

## Original Research Article

# Reproductive and sexual health knowledge along with menstrual hygiene practices among late adolescent girls 15-19 years in an urban slum

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### ABSTRACT

**Background:** Many biological changes occur in the body of girls during the adolescent period. Menstruation, an important natural process, is linked with several perceptions and practices which may result in adverse health outcome.

**Methods:** The study was conducted among late adolescent girls in the age group of 15-19 years. Details of their socio demographic profile, knowledge about growing up changes, menstruation, pregnancy and contraception, Reproductive tract infections, sexually transmitted infections and HIV/AIDS. Their source of information regarding the same was also enquired into. Their menstrual hygiene practices were also asked in detail.

**Results:** The girls in this study were mostly Hindus, around 16 years of age, belonged to nuclear families, lived in pukka houses, only half of them had a sanitary latrine in their house, and majority of the girls had their mother's educated up to middle school. Knowledge about puberty, especially physical changes was better than that about conception, pregnancy and contraception and STI/RTI and HIV. However, adequate menstrual hygiene was practiced only by a few of them. Girls who had symptoms related to RTI/STI were seen to have poor knowledge.

**Conclusions:** Importance of focusing on menstrual hygiene and reproductive health among adolescent girls, should start early and should be regularly reinforced to minimize the risk of infections.

**Keywords:** Late adolescent girls, Menstrual hygiene practices, Reproductive and sexual health knowledge, Urban slum

### INTRODUCTION

WHO defines 'adolescents' as individuals in the 10-19 years age group.<sup>1</sup> Adolescence is a continuum of physical, cognitive, behavioral and psychosocial change that is characterized by increasing levels of individual autonomy, a growing sense of identity and self-esteem and progressive independence from adults.<sup>2</sup>

Adolescence in girls has been recognized as a special period in their life cycle that requires specific and special attention. This period is marked with onset of menarche.<sup>3</sup>

The first menstruation is often horrifying and traumatic to an adolescent girl because it usually occurs without her knowing about it. Although menstruation is a natural process, it is linked with several perceptions and practices, which sometimes result in adverse health outcomes.<sup>4</sup>

Poor menstrual hygiene can lead to reproductive tract infections. Various socio-demographic factors are expected to affect menstrual hygiene practices in adolescent girls in lower income families.

The present study was done in late adolescent girls in an urban slum to study the knowledge about reproductive and sexual health and factors affecting menstrual hygiene practices.

### **Objectives**

To study the socio-demographic profile of late adolescent girls in an urban slum. To assess the knowledge of the girls regarding menstrual hygiene, as well as reproductive and sexual health. To find their menstrual hygiene practices. To correlate these findings with their socio-demographic profile.

### **METHODS**

The present study was carried out among adolescent girls in the age group of 15-19 years residing in an urban slum, which is a field practice area of the Department of Community Medicine of a Tertiary care hospital in a metropolitan city.

#### **Sample size**

As per a previously conducted study, prevalence of lack of knowledge was 50%.<sup>5</sup> Sample size was calculated using the formula  $4pq/L^2$  as 177. Rounding off to 200, a sample of 200 adolescent girls in the age group were selected through systematic random sampling.

#### **Sampling technique**

The study area is divided into 50 plots. To attain the desired sample size and to have a fair representation of the adolescent girls in the community, half the total number of plots i.e. 25 plots were selected. Starting from the first plot every alternate plot was taken. The sample size being 200, 8 girls were selected from each plot to attain the required sample size ( $25 \times 8 = 200$ ). The girls were selected starting from the first random house and the next consecutive houses were selected by systematic random sampling, till the required sample size was attained. A total of 206 adolescent girls participated in the study.

Institutional ethics approval was taken before the start of the study.

A written consent or assent (whichever was applicable) was also taken. Those girls who were not willing to participate in the study and whose parents had objections with them participating in the study were excluded from the study.

