

Impact of Health Education on Knowledge And Practices About Menstrual Hygiene Among Rural Adolescent School Going Girls At RHTC Srinagar, Ajmer, Rajasthan, India.

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Abstract

Background: Adolescence is a transitional phase linking childhood to adulthood. Among adolescents, girls are especially vulnerable and more susceptible biologically to reproductive tract infections. This study was undertaken to assess the impact of health education on knowledge regarding menstruation and sources of information, misconceptions, restrictions, status of menstrual hygiene and practices amongst rural adolescent school girls.

Materials and Methods: This is a school-based educational interventional study on adolescent health education about menstrual hygiene, on the girls 11 to 17 years old, in Government girls senior secondary school, RHTC Srinagar, Ajmer, during the period from November 2016 to January 2017. A pre-tested questionnaire was administered and later health education regarding menstruation and healthy menstrual practices was imparted to the girls. Post-test was done after 3 months to assess the impact of health education.

Results: Out of 192 respondents, 148 (77.08%) girls were aware about menstruation prior to attainment of menarche. Mother was the first informant regarding menstruation in case of only 93 (47.4%) girls. In the pre-test, only 65 (33.85%) girls correctly reported uterus as the organ from where menstrual blood comes. Regarding practices, only 78 (40.61%) girls used only sanitary pads, 30 (15.62%) girls used only cloth and 84 (43.75%) girls used both sanitary pad and cloth during menstruation. In the pre-test, menstrual perceptions amongst them were found to be poor and practices incorrect while in the post-test, there was a significant difference in the level of knowledge ($P < 0.01$). There was no significant difference in pre and post-test with regard to restrictions followed during menses ($P > 0.05$).

Conclusions: Menstrual hygiene, a very important risk factor for reproductive tract infections, is a vital aspect of health education for adolescent girls. Adolescent health educational programmes, trained school nurses/health personnel, motivated school teachers and knowledgeable parents can play a very important role in transmitting the vital message of correct menstrual hygiene to the adolescent girl of today.

Keywords: Adolescent health education, Adolescent girls, Rural school girls, menstrual hygiene, reproductive tract infections, RTI, sanitary pad

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I. Introduction

Adolescence is an important and sensitive phase of life. According to the World Health Organization, adolescence is defined as the period between 10 and 19 years.¹

Adolescence is a transitional phase linking childhood to adulthood. Many physical, mental and social developments take place during this phase. Adolescent girls constitute about one fifth of the world's female population.² India has the largest population of adolescents in the world, being home to 253 million adolescents, constituting 20% of Indian population, according to 2011 census. Also, it constitutes 20% of the world's 1.2 billion adolescents. For a girl, adolescence is transformation into a woman and menstruation, which is unique to the females, is a milestone. Among adolescents, girls are especially vulnerable and more susceptible biologically to reproductive tract infections. In rural India, due to lack of education, gender inequality, girls are forced into early marriage, early child bearing, violence and sexual abuse. Menstruation is generally regarded as unclean in the rural society. The ignorance and conservative outlook of the rural society, make things worse by neglecting

the female child. They think it is a taboo to openly discuss the issues of adolescence, which keeps these rural teenage girls away from the appropriate knowledge regarding their health and hygiene, making them prone to infections.³

The knowledge and practices about menstrual hygiene among rural adolescent girls is very poor as shown by many studies done in India.³⁻⁶ Menstrual disorders are found to be the commonest gynecological problem in teenagers, affecting their future reproductive health if ignored.⁷ They are also at risk of many diseases due to poor sanitation, unclean water and lack of personal hygiene. Many may even drop schooling after primary education. Hence, catching them young and imparting adolescent health education to these rural teenage girls in schools is important and better if it is also reinforced and continued in the pre university and undergraduate colleges too; as revision at every level will certainly refresh their knowledge. In schools, as moral education is important, so also is health education for adolescents. Brigham Young, an American leader, aptly said- You educate a man; you educate a man. You educate a woman; you educate a generation. Health education builds knowledge, motivates students to improve and maintain their health, prevent disease and reduce risky behaviors.

II. Aims

This study aims to evaluate the impact of adolescent health education on teenage girls in rural schools; to frame, follow and study the feasibility to incorporate it, in the school curriculum. Also to assess the effect of various aspects of this type of health education, in terms of immediate improvement of knowledge, physical, psychological, reproductive and social health.

III. Objectives

1. To study the existing level of knowledge and practices regarding menstruation among rural adolescent school girls and to assess the change in their knowledge level and practices after health education on “menstruation and healthy menstrual practices”;
2. To assess the source of information, beliefs, misconceptions and restrictions related to menstruation; and
3. To find out the status of menstrual hygiene among adolescent school girls.

