

Original Research Article

A study of knowledge and practice of menstrual hygiene among adolescent school girls in rural and urban field practice area of RajaRajeswari Medical College and Hospital, Bangalore, India

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ABSTRACT

Background: The word adolescent is derived from Latin word adolescence which means to grow into maturity. Adolescence is a period of transition from childhood to adulthood. WHO has defined adolescence as the age group 10-19 years. These are formative years when maximum amount of physical, psychological, developmental and behavioral changes take place. In India adolescent girls accounts for a little more than one-fifth of the population. The onset of menstruation is one of the most important changes occurring among the girls during the adolescent years. The event of menarche may be associated with taboos and myths existing in our traditional society which has a negative implication for women's health, particularly their menstrual hygiene. Women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to reproductive tract infections.

Methods: This was a cross-sectional descriptive study. The sample size of 184 is obtained in each group and rounded off to 190 (urban and rural schools). The duration of the study was for 5 months among adolescent high school girls in randomly selected schools.

Results: The mean age of urban girls was 12.87 ± 0.94 years whereas rural girls it was 12.85 ± 0.86 years. Among 380 study subjects 43.4% were aware about menstruation before attaining menarche, 62.4% were aware that menstruation is a natural process. Majority of study subjects (58.9%) were using sanitary pads during menstruation and 46.8% of study subject's changes absorbents twice a day.

Conclusion: Knowledge and practice regarding menstrual hygiene among adolescent high school girls is better in rural area as compared to urban adolescent high school girls.

Key words: Adolescent girls, Knowledge, Menstrual hygiene, Practices

INTRODUCTION

The word adolescent is derived from Latin word adolescence which means to grow into maturity. Adolescence is a period of transition from childhood to adulthood. These are formative years when maximum amount of physical, psychological, developmental and behavioral changes take place. WHO has defined

adolescence as the age group 10-19 years? An adolescent belong to a vital age group not only because they are "entrant population" to parenthood, but also because they are on the threshold between childhood and adulthood.

As they attempt to cross the threshold, they face various physiological, psychological and development changes.¹

India has one of the fastest growing youth populations in the world, with an estimated 190 million adolescents. In India adolescent girls accounts for a little more than one-fifth of the population.¹ Menstruation is a phenomenon unique to the females. The onset on menstruation is one of the most important changes occurring among the girls during the adolescent years.

Although menstruation is a natural process, it is linked with several misconceptions and practices which sometimes results into adverse health outcome.² In Indian society, menstruation is still regarded as unclean and dirty leading to isolation of the menstruating girls and restriction imposed on them. These practices have reinforced negative attitude towards menstruation in girls. It is also believed that during menstruations the women are ritually dangerous which can result in spoiling food, plants and social process. Women are prohibited from religious activities, attending marriage or touching male members during menstruation. Today millions of women are suffering from reproductive tract infections and its complications.² Women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to reproductive tract infections. Therefore, adequate knowledge about menstruation, right from childhood may escalate safe practices and may help in mitigating the suffering of women.³ The first menstruation is often horrifying and traumatic to an adolescent girl because it usually occurs without her knowing about it.⁴ The period of menarche needs special attention because menstruation in the adolescent girls often associated with related problems and poor practices.⁵

The need of the hour for girls is to have the information, education and an enabling environment to cope with menstruation. The event of menarche may be associated with taboos and myths existing in our traditional society which has a negative implication for women's health, particularly their menstrual hygiene.⁶ Menarche further calls for special attention because of the physical and emotional problems associated with it.⁷ There is very little awareness about menstruation among girls, when they first experience it. Social prohibition and negative attitude of parents in discussing the related issues openly has blocked the access of adolescent girls to right kind of information especially in rural and tribal communities.⁸

If adolescents have not received the proper required training at the appropriate time, it is possible that menarche could lead to some critical situations such as stress, anxiety or unhealthy behavior.^{9,10}

With this background, the present study was undertaken to study the knowledge and hygiene practices regarding menstruations among adolescent schoolgirls in our field practice areas of our college.

