



# Appraisal of Knowledge, Attitude and Practice of Menstruation among Rural and Urban Adolescent Girls of District Bareilly

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## ABSTRACT

**Introduction:** The manner in which a girl learns about menstruation and its associated changes may have an impact on her response to the event of menarche.

**Material & Methods:** In the present study adolescent girls aged 10-19 years, attending 6<sup>th</sup> to 10<sup>th</sup> class in the selected government and private schools willing to participate, were included in the study.

**Result:** Nearly three fourth of urban girls 156 (74.3%) and two-third 139 (66.2%) of rural girls knew that menstruation is a normal physiological process. More number of urban adolescent girls 145 (69.1%) as compared to rural 127(60.5%) stated that it is important to maintain cleanliness during menstruation. Almost half of the adolescent girls 176(48.3%) were found to use sanitary pads during menstruation.

**Conclusion:** Overall, menstrual practices are better in the urban area as compared to rural area. Still, there is need for sensitizing the adolescent girls and increasing their knowledge towards menstrual practices. An integrated menstrual education program should emphasize the physiological basis of menstruation.

**Keywords:** Adolescence, Menstruation, Knowledge, Attitude, Practices

## INTRODUCTION

World health organization has defined 'Adolescence' as the period between 10-19 years of life.<sup>1</sup> Globally, adolescent girls constitute about 1/5<sup>th</sup> of total female population. While in India, adolescent girls account for a little more than one-fifth of the population (21.4%).<sup>2</sup> Adolescence is a changeover period from child to adult life during which pubescent development take place.<sup>3</sup>

Menarche is an indicator of developmental growth in women which determines the switch from being a child to being a youth. Menstruation is a normal physiological process indicating the beginning of reproductive life but sometimes it is considered as unclean phenomenon in the Indian society.<sup>4</sup> Menstrual hygiene management has been defined as:

'Women and adolescent girls using a clean material to absorb or collect blood, using soap and water for washing the body, and having access to facilities to safely dispose the used menstrual management materials.<sup>5</sup> However, menstrual hygiene is not just about the management of the menstrual period but also essential to state the communal attitudes and taboos adjoining the problem. Menstruation is still regarded as something unclean or dirty in Indian society and it is strongly related with misconceptions and cultural restrictions.<sup>6</sup>

The manner in which a girl learns about menstruation and its associated changes may have an impact on her response to the event of menarche. Although menstruation is a natural process, it is linked with several misconceptions and practices, which sometimes result into adverse health out-

comes.<sup>7</sup> Insufficient, incorrect information regarding menstruation is often a cause of unnecessary restrictions in the daily normal activities of the menstruating girls creating various psychological issues. Besides, the lack of knowledge and awareness also lead to some poor personal hygienic practices during menstruation leading to many reproductive tract infections.

Menstrual hygiene depends upon the educational, socioeconomic, and cultural status of family. School curriculums also have some role in menstrual health. Unfortunately, however, there is gross lack of information on menstrual preparedness and management among adolescent girls, a situation made worse by the shyness and embarrassment with which discussions about menstruation is treated. Sustainable development goal 3 strives to ensure health and well-being for all, at every phase of life. To achieve this goal, they must have repeated reinforcement of knowledge especially regarding menstruation, gained at a younger age persist for longer and in turn leading to reduction in Reproductive Tract Infection (RTI) and achieving the goal of reducing maternal mortality.

Moreover poor personal hygiene and unsafe sanitary conditions have also primarily resulted in gynecological problems among the adolescent girls.<sup>8</sup> There have also been high prevalence of reported cases of infections due to lack of hygiene during menstruation.<sup>9</sup> Women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to RTI and its consequences. Therefore, increased knowledge about menstruation right from childhood may escalate safe practices and may help in mitigating the suffering of millions of women. Menstrual hygiene information is also a fundamental aspect of health education. It is known that attitudes to menstruation and menstrual practices developed at menarche may persist throughout life. Assessing the knowledge regarding menstruation, attitude towards understanding menstruation and hygienic methods practiced during menstruation by the adolescents can be used as a baseline tool for formulating health education strategies relevant. With this background the present study was undertaken to appraise the knowledge, attitude and practices regarding menstruation among the adolescent school girls of district Bareilly, Uttar-Pradesh.