IV. Materials And Method

A school-based educational interventional study was conducted among 192 adolescent girls of classes 6th to 10th of Government girls secondary schools in Srinagar, Ajmer. RHTC Srinagar is the field practice area of J.L.N. Medical College, Ajmer, Rajasthan, India. The study was conducted during the period November 2016-January 2017. After taking permission from the school authority, a pre-designed, pre-tested, structured questionnaire in Hindi was administered to the school girls to study their existing level of knowledge and practices regarding menstruation. The questionnaire included topics concerning menstruation, source of information, menstrual hygiene, beliefs and restrictions related to menstruation.

After collection of the questionnaire, health education regarding “menstruation and healthy menstrual practices” was imparted to the girls through lectures with the help of audio-visual aids. This was followed by question-answer session to clarify their doubts. After three months, the same questionnaire was again administered to the girls (post-test) to assess the impact of health education. Data obtained were compiled and analyzed statistically using chi-square test and percentages.

V. Results

Out of 192 girl students enrolled into the study, maximum 57(29.68%) of the school girls were in the age group 14-15 years followed by 47(24.47%) from the age group 13-14 years.(Table 1).

Table 1: Age distribution

Percentage	Numbers	Age (years)	S.No.
7.29	14	11-12	1.
16.14	31	12-13	2.
24.47	47	13-14	3.
29.68	57	14-15	4.
16.66	32	15-16	5.
5.72	11	16-17	6.

Among 192 respondents in the present study, 184 (95.83%) were Hindus, whereas only 8 (4.16%) girls were Muslims. Fathers of most of the girls were farmers 91(47.39%), followed by daily wage laborers 52(27.08%), service holders 24(13.54%) and businessmen 19(9.89%). Mothers of most of the respondents were housewives 180 (93.75%).

Table 2: Information about menarche (n = 192)

Percentage	Number	Information
		Age of menarche (years)
1.56	3	10
5.20	10	11
31.25	60	12
41.14	79	13
14.58	28	14
6.25	12	15
		Inter Menstrual Interval (days)
19.79	38	15-25 days
48.43	93	26-30
19.79	38	31-45
11.79	23	45-60
		Duration of Menstrual Flow
8.85	17	Less than 2 days
85.93	165	3-6
5.20	10	7-12
		Awareness about menstruation before menarche
77.08	148	
		Source of Information before menarche
41.66	80	Mother
30.72	59	Teacher
10.93	21	Sister
11.97	23	Friend
4.68	9	Other

Table 2 shows that the age of menarche in girls ranged from 10 to 15 years, maximum 79(41.14%) number of girls reported menarche at age of 13 yrs followed by 60(31.25%) at the age of 12 yrs. In the present study, the mean age of menarche of the respondents was 12.8 years. The inter-menstrual interval was reported to be 26-30 days in 93 (48.43%) girls, 15-25 days in 38 (19.79%) girls, 31-45 days in 38 (19.79%) girls and 46-60 days in 23 (11.79%) girls. The duration of menstrual flow was <2 days in 17 (8.85%) girls, 3-6 days in 165 (85.93%) girls and 7-12 days in 10 (5.20%) girls.

148 (77.08%) girls were aware about menstruation prior to attainment of menarche. Among 192 respondents, mother was the first informant only in case of 80 (41.66%) girls. Teacher was the first informant in case of 59(30.72%) girls. Other sources of information were friends in case of 23(11.97%) girls, sister and relatives in case of 21 (10.93%)girls.

Table 3: Knowledge And Beliefs Regarding Menstruation (n=192)

Chi-square/p value	Can't say		No		Yes		Knowledge and or Beliefs
	%	No.	%	No.	%	No.	
X ² =353.28 df=2 p=0.00 p<0.01							Do you think menstrual blood is impure?
	23.4	45	4.16	8	72.39	139	Pre Test
	0	0	100	19	0	0	Post Test
X ² =186.06 df=2 p=0.00 p<0.01							Do you know that menstrual blood comes from uterus?
	39.58	76	26.56	51	33.85	65	Pre Test
	0.52	1	0	0	99.47	191	Post Test
X ² =115.91 df=2 p=0.00 p<0.01							Does a woman have menses during pregnancy?
	2.08	4	57.29	11	40.62	78	Pre Test
	0	0	100	21	0	0	Post Test
X ² =291.62 df=2 p=0.00 p<0.01							Does excessive bleeding lead to anemia?
	42.18	81	44.79	86	13.02	25	Pre Test
	0.52	1	0	0	99.47	191	Post Test
X ² =256.57 df=2 p=0.00 p<0.01							Influence of hot and cold food on menses?
	9.37	18	10.93	21	79.68	153	Pre Test
	1.56	3	92.18	17	5.72	11	Post Test