Objective of this study was to assess the knowledge and practice of menstrual hygiene among adolescent

schoolgirls in urban and rural field practice area of RajaRajeswari Medical College and Hospital, Bangalore.

METHODS

A cross-sectional descriptive study was carried out among adolescent girls studying in schools in rural and urban field practice area of RajaRajeswari Medical College and Hospital, Bangalore. For duration of 5 months (November 2013 till March 2014). All adolescent girls studying in high schools of rural and urban field practice area of RRMCH- Bangalore.

Inclusion criteria

The girls who are willing to participate in the study.

Exclusion criteria

Adolescent girls who have not attained menarche.

In a study by Dube et al, awareness regarding menstruation, 40% high school girls in rural area, 60% in urban high school girls accepted it as natural phenomenon.²² The sample size is estimated based on 5% significant level. The following formula provides the required sample size.

$$n = \frac{Z_{21-\alpha/2} [P_1(1-P_1) + P_2(1-P_2)]}{d^2}$$

where, n= estimated sample size, $Z_{1-\alpha/2} = 1.96$ for 5% significant level, $P_1 = 0.6$, $P_2 = 0.4$

d = (population risk difference) = 10%

$$n = \frac{1.962 [0.6 (0.4) + 0.4 (0.6)]}{0.1 \times 0.1}$$

$$n = \frac{3.8416 \times 0.48}{0.01} = 184 \text{ in each group}$$

The sample size of 184 has been rounded off to 190 in each group.

A pilot study was undertaken prior to actual study to check for feasibility of questionnaire.

The study was approved by the institutional ethics committee of the college. Schools were considered as units of sampling. Of these 3 high schools in the urban area, one school was selected by simple random technique till the sample size of 190 study subjects was met. Similarly, out the 6 high schools in the rural area 4 were selected by using simple random technique till the sample size of 190 study subjects was met. The school authorities were contacted and explained about the study. The girls were briefed about the purpose of the study and were assured confidentiality. Informed written consent was obtained from the girls before the interview. A predesigned, pretested, questionnaire was used for collecting the data which included questions related to their socio-demographic

profile, about menstruation, source of information and hygiene practiced during menstruation. A personal one to one interview was conducted. This was followed by a session of education for the girls about the normal physiology of menstruation and the importance of maintaining hygiene and safe practice during menstruation.

Statistical analysis

Data collected is compiled in MS excel sheet; subsequently it was analyzed using SPSS (Statistical Package for Social Sciences) version 20. Microsoft word and Excel have been used to generate graphs and tables.

The descriptive statistics comprising of frequency, percentage and standard deviation for continuous and is

continuous variables like age and class was used. Chi-square test and Fisher exact test was used for statistical analysis. P<0.05 was considered as statistically significant N.

RESULTS

In our study, majority 66.1% of the adolescent girls belonged to 14-15 years, mean age of urban girls were 12.87±0.946 years whereas rural girls it was 12.85±0.869 years. 100.0% of rural girls and 98.4% of urban girls belongs to Hindu religion,72.6% of urban girl’s mother and 49.5% of rural girl’s mothers were employed, urban girl’s majority 88.9% and 76.8% rural girls belong to nuclear family (Table 1).

Table 1: Sociodemographic profile of the study participants.

Variable	Schools		Total (n=380)	
	Urban (n=190)	Rural (n=190)		
Age (years)	12-14	96 (50.5)	89 (46.8)	185 (97.3)
	15-17	94 (49.5)	101 (53.2)	195 (102.7)
Religion	Hindu	187 (98.4)	190 (100.0)	377 (99.2)
	Muslim	3 (1.6)	-	3 (0.8)
Type of family	Nuclear	169 (88.9)	146 (76.8)	315 (82.9)
	Joint	21 (11.1)	44 (23.2)	65 (17.1)
Mother’s literacy	Illiterate	68 (35.8)	70 (36.8)	138 (36.3)
	Literate	122 (64.2)	120 (63.2)	240 (63.3)
Mother’s occupation	Employed	138 (72.6)	94 (49.5)	232 (61.1)
	Unemployed	52 (27.4)	96 (50.5)	148 (38.9)

Table 2: Knowledge of study participants about menstruation.