## OBJECTIVE

The study was conducted to appraise the knowledge, attitude and practices regarding menstruation among the adolescent girls of rural and urban school girls and also to ascertain the association between knowledge, attitude, practices of rural

and urban adolescent girls regarding Menstruation and to assess the source of information about menarche before its onset among rural and urban adolescent girls.

## MATERIAL & METHODS

**Study Design:** Descriptive cross sectional study.

**Study Area:** The present study was conducted at randomly selected government and private schools located in the areas served by Urban Health Training Centre (UHTC) and Rural Health Training Centre (RHTC) of Department of Community Medicine, Shri Ram Murti Smarak Institute of Medical Sciences (SRMS IMS) at Bareilly, Uttar Pradesh.

**Study Population:** Study population comprised of adolescent girls studying in the selected government and private schools in the urban and rural area.

**Study Subjects:** Adolescent girls aged 10-19 years, attending 6<sup>th</sup> to 10<sup>th</sup> class in the selected government and private schools willing to participate were included in the study.

**Sample size estimation:** Menstruation being the most common aspect of reproductive health was taken as the basis for calculating the sample size. The prevalence of awareness regarding the onset of menstruation prior to attainment of menarche among school going adolescent girls was found to be 67% in a study conducted by **Dasgupta and Sarkar et al.**<sup>7</sup> Based on these figures, a sample size of 210 was calculated taking allowable error as 10% of prevalence and applying the standard formula, as follows:

**Sample size** was calculated using formula  $n = \frac{pq}{d^2}$ , where  $p$  = Positive character (67.0%),  $q = 100 - \text{Positive character} = (33.0 \%)$  and  $d = \text{Allowable error (Relative error} = 6.7\%)$ . The calculated sample size was 190. Considering another 10% of sample size to be non-response rate, the sample size came out as 209 which were rounded-off to 210. Finally 210 adolescent girls surveyed from schools in both rural as well as urban area each making a total sample size of 420.

**Sampling Procedure: Procedure for selection of schools in rural & urban area:** Separate enlisting of all government and private schools in rural and urban area were done. There were two government and three private schools in rural area and seven government and ten private schools in urban area. One government school and one private school were selected by simple random sampling from the separate lists of school. The government school selected in urban area was Bareilly Inter

College, Bareilly and the private school selected was Woodrow Public School, Rampur Garden, Bareilly. The government school selected in rural area was Bharat Inter College, Bhojipura, Bareilly and the private school selected was Handa Public School, Modern Village, Abhaypur, Bareilly.

**Selection of study subjects in schools:** First of all, permission was sought from the principal of the selected schools in rural and urban area and then from each school, a complete roll number list of all students studying in classes 6<sup>th</sup> to 10<sup>th</sup> was obtained and 21 girls meeting the inclusion criteria and not falling in exclusion criteria were selected using simple random sampling and surveyed from each class. Any girl found absent for three subsequent visits was replaced by one of the remaining girls in the respective class till the requisite number of girls from each class was selected.

**Study Tool:** An instrument for the survey was developed after reviewing the available literature. After explaining the purpose of the study and obtaining oral consent, the study was conducted using predesigned semi-structured questionnaire including brief socio-demographic information and questions related to knowledge, attitude and practices of menstruation.

**Methodology of Data Collection:** Visits were made to the schools and information about the purpose of study was given to all study subjects, rapport was developed and face-to-face interview with school going adolescent girls in the school premises at a private place provided by the school management was conducted. The girls were picked randomly, one at a time, from the roll number list of respective classes using random number table. If any girl was found absent on the day of interview, maximum of two more attempts were made to contact the girl and interview her in subsequent visits and even if found absent on two consecutive visits, then that girl was excluded from the study. In the end, after the interview, the girls were given health education and counselled in areas where their knowledge was lacking and needed reinforcement.

**Statistical Analysis:** Data was entered using Microsoft Excel 2010 and statistical analysis was done using IBM SPSS v 20.0.0. Categorical variables were analysed using proportions and percentages. Association between categorical variables was established by Chi square test. Z test was used for testing of proportion.