The girls were then given a questionnaire, in the language they understand, to be filled by them, which included details of their socio-demographic profile, knowledge about growing up changes, menstruation, pregnancy and contraception. Their knowledge about reproductive tract infections, sexually transmitted infections and HIV/AIDS

was also enquired into. The source of information regarding the same was enquired. Their menstrual hygiene practices were also asked in detail.

### **Scoring**

Total number of questions about puberty and menstruation was 4 covering physical changes in girls, physical changes in boys, organ of blood flow and correct age of menarche. The mean age at menarche among Indian women was 13.76 years (95 % CI: 13.75, 13.77) in 2005.<sup>6</sup> In this study 12 or 13 was taken as the correct response for age of menarche. About conception, pregnancy and contraception, 6 questions were asked, covering fertilization, duration of pregnancy, fertile period, minimum spacing between two children and enumerating methods of contraception. The questions about STI/RTI and HIV covered, symptoms, mode of spread, availability of treatment and methods of preventing spread. There were 6 questions in this section.

Knowledge scores were calculated for knowledge about puberty and menstruation, conception, pregnancy and contraception, STI/RTI and HIV. One point was given for each correct answer. For questions where more than one options could be chosen, one point was given for each correct option ticked.

Maximum attainable score for knowledge about puberty was 10, for knowledge about conception, pregnancy and contraception was 12 and for knowledge about STI/RTI and HIV was 14.

Total knowledge score was calculated by adding all the three.

Knowledge score was classified as poor, average and good by dividing the maximum attainable score in each section by 3. Scores below 33.33% of the maximum attainable score in that section, were considered poor, up to 66.67% were considered average and above 66.67% were considered good.

Menstrual hygiene practices were evaluated on total 8 points: 1) What do you use during menses? Sanitary pad/new cloth/ old cloth after washing. 2) How many times do you change the absorbent material in a day? 3) Do you wrap the used cloth/sanitary pad in a paper before disposing? Yes/no. 4) If you reuse the cloth how do you wash it? Water only / Soap and water. 5) Where do you dry it after washing? In sunlight/in shade. 6) What do you use to wash genitals? Water/soap and water. 7) Do you bath daily during menses? Yes/no. 8) Do you use a clean washed and dry panty after each bath? Yes/no.

Menstrual hygiene practice was considered inadequate even if one of the point was not followed because breach in any one, can be a source of infection. As per established literature, absorbent material should be changed as frequently as needed, for this study, based

upon the focused group discussion conducted prior to conducting the study, changing the sanitary pad more than 2 times a day was considered adequate.

### Analysis

Compiled data was entered in Microsoft Excel 2013. Frequencies, averages and scores were calculated.  $\chi^2$  tests were applied to study the association between socio-demographic factors and baseline menstrual hygiene practices, using SPSS version 20.

## RESULTS

A total of 206 adolescent girls participated in the study. Majority of the girls, 45.63% (94) were 16 years of age. Most of them 71.85% (148) were Hindus, According to the type of family, 77.18% (159) belonged to nuclear family. 84.47% (174) lived in pukka house. Sanitary latrine facility was available within the house for 48.54% (100) of the girls. Mothers of the girls who attended school up to middle school were 44.66% (92).

**Table 1: Sociodemographic profile of adolescent girls.**

Sociodemographic factors		No. of participants (n=206)	Percentage
Age	15	56	27.18
	16	94	45.63
	17	40	19.42
	18	12	5.83
	19	4	1.94
Religion	Hindu	148	71.85
	Muslim	48	23.30
	Christian	10	4.85
Type of family	Nuclear	159	77.18
	Joint	18	8.74
	3 generation	29	14.08
Type of house	Kutcha	22	10.68
	Pukka	174	84.47
	Mixed	10	4.85
Sanitary latrine	Yes	100	48.54
	No	106	51.46
Mother's education	Illiterate	10	4.85
	Primary	55	26.69
	Middle	92	44.66
	Secondary	40	19.41
	Higher secondary	9	4.36

Per capita income was not included because 62.6% (129) girls did not know total family income.