Variables	School		Total (n=380)	
	Urban (n=190)	Rural (n=190)		
Knowledge about menarche	Yes	52 (27.4)	113 (59.5)	165 (43.4)
	No	138 (72.6)	77 (40.5)	215 (56.6)
Knowledge regarding menstruation	Natural or physiological process	100 (52.6)	137 (72.1)	237 (62.4)
	Internal or pathological bleeding	30 (15.8)	41 (21.6)	71 (18.7)
	Disease	26 (13.7)	3(1.6)	29(7.6)
	Don’t know	34 (17.9)	9 (4.7)	43 (11.3)
Duration of menstrual flow	3-7days	142 (74.7)	145 (76.3)	287 (75.5)
	>7 days	48 (25.3)	45 (23.7)	93 (24.5)
Normal cycle	28-30 days	118 (62.1)	143 (75.3)	261 (68.7)
	31-35 days	34 (17.9)	41 (21.6)	75 (19.7)
	Don’t know	38 (20.0)	6 (3.1)	44 (11.6)

Majority 59.6% of urban girls and 29.2% of rural girls had the source of information regarding menstruation was their mothers and family members before attaining menarche, whereas majority 55.8% of rural girls and 30.7% of urban

girls were aware about the source of information regarding menstruation was from teacher. (Figure 1).

In our study only 20.3% were aware that the site of menstrual bleeding was from uterus. Whereas 22.1% of urban girls and

18.4% of rural girls were aware that the site of menstrual bleeding was from uterus. 54.7% of urban girls and 60.5% of rural girls said it was from vagina followed by 13.2% of urban and 3.2% of rural girls said don't know (Figure 2).

It was observed that 59.5% of rural girls and urban girls 27.4% were aware about menstruation before attaining menarche, 62.4% of the total study subject knew that menstruation was a normal physiological process. 52.6% of urban girls and 72.1% of rural girls were aware that

menstruation was a normal physiological process, whereas 15.8% of urban girls and 21.6% of rural girls reported due to internal bleeding. 17.9% if urban girls and 4.7% of rural girls said don't know, 74.7% of urban girls and 76.3% of rural girls were aware that the normal duration of menstrual flow ranges between 3-7 days, 62.1% of urban girls and 75.3% of rural girls were aware that the normal interval between the menstrual cycles range between 28-30 days (Table 2).

