated. In present study it was observed that out of total girls studied overall 85.2% with 87.2% urban school girls and 81.0% rural school girls had washing their genitals during menstruation, similar finding was also found study done by Shanbhag, et al. (2012). Overall, 95.5% school girls doing wash their hands while changing of pads, similar finding was found in the study done by Omidvar, et al. (2009).^[9] In present study Overall 600 ,75.6% dispose sanitary pad in dustbin with 84% urban and 59% rural school girls. Similar finding was found in study of Dasgupta et al. (2008) ^[10] in which dustbin was the most commonly used in both urban (69%) and rural (45%) schools. In the present study 61.8% urban girls and 78.5% rural school girls did not change pads they're during school hour due to lack of proper facilities of toilets. The study conducted by Rain D,etal.,(2014) ^[11] in which the 84% girls does not change their pads during school hour. In our study 243girls (41%) of the respondents had good practice of menstrual hygiene in contrast 357(60%) girls had poor knowledge of menstrual hygiene. The study conducted by Esther Umahi Nnennaya, et al. ^[12], a higher proportion of adolescents with good knowledge 171 (82.61%) had good menstrual hygiene practices. In contrast, respondents who had poor knowledge all had poor practice 90 (100%). Thus, the reason for the observed difference was due to lack of awareness, religion, educational status of mothers and locality of schools.

CONCLUSION

The present study, we found that most of girls did not have proper knowledge about menstruation. They ignore menstruation hygiene practices. They avoid for changing pads on regular basis. There are many reasons for all these issues. Following are some important suggestions which can be drawn from the present study: There should be privacy in the schools & at home. Girls should try to motivate their parents to build the toilet in homes, so there should be privacy and sanitation. They should be educated about proper disposal of sanitary napkins. Health educator, Asha worker should ask to parent's problems during menstruation of girls and should motivate parents for proper advice if girls suffered problems of menstruation like irregular pattern. Girls should warn about UTI. If they are facing the problems like discharge per vagina then they should asked consult their parents, health worker & other medical practitioner. Preferably girls and family should be

clarified about superstition by schools' authorities and active participation in school in maintaining menstrual hygiene practices. Provision of adequate WASH facilities at school - water, gender-segregated and clean latrines, hand washing facilities with soap - is a necessary prerequisite for menstrual hygiene management in schools.

Acknowledgement: we are grateful to the department of community medicine KGMU Lucknow for doing this research. We also grateful to all the unknown respondents who participated in this study.

Funding: There was no funding for this research.

Ethical consideration: The research is approved by institutional ethical community.

REFERENCES

1. Ghai OP. Adolescent health, Essential Paediatrics, 7th edition. New Delhi: CBS Publishers; 2009. 42.
2. Lawan UM, Yusuf NW, Musa AB. Menstruation and menstrual hygiene amongst adolescent school girls in Kano, Northwestern Nigeria. Afr J Reprod Health. 2010;14(3):2017.
3. Narayan KA, Srinivasa DK, Pelto PJ, Veeramal S. Puberty rituals, reproductive knowledge and health of adolescent schoolgirls in South India. Asia-Pac Popul J. 2001;16(2):225–38. [Google Scholar]
4. Menstrual Hygiene: A Neglected Condition for the Achievement of Several Millennium Development Goals. Available at: http://www.eepa.be/wcm/documents/BGpaper_MenstrualHygiene.pdf. Accessed April 4 2012.
5. Juyal R, S D Kandpal, Jayanti Semwal, K S Negi. Practices of Menstrual Hygiene Among Adolescent Girls in A District of Uttarakhand. Indian Journal of Community Health.2012; 24(2) :124-128
6. Thakre SB, Thakre SS, Reddy M, Rath N, et al. Menstrual hygiene: Knowledge and practice among adolescent school girls of Sooner, Nagpur district. J Clin Diagnostic and Res. 2011;5(5):1027–33.
7. Kamath R, Ghosh D, Lena A, Chandrasekaran V. A study on knowledge and practices regarding menstrual hygiene among rural and urban adolescent girls in Udipi Taluk, Manipal, India. Glob J Med Public Heal. 2013;2(4)1–9.
8. Shanbhag D, Shilpa R, D'Souza N, et al., Perceptions regarding menstruation and practices during menstrual cycles among high school going adolescent girls in resource limited settings around Bangalore city, Karnataka, India. Int J Collab Res Intern Med Public Heal 2012;4(7):1353–62.
9. Omidvar S, Begum K. Factors influencing hygienic practices during menses among girls from south India- A cross sectional study. Int J Collab Res Intern Med Public Heal [Internet]. 2010;2(12):411–23.
10. Dasgupta A, Sarkar M. Menstrual Hygiene: How Hygienic is the Adolescent Girl? Indian J Community Med. 2008;33(2):77–80.
11. Raina D, Baladi G. Menstrual Hygiene: Knowledge, Practise and Restrictions Amongst Girls of Dehradun, Uttarakhand, India. 2014;3(4):156–62.
12. Nnennaya E. U., Atinge S, Dogara, S. P., & Ubandoma, R. J. (2021). Menstrual hygiene Taraba state, Nigeria. African Health Sciences,21(2),842851.<https://doi.org/10.4314/ahs.v21i2.45>.