**RESULT**

Majority of the girls 214 (50.9%) were in mid adolescence (14-16 years) & nearly three-fourth of study participants 313(74.5%) belonged to nuclear

family. Predominantly the subject’s father 168(40.0%) had completed their high school education and 201(47.8%) father was skilled worker by occupation. While 149 (35.5%) of sample’s mother had completed their primary education and majority of rural mother 172(81.9) were housewives compared to 135(64.3) of urban mothers by occupation. More than half of rural subjects belonged to middle and upper lower socio-economic status 132(62.8%) wherein, predominantly urban subjects belonged to upper middle and middle class 144 (68.5%) according to modified BG Prasad classification. **(Table 1)**

**Table 1: Demographic characteristics of study population (n=420)**

Variables	Rural (n=210)	Urban (n=210)	Total (n=420)
<b>Age (in years)</b>			
10-13	74(35.2)	81(38.6)	155(36.9)
14-16	101(48.1)	113(53.8)	214(50.9)
17-19	35(16.7)	16(7.6)	51(12.1)
<b>Type of Family</b>			
Nuclear	141(67.1)	172(81.9)	313(74.5)
Joint	69(32.8)	38(18.1)	107(25.5)
<b>Father’s Education</b>			
Illiterate	52(24.7)	19(9.0)	71(16.9)
Primary	73(34.7)	79(37.6)	152(36.2)
High-school	77(36.7)	91(43.4)	168(40.0)
Intermediate & above	8(3.8)	21(5.0)	29(6.9)
<b>Mother’s Education</b>			
Illiterate	74(32.4)	26(12.4)	100(23.8)
Primary	68(32.4)	81(38.6)	149(35.5)
High-school	55(26.2)	83(39.5)	138(32.8)
Intermediate & above	13(6.2)	20(9.5)	33(7.8)
<b>Father’s Occupation</b>			
Unskilled worker	9(4.3)	3(1.4)	12(2.8)
Skilled worker	114(54.3)	87(41.4)	201(47.8)
Clerical/ Shop owner	73(34.7)	48(22.8)	121(28.8)
Semi-professional	11(5.2)	37(17.6)	48(11.4)
Professional	3(1.4)	35(16.7)	38(9.0)
<b>Mother’s Occupation</b>			
Housewife	172(81.9)	135(64.3)	307(73.1)
Working	38(18.1)	75(35.7)	113(26.9)
<b>Socio-economic status</b>			
Upper	7(3.4)	28(13.3)	35(8.3)
Upper Middle	23(10.9)	58(27.6)	81(19.3)
Middle	71(33.8)	86(40.9)	157(37.4)
Upper Lower	61(29.0)	26(12.4)	87(20.7)
Lower	48(22.8)	12(5.7)	60(14.3)

Figure in parenthesis indicate percentage

**Table 2: Knowledge regarding menstruation among the adolescent girls (n=420)**

	Rural (n=210) (%)	Urban (n=210) (%)	Total (n=420) (%)	z-test	p-value
<b>Understanding of Menstruation</b>					
Normal Physiological Process	139(66.2)	156(74.3)	295(70.2)	1.8	0.07
Abnormal Phenomenon	38(18.1)	39(18.5)	77(18.3)	0.12	0.80
Curse	23(9.0)	7(3.4)	30(7.1)	3.03	<b>0.002</b>
Others	10(4.7)	8(3.8)	18(8.0)	0.24	0.80
<b>Source of Menstrual Bleeding</b>					
Uterus	51(24.3)	88(41.9)	139(33.1)	3.83	<b>0.000</b>
Urinary tract	19(9.0)	11(5.2)	30(7.1)	1.5	0.120
Vagina	22(10.5)	24(11.4)	46(10.9)	0.312	0.750
Don't know	118(56.2)	87(41.4)	205(48.8)	3.03	<b>0.002</b>
<b>Average Length of cycle</b>					
<2 days	5(2.4)	3(1.4)	8(1.9)	0.71	0.470
3-5 Days	187(89.0)	195(92.8)	382(90.9)	1.36	0.170
> 5 Days	4(1.9)	5(2.4)	9(2.1)	0.33	0.730
Don't know	14(6.6)	7(3.4)	21(5.0)	1.56	0.117