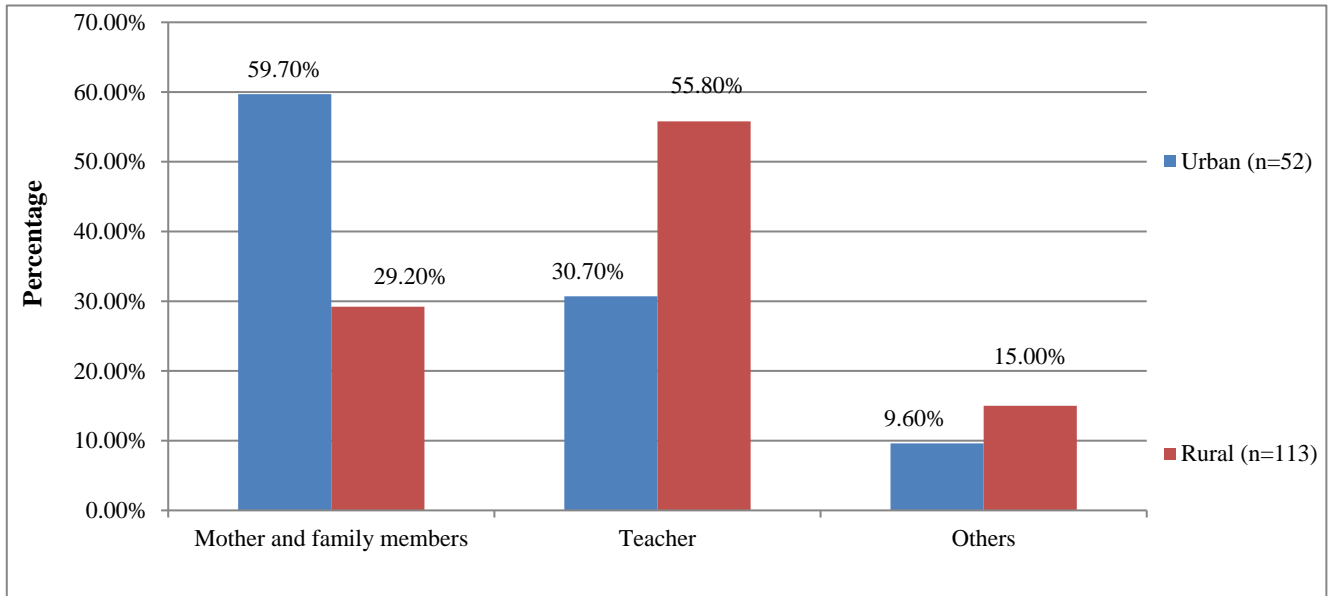


Figure 1: Source of information regarding menstruation before attaining menarche.

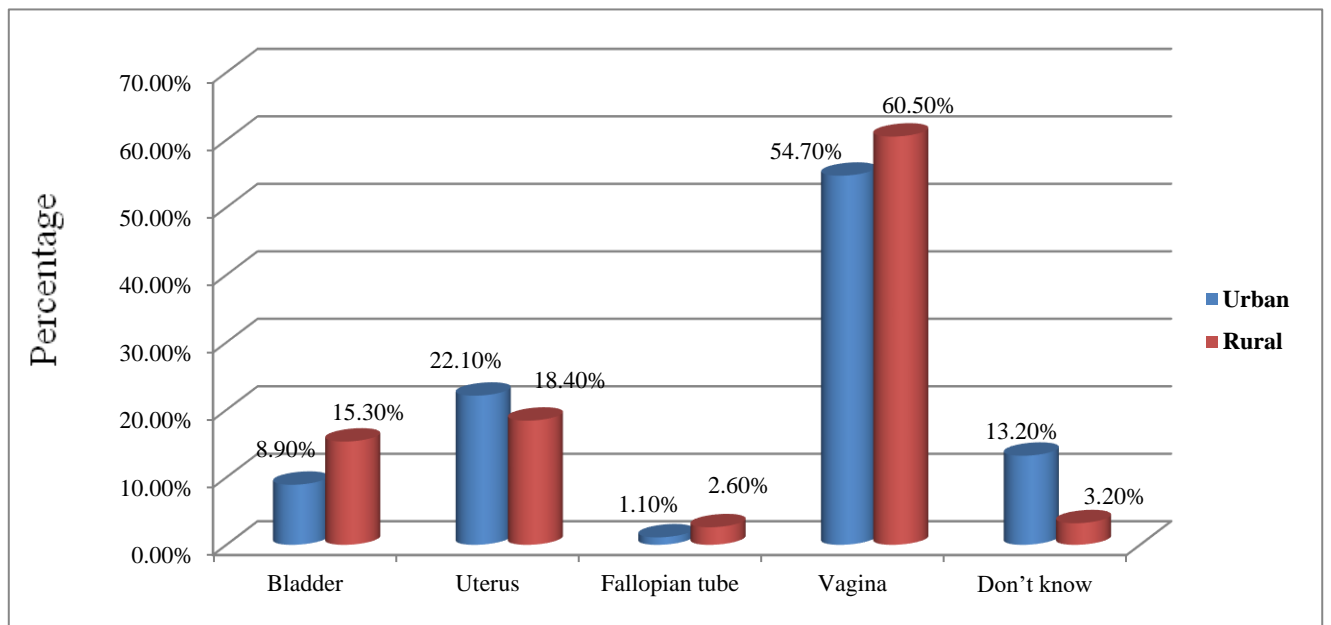


Figure 2: Awareness regarding the site from where bleeding occurs during menstruation.

It was observed that 55.3% of urban girls and 52.6% of rural girls had pain abdomen, followed by 27.9% of urban girls and 32.1% of rural girls had backache, whereas 18.9% of

urban girls and 10.5% of rural girls experienced headache during menstruation (Table 3).