Table 3 shows the knowledge and beliefs regarding menstruation among adolescent school girls. In the pre-test stage, 139 (72.39%) girls felt that menstrual blood is impure, 153 (79.68%) girls felt that there was an influence of hot and cold foods on menstrual flow while in the post-test, there was significant difference in their level of knowledge on menstruation ($p < 0.01$). In the pre-test, only 65 (33.85%) girls correctly reported uterus as the organ from where menstrual blood comes. Following health education, 191 (99.47%) girls correctly reported uterus as the organ from where menstrual blood comes.

Table 4: Restrictions And Practices During Menstruation (n=192)

Chi-square / p value	No		Yes		Restrictions and Practices during Menstruation
	%	No.	%	No.	
$X^2=0$ df=1 p=1 p>0.05					Do you visit holy places during menstruation?
	100	192	0	0	Pre Test
	100	192	0	0	Post Test
$X^2=1.764$ df=1 p=0.184 p>0.05					Do you visit relatives, friends, and neighbors during menses?
	55.72	107	44.27	85	Pre Test
	48.95	94	51.04	98	Post Test
$X^2=0.167$ df=1 p=0.68 p>0.05					Do you do household activities during menses?
	53.12	102	46.87	90	Pre Test
	51.04	98	48.95	94	Post Test
$X^2=0.51$ df=1 p=0.475 p>0.05					Do you practice isolation during menses?
	48.43	93	51.56	99	Pre Test
	52.08	100	47.91	92	Post Test
$X^2=2.709$ df=1 p=0.099 p>0.05					Do you bath daily during menses?
	2.60	5	97.39	187	Pre Test
	0.52	1	99.47	191	Post Test
$X^2=173.135$ df=1 p=0.00 p<0.01					Do you wash your genitalia often with soap and water whenever you change cloth/sanitary pad?
	70.31	135	29.68	57	Pre Test
	5.20	10	94.79	182	Post Test

Findings in Table 4 show the menstrual practices and various restrictions followed by the girls during menstruation. In the pre-test phase, 192 (100%) reported that they do not visit holy places during menstruation and 99 (51.56%) girls reported that they are kept in isolation at home during menses. In the post-test phase, no significant difference was seen with regard to the restrictions followed by them ($p > 0.05$). In the pre-test period, only 57 (29.68%) girls reported that they wash their genitalia with soap and water whenever they change their cloths/sanitary pads whereas in the post-test period, significant improvement was observed in their menstrual practice ($p < 0.01$). Out of the 192 girls, 30 (15.62%) girls used only cloths during menstruation, 78 (40.61%) used only sanitary pads while 84 (43.75%) girls used both sanitary pads and cloths during menses.

Table 5: Practice Of Menstrual Hygiene In Adolescent Girls Using Cloth (n= 114)

Chi-square / p value	Post Test		Pre Test		Practice of Menstrual Hygiene Using Cloth
	%	No.	%	No.	
$X^2=21.67$ df=1 p=0.00 p<0.01					Type of clothes used?
	93.85	107	70.17	80	Cotton
	6.14	7	29.82	34	Other(Terricott, Nylon etc.)
$X^2=35.27$ df=3 p=1.1 p>0.05					How often do you change clothes in a day?
	1.75	2	25.43	29	One times a day
	34.21	39	37.71	43	Two times a day
	47.36	54	21.05	24	Three times a day
	16.66	19	15.78	18	Four times a day
$X^2=37.25$ df=1 p=0.00 p<0.01					How do you wash your clothes?
	86.84	99	49.12	56	Soap and water
	13.15	15	50.87	58	Only water

X ² =28.67 df=1 p=0.00 p<0.01	68.42	78	89.47	102	Where do you dry the cloth?
	31.57	36	10.52	12	House-corner Sundry
X ² =6.317 df=3 p=0.097 p>0.05	41.22	47	50.87	58	How do you dispose of the used clothes?
	48.24	55	32.45	37	Burn the cloth Throw in dustbin
	2.63	3	3.50	4	Burry the cloth
	7.89	9	13.15	15	Throw on roads

Data given in Table 5 show the practices during menstruation among girls using cloths (n=114). In the pre-test period, the type of cloths used was reported as cotton 80 (70.17%) which increased to 107 (93.85%) girls using cotton in post-test period (p<0.01). During the pre-test phase, 58 (50.87%) girls washed their cloths only with water and 56 (49.12%) washed with soap and water. In the post-test period, the figures rose with 99 (86.84%) girls washing their cloths with soap and water (p<0.01). For drying the cloths, in the pre-test period, only 12 (10.52%) girls sundried their cloths which increased to 36 (31.57%) in the post-test phase (p<0.01).