A majority of the girls 51.94% (107) girls were given information about puberty and menstruation by one of their family member, while 59.22 (122) girls gained some

knowledge about conception, pregnancy and contraception also, from a family member.

**Table 2: Source of knowledge about puberty and menstruation and conception.**

Source of knowledge	Puberty and menstruation (n=206)	Conception pregnancy and contraception (n=206)
Family member	107 (51.94)	122 (59.22)
School	73 (35.43)	7 (3.40)
Friends	31 (15.05)	6 (2.91)
Electronic/print media	2 (0.97)	72 (34.95)
Others (not specified)	4 (1.94)	2 (0.97)

Table 3 shows the responses to the questions asked on knowledge regarding puberty, menstruation, conception and contraception.

36.41% (75) girls could answer all the changes occurring in girls at puberty. Correct age of menarche was known to 29.61% (61) girls while none knew the organ from which blood flows (uterus). Only 35.92% (74) girls could answer all the changes occurring in boys at puberty.

None of the girls knew about uterus being the organ where foetus develops. Only 8.25% (17) knew that foetus is formed by the fusion of gametes. 2.43% (5) and 2.91% (6) girls knew that woman can get pregnant after first intercourse and that chances of getting pregnant are higher if intercourse happens during mid-cycle. Only 13.59% (28) girls knew that the correct gestation period is 9 months and only 9.71% (20) girls could tell that ideal gap between successive pregnancies should be 3 years. None of the girls could answer about methods of contraception and which one could prevent spread of STI and HIV.

Answering to questions concerned about symptoms of STI/RTI, 9.22% (19) girls could associate that the mentioned symptoms were due to STI/RTI. Only 3.40% (7) girls had heard about HIV and only 1.94% (4) could identify the modes of spread of HIV correctly. 3.40% (7) girls knew that treatment for STI/RTI and HIV was available at government hospitals free of cost and with confidentiality. Only 0.97% (2) girls had complete knowledge about the ways to prevent HIV. Table 4 shows that, knowledge about puberty and menstruation was good in 43.20% (89) girls.

Regarding knowledge about pregnancy, conception and contraception, 98.04% (202) girls had poor knowledge.

While knowledge about STI/RTI and HIV was poor in 97.09 % (200) girls.

**Table 3: Knowledge about puberty and menstruation, conception, pregnancy and contraception and STI/RTI and HIV\* (n=206).**

Question	Correct response	Incorrect response/ no response
What physical changes occur in girls at puberty?	75 (36.41)	131 (63.59)
At what age, does menstruation start?	61 (29.61)	145 (70.39)
During menstruation blood flows from which organ?	0 (0)	206 (100)
What physical changes occur in boys at puberty?	74 (35.92)	132 (64.08)
In which organ foetus develops?	0 (0)	206 (100)
How is foetus formed?	17 (8.25)	189 (91.75)
Can a woman get pregnant after first intercourse?	5 (2.43)	201 (97.57)
Sexual intercourse during mid cycle increases the chances of getting pregnant?	6 (2.91)	200 (97.09)
What is the duration of normal pregnancy?	28 (13.59)	178 (86.41)
What should be the minimum gap between two children?	20 (9.71)	186 (90.29)
What are the various methods of contraception?	0 (0)	206 (100)
Which of the above methods can prevent STI/RTI and HIV?	0 (0)	206 (100)
What is the cause of the following symptoms? white discharge through vagina/itching of genitals/burning during urination/papules/ulcers/warts of genital region/swelling of inguinal region/pain in abdomen during menses/pain in lower abdomen not related to menses	19 (9.22)	187 (90.78)
Have you heard about HIV?	7 (3.40)	199 (96.60)
What are the modes of spread of HIV?	4 (1.94)	202 (98.06)
Do you know treatment, testing and counselling for STI/RTI and HIV/AIDS is available free of cost and with complete confidentiality at the government hospital in your community?	7 (3.40)	199 (96.60)
What are the measures for prevention of spread of HIV/AIDS?	2 (0.97)	204 (99.03)

\*the table is summarizing the responses. The questions were framed differently and were longer in the questionnaire for better understanding. For the exact question please refer to annexure IV.