**Table 3: Attitude of adolescent girls towards menstruation (n=420)**

Response	Rural (n=210) (%)	Urban (n=210) (%)	Total (n=420) (%)	$\chi^2$	df	p value
<b>Given more information about menstruation</b>						
Yes	134(63.8)	146 (69.5)	280(66.7)	1.543	1	0.214
No	76(36.2)	64 (30.5)	140(33.4)			
<b>Menstruation is a bothersome event</b>						
Yes	101(48.1)	85 (40.5)	186(44.3)	2.47	1	0.116
No	109(51.9)	125 (59.5)	234(55.7)			
<b>Onset of menstruation can be anticipated and predicted</b>						
Yes	124 (59.1)	142 (67.6)	266(63.3)	3.32	1	0.068
No	86 (40.9)	68 (32.4)	154(36.7)			
<b>Important to maintain cleanliness during menstruation</b>						
Yes	127 (60.5)	145 (69.1)	272(64.7)	3.38	1	0.065
No	83 (39.5)	65 (30.9)	148(35.2)			

**Table 4: Practices of adolescent girls during menstruation (n=420)**

Response	Rural (n=188)* (%)	Urban (n=176)# (%)	Total (n=364) (%)	$\chi^2$	df	p value
<b>Restrictions practices</b>						
Yes	142 (75.5)	126 (71.6)	268 (73.6)	0.727	1	0.390
No	46 (24.5)	50 (28.4)	96 (26.4)			
<b>Use of material during menses</b>						
Sanitary Pad	66(35.1)	110(62.5)	176(48.3)	27.3	2	<b>0.001</b>
Old cloth	113(60.1)	61(34.6)	174(47.8)			
New cloth	9(4.8)	5(2.8)	14(3.8)			
<b>Disposal of used material</b>						
Throw in Dustbin	47(25.0)	101(57.4)	148(40.6)	44.0	3	<b>0.000</b>
Bury in ground	25(13.3)	8(4.5)	33(9.0)			
Burn it	90(47.8)	59(33.5)	149(40.9)			
Throw on road side	26(13.8)	8(4.5)	34(9.3)			
<b>Absent from school during menses</b>						
Yes	84(44.7)	72(40.9)	156(42.8)	0.528	1	0.467
No	104(55.3)	104(59.1)	208(57.2)			
<b>Bathing during menses</b>						
Yes	103(54.7)	94(53.4)	197(54.2)	0.07	1	0.790
No	85(45.3)	82(46.6)	167(45.8)			
<b>Frequency of Bathing(n=197)</b>						
Every day	64(62.1)	64(68.0)	128(64.9)	4.95	2	0.08
Alternate day	29(28.1)	28(29.7)	57(28.9)			
Less than alternate day	10(9.7)	2(2.1)	12(6.2)			

\*Out of 210 rural girls, 22 (10.5%) had not attained menarche and #out of 210 urban girls, 34 (16.2%) had not attained menarche. So they were not included in the total.



**Table 5: Knowledge source of adolescent girls regarding menstruation practices**

Source of Information	Rural (n=188) (%)	Urban (n=176) (%)	Total (n=364) (%)	Z test	p value
Mother	66(35.1)	67(38.0)	128(35.1)	0.10	0.916
Teacher	5(2.6)	14(7.9)	19(5.2)	2.11	<b>0.034</b>
Friends	63(33.5)	35(19.8)	98(26.9)	3.23	<b>0.001</b>
Grandmother	9(4.8)	4(2.3)	13(3.6)	1.40	0.16
Elder Sister	48(25.5)	61(34.6)	109(29.9)	1.40	0.15
Media	7(3.7)	8(4.5)	15(4.1)	0.26	0.79
Others	5(2.6)	3(1.7)	8(2.2)	0.71	0.47

\*Multiple Responses

On assessing their knowledge on the process of menstruation, nearly three fourth of urban girls i.e. 156 (74.3%) and two-third 139 (66.2%) of rural girls knew that menstruation is a normal physiological process. More urban girls 88 (41.9%) than rural 51(24.3%) were aware of uterus being the source of menstrual bleeding. Larger majority of respondents in both rural 187 (89.0%) and urban 195(92.8%) were aware of the average length of the menstrual cycle i.e. 3-5 days. (Table 2)