Table 6: Practice Of Menstrual Hygiene By Girls Using Sanitary Pad (N=162)

Chi-square / p value	Post Test		Pre Test		Practice of menstrual hygiene in girls using sanitary pad
	%	No.	%	No.	
X ² =52.82 df=3 p=0.00 p<0.01					How often do you change pad in a day?
	6.79	11	40.74	66	One times a day
	54.32	88	38.88	63	Two times a day
	27.77	45	14.19	23	Three times a day
	11.11	18	6.17	10	Four times a day
X ² =22.84 df=1 p=0.00 p<0.01					In what do you wrap the pads while disposing off ?
	77.77	126	52.46	85	Paper
	22.22	36	47.53	77	Plastic
X ² =12.51 df=2 p=0.001 p<0.01					How do you dispose of the used sanitary pad?
	67.90	110	49.38	80	House-dustbin
	30.86	50	46.29	75	Road side
	1.23	2	4.32	7	Latrine

Out of the 166 girls using sanitary pads during menstruation, 66 (40.74%) girls reported that they changed the pads only once a day during the pre-test period while the figure reduced to 11 (6.79%) in the post-test phase (p<0.01). In pre test only 85 (52.46%) girls reported that they wrap the pads in paper and 77 (47.53%) wrapped it in plastic. After post test the number of girls who wrapped their pads in paper increased to 126 (77.77%), (p<0.01). In pre test 80 (49.38%) girls disposed off the sanitary pads in the house-dustbin while 75 (46.29%) and 7 (4.32%) girls disposed it off by the roadside and latrine respectively. After post test 110 (67.90%) girls disposed off sanitary pads in the house dustbin while 50 (30.86%) and 2 (1.23%) girls disposed it off by roadside and latrine respectively (p<0.01). (Table 6).

VI. Discussion

In the present study, the mean age of menarche of the adolescent school girls was 12.8 years which is similar to the study conducted in Singur, West Bengal, the mean age at menarche was found to be 12.8 years.⁸ In the present study, 148 (77.08%) of the girls were aware of menstruation prior to menarche. Ideally, all mothers should make their daughters aware of menstruation even before they could attain menarche. In the present study, mother was found to be the main source of information for only 80 (41.66%) girls. This could be due to lack of proper communication between mother and daughter owing to traditional taboos, they feel awkward and embarrassed to discuss on this subject. Another important source of information was Teachers 59 (30.72 %) which indicates the importance of health education given in schools, specially in rural area. The other sources of information were friends 23 (11.37%), sisters and relatives 21 (10.93%), and other sources like TV, print media etc. 9 (4.68%). In a study conducted by Parvathy Nair et al,⁹ 41 per cent of the girls received information about menstruation from their mothers, 22.4 per cent got information from their elder sisters, 21 per cent from their friends, 4.4 per cent from television and 3.3 per cent of the girls got information from books. Another study conducted by Deo et al¹⁰ among urban girls, mother was reported as the main source of information on menstruation for 27.5 per cent of the girls whereas it was a teacher for their rural counterparts (27.01%).

In the present study, the inter menstrual interval was reported to be 26-30 days by 93 (48.43%) girls whereas it was 31-45 days for 38 (19.79%) girls, 15-25 days in 38 (19.79%) and 46-60 days for 23 (11.79%)

girls. This could be because of changing trends in lifestyle, dietary habit, stress, hormonal imbalance or some medical reasons which requires gynecological assessment at the earliest. In a study conducted by Rajni Dhingra et al¹¹ among tribal Gujjar adolescent girls, only 9.9 per cent of the subjects had their menstrual cycle between 45-60 days which is slightly lower than the figure in the present study.

The knowledge regarding the organ from where menstrual blood comes was correctly reported as uterus by 65 (33.85%) girls whereas 92 (47.91%), 20 (10.41%), and 15 (7.81%) reported stomach, urethra and ovary respectively. The girls were not able to differentiate between urethral and vaginal opening. After post test 192(100%) reported uterus as organ from where menstrual blood comes, this shows the low level of knowledge among girls about female anatomy. Also the topic is least talked by girls as they feel uncomfortable and shy. In a study conducted by SP Singh et al¹² among adolescent girls of Varanasi district (UP), 43.5 per cent of the girls correctly responded uterus as the organ from where the menstrual blood comes. In the study conducted by Adhikari P et al¹³ among the rural adolescent girls of Nepal, 25.3 per cent of the girls reported uterus as the organ from where the bleeding comes whereas 32 per cent, 26.7 per cent and 16 per cent said the fallopian tube, vagina and urinary bladder respectively from where the menstruation blood comes.