**Table 4: Knowledge score about puberty and menstruation, conception, pregnancy and contraception and STI/RTI and HIV (n=206).**

Knowledge	N (%)
puberty and menstruation	Poor 36 (17.48)
	Average 81 (39.32)
	Good 89 (43.20)
conception, pregnancy and contraception	Poor 202 (98.06)
	Average 4 (1.94)
	Good 0 (0)
STI/RTI and HIV	Poor 200 (97.09)
	Average 6 (2.91)
	Good 0 (0)

Information about the menstrual hygiene practices in Table 5 showed that during menses, 92.72% (191) of the girls used sanitary pads. Out of the 15 girls who used cloth, 8 girls used a new cloth every time while 6 reused old cloth. Only 38.35% (79) changed the absorbent material 2 or more times in a day. For the disposal of the sanitary pads, 89.80% (185) girls wrapped it in a paper before discarding.

Those who reused old cloth, only 33.33% i.e. 2 of the 6, washed it with soap and water and dried it in sun, while 66.66% i.e. 4 of the 6 either did not wash it with soap and water or dried the cloth in shade. Inquiry into

personal hygiene revealed, 100% (206) girls had bath daily during menses while 80.10% (165) used soap and water to wash genitals while bathing during menses, and 19.90% (41) used only water.

**Table 5: Menstrual hygiene practices.**

Q. no.	Question	Yes	No
1	Do you use a sanitary pad during menses?	191 (92.72)	15 (7.28)
2	Do you change the cloth/sanitary pad more than 2 times in a day?	79 (38.35)	127 (61.65)
3	Do you wrap sanitary pad in paper before disposing?	185 (89.80)	21 (10.20)
4	Do you wash the cloth (if reused) with soap and water and dry it in air and sun? *	2 (33.33)	4 (66.67)
5	Do you wash genitals with soap and water during menses?	165 (80.10)	41 (19.90)
6	Do you bath daily during menses?	206 (100)	0 (0)
7	Do you use a clean and dry panty after each bath?	176 (85.44)	30 (14.56)

\*applicable to only those who reuse the cloth; 15 girls out of 206 use cloth out of which 6 reuse it.

Using clean and dry panty after every bath was practiced by 85.44% (176) adolescent girls.

Table 6 shows that 96.12% (198) girls observed restriction in attending religious functions/ceremonies during menses. Where attending school/college/work was concerned, majority, 84.47% (174) attended school/college or work during menses.

Inadequate disposal facility or water was the reason for not attending school/college/work for 9.22% (19) and

6.31% (13) stated the reason as pain or weakness. (N=206).

**Table 6: Restrictions observed during menstruation.**

	Attends	Doesn't attend	No response
<b>School/college/work</b>	174 (84.47)	32 (15.63)	0 (0)
<b>Religious functions/ceremonies</b>	0 (0)	198 (96.12)	8 (3.88)