Table 3: Distribution of study subjects with respect to their symptoms during menstruation (n=380).

*Symptoms	Schools		Total
	Urban	Rural	
Headache	36 (18.9)	20 (10.5)	56 (14.7)
Bodyache	33 (17.4)	6 (3.2)	39 (10.3)
Pain abdomen	105 (55.3)	100 (52.6)	205 (53.9)
Backache	53 (27.9)	61 (32.1)	114 (30.0)
No symptoms	59 (31.1)	77 (40.5)	136 (35.8)

Note: Figures in Parenthesis indicates percentages. *multiple response.

In urban girls there is restriction like 98.4% for not going for temple, 69.5% for sports followed by 64.2% for not travelling whereas in rural 99.9% for not going for temple, 87.9% for sports and 79.5% for not travelling The restrictions following activities for sports, talking to any boys, domestic work, travelling and attending for any functions were found to be statistically significant (Table 4).

Majority 87.9% of rural girls and 67.4% of urban girls had food taboos, urban girls 67.4% and 50.5% of rural girls used sanitary pads as absorbent during menstruation, 91.6% of rural girls and 81.1% of urban girls had a habit of taking daily bath during menstruation, 51.1% of rural girls and urban girls 42.6% have habit of changing the absorbent twice a day, 40.5% of urban and 36.8% of rural girl’s changes thrice a day, 73.1% of urban and 10.5% of rural girls have a habit of throwing into dustbin followed by 10.5% of urban and 51.6% of rural girls had habit of burning the absorbents, 73.7% of rural girls and 66.8% of urban girls use to store their absorbent within bathroom, 90.0% rural girls and 71.6% of urban girls had practices of changing the absorbents during school hours., 144 (75.8%) of urban and 125 (65.8%) rural girls clean their external genitalia satisfactorily, 8% of urban girls and 73.2% of rural girls uses the water as material for cleaning their external genitalia. 15.8% of urban girls and 23.2% of rural girls uses soap and water for cleaning their external genitalia. (Table 5).

Table 4: Distribution of study subjects with respect to their restriction practiced during menstruation (n=380).

*Restriction	Schools		Chi square/ Fisher exact test	DF	P value
	Urban	Rural			
Going to temple	189 (99.5)	187 (98.4)	0.623	-	>0.05
Sports	132 (69.5)	167 (87.9)	χ^2 19.220	1	<0.01
Talking with boys	109 (57.4)	143 (75.3)	χ^2 13.619	1	<0.01
Strenuous work	2 (1.1)	2 (1.1)	1.00	-	>0.05
Domestic work	94 (49.5)	128 (57.7)	χ^2 12.524	1	<0.01
Travel	122 (64.2)	151 (79.5)	χ^2 10.940	1	<0.01
Function	133 (70.0)	154 (81.1)	χ^2 6.279	1	<0.01

Note: Figures in Parenthesis indicates percentages. *multiple response.

Table 5: Distribution of study participants according to practices during menstruation.

Variables	Schools			Total	Chi square, P value
	Urban	Rural			
*Food taboos	Present	128 (67.4)	167 (87.9)	295 (77.6)	χ^2 23.050 df=1 p<0.001
	Absent	62 (32.6)	23 (12.1)	85 (22.4)	
Absorbent used during menstruation	New cloth	1 (0.5)	11 (5.8)	12 (3.2)	χ^2 20.146; df=3; p<0.001
	Old cloth	20 (10.5)	41 (21.6)	61 (16.1)	
	Sanitary pads	128 (67.4)	96 (50.5)	224 (58.9)	
	Both (pads/cloth)	41 (21.6)	42 (22.1)	83 (21.8)	
Changing absorbents/day	Less than 2	14 (7.4)	5 (2.6)	19 (5.0)	χ^2 6.035 df=3, p>0.05
	More than 3	81 (42.6)	97 (51.1)	178 (46.8)	
Storage of absorbent	Store within routine cloth	30 (15.8)	28 (14.7)	58 (15.3)	χ^2 = 2.902; df=2, p>0.05
	Within bathroom	127 (66.8)	140 (73.7)	267 (70.2)	
	*Other places (boxes, behind the door etc.)	33 (17.4)	22 (11.6)	55 (14.5)	
Method of disposing absorbent material	Throwing in dustbin	139 (73.2)	20 (10.5)	159 (41.8)	χ^2 20.771 df=1, p<0.001
	Flushing in the toilet	18 (9.5)	35 (18.4)	53 (13.9)	
	Burning	20 (10.5)	98 (51.6)	118 (31.1)	
	Buried in the soil	13 (6.8)	37 (19.5)	50 (13.2)	

Continued.