Out of 420 adolescent girls, about two-third of study subjects 280 (66.7%) expressed the need for more information regarding menstruation of which more urban subjects 146 (69.5%) than rural counterparts 134(63.8%) felt that they should be given more information regarding menstruation. Nearly half of rural subjects 101(48.1%) felt that menstruation is a bothersome event compared to less number of urban subjects 85(40.5%). On being asked whether the onset of menstruation can be anticipated and predicted, more urban subjects 142 (67.6%) than rural 124(59.1%) hold the view about the anticipation and prediction of menstruation. More number of urban adolescent girls 145 (69.1%) as compared to rural 127(60.5%) stated that it is important to maintain cleanliness during menstruation. (Table 3)

While assessing the practices of menstruation, out of 420 adolescent girls who participated in the study, 364(86.7%) had attained menarche and 56(13.3%) did not have the onset of menstruation. Out of them, more than three-fourth 142(75.5%) of rural girls were following restrictions during menses as compared to less number of urban subjects 126(71.6%) and it was insignificant ( $p>0.05$ ) statistically. In rural areas, the use of sanitary pads was among 66(35.1%) girls and in urban areas, 110 (62.5%) girls used sanitary pads and this difference was found to be statistically significant ( $p = 0.001$ ). With respect to the method of disposal of the used absorbent, more than half of urban girls i.e. 101(57.4%) and one fourth of rural girls 47(25.0%) the method of disposal was throwing the absorbent material in dustbin. This difference was found to be statistically significant ( $p=0.00$ ). Almost 84 (44.7%) of rural girls and 72(40.9%) urban girls

were not going school during the menses and it was insignificant ( $p>0.05$ ) statistically. More than half of rural 103(54.7%) and urban adolescent girls 94(53.4%) were found to take bath during the menses. This difference was found to be statistically insignificant ( $p>0.05$ ) (Table 4)

Among the 364 girls, 128(35.1%) girls mothers was the major source of knowledge regarding menstruation followed by elder sister 109(29.9%).The main source of information regarding menstruation among rural subjects was mother 66 (35.1%) followed by friends 63(33.5%).Among the urban subjects, mother was the major informant 67(38.0%) followed by elder sister 61(34.6%). (Table 5)

## DISCUSSION

**Bio-Social characteristics of school going adolescents:** In the present study, majority of the girl 214 (50.9%) were in mid adolescence age (14-16 years) and nearly three-fourth of study participants 313(74.5%) belonged to nuclear family. Majority of the subject's father 168(40.0%) had completed their high-school education and 149 (35.5%) of sample's mother had completed their primary education. The findings are comparable to Bhattacharjee et al<sup>10</sup> study where majority of the girls (326 out of 798) were in mid adolescence (14-16 years). On the contrary, Sapdoka et al<sup>11</sup> in their study found that most of the adolescents girls 41 (75.4%) were in the age group of 15-19 year. Study done by Kumar et al<sup>12</sup> where predominant family type was nuclear family (65.43%), majority of cases father's education level was of high school or higher secondary (60%) and mother's educational level majority (57%) were of high school and below.

**Knowledge regarding menstruation:** Majority of respondents in both rural 187 (89.0%) and urban 195(92.8%) were aware of the average length of the menstrual cycle i.e. 3-5 days, while 14(6.6%) and 7(3.4%) of rural and urban subjects respectively had no knowledge regarding the average length of the menstrual cycle. In the present study, nearly three fourth of urban girls 156 (74.3%) and two-third 139 (66.2%) of rural girls knew that menstrua-

tion is a normal physiological process and more urban girls 88 (41.9%) than rural 51(24.3%) were aware of uterus being the source of menstrual bleeding. Kamath R et al<sup>13</sup> in their study found that on assessing for knowledge on the process of menstruation, 72.2% (n=195) of urban and 68.9% (n=193) of rural adolescent girls knew that menstruation is a normal physiologic process and 19.3% (n=52) of urban girls and 21.8% (n=61) of rural girls stated that they knew about the source of menstrual bleeding. Majority of the respondents in both urban (91.9%, n=248) and rural (92.1%, n=258) were aware about the normal duration of menstrual cycle i.e. 3-5 days. On the contrary, Juyal et al<sup>14</sup> found that only 29.1% of the respondents had knowledge about the reproductive system as the source of bleeding.