**Table 7: Association between socio-demographic factors and menstrual hygiene practices.**

Socio-demographic factors	Menstrual hygiene practices		Chi square value
	Adequate	Inadequate	
<b>Age (years)</b>			
15	20 (34.48)	36 (24.32)	$\chi^2=2.177, p>0.5$ not significant
16	24 (41.38)	70 (47.30)	
17	10 (17.24)	30 (20.27)	
18-19	4 (6.90)	12 (8.11)	
<b>Religion</b>			
Hindu	38 (65.52)	110 (74.33)	$\chi^2=1.780, p=0.2593$ not significant
Muslim	16 (27.58)	32 (21.62)	
Christian	4 (6.90)	6 (4.05)	
<b>Type of family</b>			
Non-nuclear	16 (27.59)	31 (20.95)	$\chi^2=1.043, p>0.05$ not significant
Nuclear	42 (72.41)	117 (79.05)	
<b>Type of house</b>			
Kutch /mixed house	6 (10.34)	26 (17.57)	$\chi^2=1.657, p>0.05$ not significant
Pukka house	52 (89.66)	122 (82.43)	
<b>Mother's literacy</b>			
Illiterate/primary school/middle school	28 (48.27)	129 (87.16)	$\chi^2=34.76, p<0.0001$ significant
Secondary and higher secondary	30 (51.72)	19 (12.83)	
<b>presence of sanitary latrine</b>			
Yes	35 (60.34)	65 (43.92)	$\chi^2=4.501, p<0.05$ significant
No	23 (39.66)	83 (56.08)	

Table 7 shows the association between socio-demographic factors and menstrual hygiene practices.

Adequate menstrual hygiene practices was seen in 34.48% (20) girls aged 15 years, 41.38% (24) girls aged 16 years, 17.24% (10) aged 17 years and 6.90% (4) in those aged 18-19 years. However, there was no statistical significance seen with age.

Girls having adequate menstrual hygiene practices based on religion showed that 65.52% (38) girls were Hindus. This difference was found to be statistically insignificant.

Based on the type of family, it was seen that 72.41% (42) girls who lived in Nuclear families had adequate menstrual hygiene practices. This difference was statistically insignificant.

As per the type of houses, the girls were living in, it was seen that 89.66% (52) girls who lived in pukka houses had adequate menstrual hygiene practices. But this difference was found statistically insignificant.

According to the distribution of the girls based on their mothers' education, it was seen that 51.72% (30) of the girls had mothers' who were educated up to either secondary school or higher secondary school practiced adequate menstrual hygiene and this relation was seen to be statistically significant.

Availability of sanitary latrine facility inside the house was shown to be statistically significant with adequate menstrual hygiene practices, as 60.34% (35) of the girls who had adequate practices had a sanitary latrine inside the house.

Table 8 shows that, all the girls, 100% (114), who had symptoms related to RTI/STI in this study had poor knowledge about the same.

**Table 8: Association between knowledge and presence of symptoms.**

	Symptoms present	Symptoms absent	Total
<b>Poor knowledge</b>	115 (100)	85 (93.41)	200 (97.09)
<b>Average/good knowledge</b>	0 (0)	6 (6.59)	6 (2.91)
<b>Total</b>	115 (100)	91 (100)	206 (100)

## DISCUSSION

The present study was done in 206 late adolescent girls (15-19 years) to study the impact of reproductive and sexual health education on their knowledge, attitude and practices.

Age distribution of participants showed that, most of the girls, 45.63%, were 16 years of age, similar to study done by Malleshappa et al, R.S.P Rao et al 71.85%, of the girls were Hindus, as seen in the study done by Paria et al, Renjhen et al, 77.18%, girls belonged to nuclear family, these findings were similar to those done by Shanbhag et al.<sup>7-11</sup>

A very high proportion, 84.47%, lived in a pukka house. Sanitary latrine was present inside the house among 48.54% of girls, similar to a study done by Ray et al.<sup>12</sup>

Girls whose mothers had attended middle school were maximum, 44.66%, similar to study done by Renjhen et al.<sup>10</sup>

The source of knowledge for puberty and menstruation was family for a considerable majority, i.e. 51.94% girls, followed by 35.43% and 15.05% who got their knowledge from either school or friends. Family was the most common source of knowledge about conception, pregnancy and contraception also, the second most common source being media as 34.95% (72) got the information from there.