Variables		Schools		Total	Chi square, P value
		Urban	Rural		
Daily bath during menstruation	Yes	154 (81.1)	174 (91.6)	328 (86.3)	$\chi^2=20.771$ df=1, p<0.001
	No	36 (18.9)	16 (8.4)	52 (13.7)	
Practice of changing at school hours	Yes	54 (28.4)	19 (10.0)	73 (19.2)	
	No	136 (71.6)	171 (90.0)	307 (80.8)	
Cleaning of external genitalia	Satisfactory*	144 (75.8)	125 (65.8)	269 (141.6)	
	Not satisfactory	46 (24.2)	65 (34.2)	111 (58.4)	
Method used to clean external genital	Only water	144 (75.8)	139 (73.1)	283 (74.4)	
	Soap and water	30 (15.8)	44 (23.2)	74 (19.5)	
	Water with antiseptic	16 (8.4)	7 (3.7)	23 (6.1)	

*Satisfactory cleaning of external genitalia: cleaning for more than 2 times a day during menstruation, unsatisfactory cleaning of external genitalia: cleaning less than or equal to 2 times a day during menstruation.

DISCUSSION

In the present study, the mean age at menarche among urban girls was 12.87 ± 0.946 years, whereas among rural girls it was 12.85 ± 0.869 years. In a similar study by Thakre et al. Observed that the mean age at menarche among urban girls was 12.76 ± 0.09 years, whereas among rural girls was 12.86 ± 0.9 years, in present study the knowledge about the age of menstruation was observed that 32.6% of urban girls and 27.9% rural girls opinioned that normal age at menarche was 14 years.⁵

In present study the knowledge regarding menstruation before menarche among rural school girls was 59.5% and 27.4% in urban girls. Patel et al. Observed that 63.38% of the urban girls and 47.57% of the rural girls were aware about menstruation before attaining menarche.¹¹

In our study among 59.7% of urban girls and 29.2% of rural girls, the main source of information was mother and family members regarding menstruation before attaining menarche, whereas 30.7% of urban girls and 55.8% of rural girls of rural girls the main source of information was teachers. Salve et al. study among urban and rural girls have observed that the main source of knowledge regarding menstruation was teachers (47%) and mothers and friends (21%) among rural girls whereas among urban girl's mother constitute (36%) and relatives (30%), The finding were consistent with those of other studies like Jogdand et al, Kamaljit et al, Shanbhag D et al, Verma et al, Deo et al, where mother was the main source of information regarding menstruation before attaining menarche.^{1,4,12-15}

It was observed in this study that 52.6% of urban girls 72.1% of rural girls were aware that menstruation was a normal physiological process, whereas 15.8% of urban girls and 21.6% of rural girls reported it is due to internal bleeding. Similar study conducted by Shanbhang et al. has found that 72.2% rural girls felt it is a natural phenomenon, while, 17% believed due to curse of god.¹³

The present study found that 22.1% of urban girls and 18.4% of rural girls said that bleeding was from uterus whereas 54.7% of urban girls and 60.5% of rural girls said it was from vagina. Similar study done by Nagar et al.¹⁶ observed that

76.23% girls were not aware of the source of the menstrual bleeding; only 2.58% were aware that the source of the bleeding was the uterus, 80.62% did not know the cause of the menstrual bleeding.