**Attitude regarding menstruation:** Out of 420 adolescent girls, about two-third of study subjects 280 (66.7%) expressed the need for more information regarding menstruation, nearly half of rural subjects 101(48.1%) felt that menstruation is a bothersome event compared to less number of urban subjects 85(40.5%). More urban subjects 142 (67.6%) than rural 124(59.1%) hold the view about the anticipation and prediction of menstruation. More number of urban adolescent girls 145 (69.1%) as compared to rural 127(60.5%) stated that it is important to maintain cleanliness during menstruation. The findings of study are comparable to study by Bhattacharjee et al<sup>10</sup> who found that more than half of the girls (439 out of 798) attributed menstruation to a debilitating event, 356 agreed that menstruation is a bothersome event and about 585 of them thought of it as a natural event. 526 (65.9%) girls agreed that the onset of menstruation could be predicted and anticipated. The findings of study is contrary to the findings of Sapdoka D et al<sup>11</sup> where majority of the respondents (62.3%) did not believe that maintaining personal hygiene is related to menstrual problems. However, among 37.7% who reported that poor personal hygiene leads to menstrual problems, more than half (52.2%) believed that poor hygiene can cause irregular menstruation, heavy flow or dysmenorrhoea.

**Practices regarding menstruation:** In the present study, out of 420 study subjects, 364(86.7%) had attained menarche. Dasgupta et al<sup>7</sup> where majority of study subjects had menarche in age group of 12-13 years. The findings are also comparable to study by Thakre et al<sup>4</sup> where majority of the girls 283 (73.1%) attained menarche in the age group of 12-13 years. On the contrary, Patil S.M. et al<sup>15</sup> reported that most of the study subjects (58.1%) had attained menarche at 14-16 years. Almost half of the adolescent girls 176(48.3%) were found to use sanitary pads during menstruation in the present

study. The findings of present study are in accordance with Thakre et al<sup>4</sup> who observed that 191(49.35%) girls used sanitary pads during menstruation, 177 (45.74%) girls used old cloth pieces and 19(4.90%) used new pieces of clothes. The findings of present study is comparable to Kamaljit et al<sup>16</sup> who found that nearly one third (31.0%) of the respondents were ignorant about the use of sanitary pad during menstruation. 69.0% of the respondents were using sanitary pads during menstruation whereas clean cloth was being used by 63 (23.0%) while (10.0%) were practicing any cloth or rag or cotton. In the present study it was found that majority of the girls; 149 (40.9%) burned it followed closely by 148 (40.6%) who threw it in dustbin and only few 33(9.0%) buried in ground. In more than half of urban subjects 101(57.4%) and one fourth of rural subjects 47(25.0%) the method of disposal was throwing the absorbent material in dustbin. The findings of present study are in accordance with Thakre et al.<sup>4</sup> who found that a majority of the girls; 202 (52.20%) burned it, 154 (39.79%) threw it with the routine waste and 26 (6.72%) used other methods of disposal.

**Source of information regarding Menstruation:** The main source of information regarding menstruation among rural subjects was mother 66 (35.1%), followed by friends 63(33.5%). Among the urban subjects, mother was the major informant 67(38.0%) followed by elder sister 61(34.6%). The findings is similar to the findings of Sapdoka et al<sup>11</sup> study where majority (39.3%) responded that mothers were their main source of information followed by sisters and friends each accounting for 18%. The findings of study is similar to the findings of Dasgupta et al<sup>7</sup> study where among 160 respondents, mother was the first informant only in case of 60 (37.5%) girls. Juyal et al<sup>14</sup> in her study found that out of 292 respondents who were having previous information regarding menarche, friends were the first informant in about 91 (31.2%) girls and mothers in 91 (31.2%) girls.

## CONCLUSION

Overall, menstrual practices are better in the urban area as compared to rural area. Still, there is need for sensitizing the adolescent girls and increasing their knowledge towards menstruation. An integrated menstrual education program should emphasize the physiological basis of menstruation. A scientific understanding of menarche is vital to prepare teenage girls to be physically, emotionally, socially, psychologically and spiritually healthy, leading to a flamboyant, proactive and a well-knit society and nation. Universalized use of sanitary pads can be advocated to every girl only by mak-

ing it available at affordable prices through social marketing.

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