Girls find it comfortable to discuss about these issues with mother, or family member because they are close to them. Whereas school teachers are role models for them. In school, they also have friends with whom they spend a large proportion of their day. Thus, school is an important source of information for them. The above results also point towards media as an important source of knowledge especially about conception, pregnancy and contraception. The popularity of media can be harnessed for creating more awareness. Similar findings were seen in study done by Ray et al and Mittal et al.<sup>12,13</sup> However these findings did not match with the study done by Renjhen et al.<sup>10</sup>

Sanitary pads reduce the barriers for girls to stay in school, which are multiple: fear of soiling, fear of odour, and even if there are WASH facilities at school, fear of leaving visible blood in the latrine or toilet. Cloths or cloth pads may be a sustainable sanitary option, but it must be hygienically washed and dried in the sunlight.

In the present study, use of sanitary pad as absorbent material during menses was 92.72%, while, 7.28% used cloth. 6 of the 12 who used cloth, used a new cloth every time while 6 reused old cloth. Those who reused old cloth were assessed for proper washing and drying of the cloth. It was found that 33.33% of total i.e. 2 of the 6, who reused previously used cloth, washed it with soap and water and dried it in sun, while 66.67% of total, 4 of the 6 either did not wash it with soap and water or dried the cloth in shade.

Changing the absorbent material as frequently as required is advised for adequate menstrual hygiene. Keeping the same pad/cloth for a long duration gives rise to bad odour and bacteria. In the present study, 38.35% changed the absorbent material more than 2 times in a day, while 61.65% changed it 2 or lesser times a day.

Bathing every day and cleaning private parts with soap and water, is essential for reproductive tract hygiene, and majority of girls were following this practice. Some girls feel it is dirty to touch private parts and thus refrain from washing them. Bacterial or fungal infections can be caused due to the use of unwashed or damp panty.

In the present study, it was found that almost all the girls, 100% girls took bath every day during menses. The use of soap and water to wash private parts was seen in 80.10%, while 19.90% used only water. Using clean and dry panty after every bath was practiced by 85.44% girls. This could be because drying the panty in open sunlight and air is "awkward" and when dried inside the room, in shade, the panty doesn't dry properly.

In a study done by Yasmeen et al in an urban community in West Bengal, sanitary pad was used by 82.2%, 1.4% used new cloth and 15.0% used old cloth. 23 (15.7%) of the respondents uses old washed cloth and out of them 16 (69.5%) had problem while washing and drying of the cloth which mostly consisted of lack of privacy (93.7%). keeping the cloth in places away from prying eyes became a problem for them and for that they usually dried and stored in un-hygienic places. "Regarding hygienic practices during menstruation 85.7% had daily bath. Others felt bathing should be restricted in the first two days of menstruation as bathing increases the menstrual flow."<sup>14</sup>

Whereas, in a similar study done by Shanbhag et al in Bangalore city, the usage of sanitary pad was only 44.1%. The queries on the frequency of change during the time of menstruation revealed that 39.8% changed sanitary pad or cloth twice a day, 29.5% three times a day and 21.7%

once a day. 88.8% of girls took bath daily. A large proportion (56.8%) of the study population used soap and water to clean their private parts while the rest (43.2%) used only water.<sup>11</sup>

Most of the girls (96.12%) in the present study, observed restriction in attending religious functions/ceremonies during menses. Majority, 84.47% attended school/college/work during menses. Among the 32 girls who did not attend, inadequate disposal facility or water was the reason for not attending school/college/work for 59.38% and 40.62% stated the reason as pain or weakness.

These restrictions stem from the idea that menstrual blood is unclean or impure. These ideas are deeply rooted in the society and there was no change in this restriction even after health education. Girls should be encouraged to maintain a healthy life style and proper diet during menses to avoid pain and weakness. These findings were similar to those done by Shanbhag et al in their study, Ray et al, and Datta et al.<sup>11,12,15</sup>

Prevalence of adequate menstrual hygiene practices were expected to increase with age as the girls get used to menstruation. However, in the present study, statistical significance was not seen between age and menstrual hygiene practices.