In the present study it was observed that 74.7% of urban and 76.3% of rural girls said that menstrual flow ranges between 3-7 days, whereas 23.7% of rural girls and 25.3% of urban girls said more than 7 days and 62.1% of urban girls and 75.3% of rural girls said that interval between each menstrual cycle ranges between 28-30 days. In similar study conducted by Kamath R et al. observed that 91.9% of urban girls and 92.1% were aware that the menstrual flow ranges between 3-7 days and menstrual cycle range between 25-32 days.⁶

In the present study it was observed that 55.3% of urban girls and 52.6% of rural girls had pain abdomen, Study by Nair et al. found that among rural girls 40.6% had backache and 36.1% had pain in the arms and legs.¹⁷

In urban girls there is restriction like 98.4% for not going for temple, 69.5% for sports followed by 64.2% for not travelling whereas in rural 99.9% for not going for temple, 87.9% for sports and 79.5% for not travelling. A study done by Nagar et al. found among urban girls during menstruation 67.63% did not attend any religious functions, 24.90% did not do any house hold work, 19.50% did not play outside, 3.73% not allowed to go to school and 28.22% did not practice any restriction, among rural girls 73.29% did not attend any religious functions, 28.77% did not do house hold work, 7.53% not allow to go to school and 23.29% did not practices any restriction.¹⁶

In present study it was observed that 67.4% of urban girls and 87.9% of rural girls had food taboos. Shanbhang et al. in their study among rural girls had food taboos like 21.6% avoided sweets, spicy food 3.9%, curd and milk products 9.1%.¹³

In the present study it was observed that among urban girls 67.4% used sanitary napkins, whereas among rural girls 50.5% used sanitary napkins. Dube et al. observed 80% of urban girls were using sanitary napkins, 65% of the rural girls use home-made disposable pads during menstruation, which were made up of old torn out clothes.¹⁸ Patle et al.

observed that 62.0% of urban girls and 43.40% of rural girls were using sanitary pads.¹⁹ The use of old piece of cloth was higher among rural group 56.60% and 37.97% among urban girls.

The present study was observed that 42.6% of the urban girls and 51.1% of the rural girls change absorbents twice per day. Shanbhang et al observed that 39.8% change absorbents twice a day, 29.5% 3 times a day and 21.7% once a day.¹³ Nair et al observed 74.8% adolescent girls were changing pads 2-3 time a day and 17.3% more than 3 time a day.¹⁷

In our study it was observed that 66.8% of urban girls and 73.7% of rural girls store the used absorbents in the bath room. The study by Udgiri et al observed that 25.3% of the urban girls and 17.12% of the rural girls stored the absorbent with routine cloth, 31.12% of the urban girls and 41.09% of the rural girls stored it in the bathroom.²⁰

The present study observed that 73.2% of urban girls and 10.5% of rural girls dispose the used absorbent by throwing into dustbin. Nagar et al their study observed the method of disposal of used absorbents 46.89% of urban girls and 60.96% of rural girls reported by burning, 45.23% of urban girls and 12.33% of rural girls do throw along with routine waste.¹⁶

In the present study it was observed that 81.1% of urban girls and 91.6% of the rural girls had daily bath, similar study by Yasmin et al observed that 85.7% of urban girls said that they take daily bath during menstruation.³

In the present study it was observed that only 28.4% of urban girls and 10.0% of rural girls changes the pad in the school hours during menstruation. Nagar et al, in their study they observed that only a small proportion of girls change the pads at school hours 11.37%.¹⁶

In our study, 144 (75.8%) of urban and 125 (65.8%) rural girls clean their external genitalia satisfactorily.

In our study it was observed that 75.8% of the urban girls and 73.2% of the rural girls wash their external genitalia only with water. Kamalijit et al they have concluded that girls 59.3% urban girls were using soap and water, whereas 39.4% were using only water for washing the external genitalia and rural girls 56.1% were using soap and water, 46.4% were using only water.²¹

CONCLUSION

Knowledge and practice regarding menstrual hygiene among adolescent high school girls is better in rural area as compared to urban adolescent high school girls.

Recommendations

It is important that a sustained public health awareness programme to be developed to operate in population to create

better awareness amongst adolescent girls. The sanitary pads can be made available at affordable prices by social marketing.

For most of the rural girls, sanitary facilities like adequate water, separate toilet facility at school was not available, so government should make available these sanitary facilities under NRHM or any other scheme.

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