This could be attributed to the fact that representation of girls in the age group of 18-19 years was very low.

In the present study, majority of girls were Hindu, followed by Muslim, very few girls were Christian. There was no significant association revealed between religion and menstrual hygiene.

It was found in this study that a higher percentage of those who had adequate menstrual practices (72.41%), belonged to nuclear family, as compared to those who belonged to non-nuclear family.

Menstrual hygiene depends upon the educational, socioeconomic, and cultural statuses of family.

It is expected that nuclear family provides more privacy and space for menstrual hygiene, like space for changing pads, space for drying the cloth or panty after use. In this study, the statistical association was not found significant. This could be because although the girls belong to nuclear families, the house may be small or sanitary latrine may not be available in the house and they are forced to use a community toilet. Further in depth study of socio-demographic factors will be required to assess the interplay of various factors.

Amongst those who had adequate menstrual hygiene, 9.09% lived in kutchra or mixed type of house, while 90.91% lived in pukka house. The difference was statistically insignificant.

In a similar study done by Gultie et al in Ethiopia among adolescent school girls, place of residence was found to be a significant factor in determining menstrual hygiene.<sup>16</sup>

A significant association was found between mother's education and girls' menstrual hygiene practices.

An educated mother is in a better position to inculcate good menstrual hygiene practices in her daughter and emphasize on them by pointing out their advantages.

Ray et al found in their study that, good menstrual hygiene was more among those whose mothers were literate.<sup>12</sup>

Most of the girls who had adequate menstrual hygiene had a sanitary latrine in their house, 60.34%. The association between presence of sanitary latrine facility in the house was found to be significant.

Ray et al also found a significant relation between menstrual hygiene practices and sanitary latrine at home.<sup>12</sup>

Association of various sociodemographic factors, age, religion, type of family, type of house, mother's education and facility of sanitary latrine in the house against menstrual hygiene practices were analysed using Chi Square test. Only two factors were found to be significantly associated, mother's education and facility of sanitary latrine in house,  $p < 0.05$ .

The above results indicate that by improving awareness about reproductive health in mothers and by improving coverage of in house sanitary latrine, menstrual hygiene of the girls can be improved.

Association between knowledge about STI/RTI and HIV and symptoms of RTI was found. 55.88% (114) girls had at least one symptom of RTI. All these girls had a poor knowledge about STI/RTI and HIV before the health education. 2.45% (5) girls had average knowledge of STI/RTI and HIV before health education and all these 5 girls were symptom free.

Girls who have knowledge about STI/RTI and HIV are expected to keep themselves away from these diseases.

## CONCLUSION

In the present study, it was seen that knowledge about puberty, especially physical changes was better than that about conception, pregnancy and contraception and STI/RTI and HIV.

However, adequate menstrual hygiene was practised only by a few girls. Mother's education and availability of sanitary latrine inside the house was seen to have significant relation with adequate menstrual hygiene practices. It was also seen that all girls who had

symptoms of RTI/STI had poor knowledge about the same.

### Recommendations

Based on the study result, following recommendations are put forth: 1) A community based awareness program, targeting mothers through peer group approach, about the importance of focusing on menstrual hygiene and reproductive health of adolescent girls, should start early. 2) Establishment of an adolescent friendly ongoing health education program for the girls, could be implemented through Anganwadis along with adolescent girl friendly clinics, with female counsellors, in public hospitals and dispensaries can provide confidential and need based counselling. 3) Motivating the community to construct sanitary latrines to ensure privacy, consistent supply of water, hygienic toilets, sanitary pads in schools, work places, colleges.

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## **Annexure IV**

### *Questionnaire*

1. Age:
2. Sex:
3. Address and phone number:
4. Education:
5. School: English medium/local language
6. Did you drop out of school? Yes / no if yes, reason?
7. Religion:
8. Education status of mother:
9. Type of house: kuccha/ pukka/ mixed
10. Do you have sanitary latrine in your house?
11. Family type: nuclear/joint/extended/three generation
12. No. of family members:
13. Total family income:
14. Per capita income?
15. What are the physical changes that occur in girls at puberty?
  - a. Menstruation / Enlargement of breast / Pubic hair / Axillary hair
16. What are the emotional changes that occur at the time of puberty?
17. At what age menses start?
18. During menses, blood flows from which organ?
19. What is the source of information about menses for you?  
Family member/ Friends / School/Electronic or Print Media  
(T.V/ Radio / News Paper / Magazine) /Other (Specify)
20. What do you use during menses?  
New Cloth pieces / Old washed cloth pieces / sanitary pad
21. How many times do you change the absorbent material in a day?
22. Where do you dispose the cloth/sanitary pad after use?  
Drain /garbage bin / burn / any other specify
23. Do you wrap the used cloth/ sanitary pad in a paper before disposing? Yes / no
24. If you reuse the cloth how do you wash it?  
Water only / Soap and water
25. Where do you dry it after washing?  
In sunlight / In shade
26. What do you use to wash genitals?  
Water / Soap and water.
27. Do you bath daily during menses? Yes/No
28. Do you use a clean washed and dry panty after each bath? Yes/No
29. Do you go to school/college/work during menstruation? Yes/No  
If no, why?  
Pain or weakness / Inadequate water at school / inadequate disposal facility at school / any other  
(Specify)
30. Do you conduct religious rituals and ceremonies during menstruation?
31. In which organ does a foetus develop  
Uterus / Stomach / Any other (Specify) / don't know
32. What are the changes that occur in boys at the time of puberty?  
Appearance of facial hair and hair in private parts / change of voice / Development of genital organs /  
Increase of height / don't know
33. How is a foetus formed?  
Spontaneously in the womb / Due to mixing of blood during sexual act / By fusion of ovum in the  
female and the sperm in male semen ejaculated during sexual act / Any other (specify)/don't know
34. Can a woman get pregnant after the first intercourse? yes / no
35. Sexual intercourse during mid cycle increases the chances of getting pregnant? Agree / disagree
36. What is the duration of normal pregnancy?
37. What should be the minimum gap between two pregnancies?
38. How many children should you have?
39. What are the various methods of preventing pregnancy?
40. What is the source of your knowledge about pregnancy and contraception?

- Family member / School / Friends / Electronic or print media (T.V/ Radio / News Paper / Magazine) / other (specify).
41. At what age, should you get married?
  42. Have you experienced any of these or taken medicines for any of these since you started menstruation?  
White discharge through vagina / Itching of genitals / Burning during urination / Papules /ulcers/warts of genital region / Swelling of inguinal region / Pain in abdomen during menses / Pain in lower abdomen not related to menses.
  43. Have you ever taken treatment for the above symptoms? Yes/no  
If yes, where?  
At the nearest health centre / Private practitioner
  44. What do you associate these symptoms to?  
Lack of Cleanliness / it is Normal / Curse of god / because of sexually transmitted infections / don't know
  45. Have you heard about HIV?  
Yes/ no. If yes, can you tell how does it spread?  
Infected needles/ infected blood transfusion/ sexual contact/ from mother to child during delivery
  46. Do you know treatment, testing and counselling for STI/RTI and HIV/AIDS is available free of cost and with complete confidentiality at the government hospital in your community? Yes / no
  47. What are the measures for prevention of spread of HIV/AIDS? (tick as many as you feel are right)  
Staying loyal to one partner/ correct and consistent use of condoms/ taking timely treatment for STI/RTI / treatment of partner if they have STI/RTI / use of sterilized new needles/ screening of pregnant women.