In the present study, the pre-test menstrual perceptions among girls were found to be poor and practices were often incorrect. 139 (72.39%) girls felt that "menstrual blood is impure." This is almost similar to (73.1%) girls reporting menstruation as "release of bad blood" in a study conducted by Echendu Dolly Adinma¹⁴ among Nigerian secondary school girls. In the present study, 153 (79.68%) girls felt that there was an influence of hot and cold food on menstrual flow while in the post-test, there was a significant difference in the level of knowledge ($P < 0.01$). Similarly, in the pre-test phase, 192 (100%) girls reported that they do not visit holy places during menstruation and 99 (51.56%) girls reported they are kept isolation at home during menses. In the post-test phase, there was no significant difference in the restrictions followed by them ($P > 0.05$). This shows the influence of socio-cultural beliefs and taboos regarding menstruation among these adolescent girls. Even girls from literate family find it difficult to go against the restrictions, owing to such strong socio-cultural beliefs and practices. Such different types of restrictions practiced during menstruation were also reported by Das Gupta A⁸ in their study where 70.59 per cent of the girls did not attend any religious occasion, 42.65 per cent did not play, 33.82 per cent of them did not perform any household work and 10.29 per cent of the girls did not attend any marriage ceremony during the menstrual period. In the present study, during the pre-test period, only 57 (29.68%) girls reported that they wash their genitalia often with soap and water whenever they change their cloths or sanitary pads whereas following health education in the post-test period 182(94.79%), there was significant improvement in the menstrual practice ($P < 0.01$).

In the present study, 30 (15.62%) girls used only cloths while 78 (40.61%) girls used only sanitary pads during menses. Due to non affordability of sanitary pads, 84 (43.75%) girls used sanitary pads only during the first two days of cycle as the flow is heavy in these days while in the next 2-3 days, they preferred cloths for menses. Use of sanitary pad is significantly more than a study done by Das Gupta A⁸ where only 11.25% girls used sanitary pads during menstruation. Apparently, poverty, high cost of disposable sanitary pads and to some extent ignorance dissuaded the study population from using the menstrual absorbents available in the market. In a study conducted in Rajasthan by Khanna et al.¹⁵, three-fourths of the girls used old cloth during their periods and only one-fifth reported using readymade sanitary pads. Increase use of sanitary pad in rural adolescent girl is because of free distribution of sanitary napkins to girls in the age group 13-19 years studying in class 6 to 12 under Rajasthan Kishori Swasthya Evum Swachhata Karyakram," launched in July 2015. In a study conducted by Echendu Dolly Adinma¹⁴ among Nigerian school girls, amongst materials used as menstrual absorbent, toilet tissue paper was most commonly used (41.31%) followed by sanitary pads (32.7%), cloths (14.4%) and multiple materials (10.7%) was used by the girls.

It is seen that in the pre-test phase, 58 (50.87%) girls washed their cloths only with water and 56 (49.12%) washed their cloths with soap and water which in the post test phase, increased to 99 (86.84%) girls washing their cloths with soap and water. With regard to drying the cloths, in the pre-test period, only 12 (10.52%) girls sun-dried their cloths which increased to 36 (31.57%) in the post-test period. With regard to the final disposal of the used cloths, in the pre-test period, 58 (50.87%) girls burnt it, 37 (32.45%) girls threw it in the dustbin, 4 (3.50%) girls buried it and 15 (13.15%) girls threw it by the roads. In the post-test period, 55 (48.24%) girls reported that they threw the used cloths in the dustbin. Such menstrual practices were also reported in another study¹⁶ among adolescent school girls in Nepal where 59 per cent of the girls dried their washed reusable absorbent materials (cloths) outside the house and under sunlight. For final disposal of the menstrual materials, 43 per cent of the girls buried their absorbent materials followed by 35 per cent threw with other wastes and 19 per cent burnt the materials.

In the pre-test phase, 66 (40.74%) girls reported that they changed the pad only once a day while in the post-test it decreased to 11 (6.79%) thereby showing improved menstrual hygiene and practice following health education. Moreover, the findings emphasize on the inclusion of safe hygiene and sanitary practices should be

included in the school curricula as well as greater communication between student and lady teachers and between daughters and mothers.

VII. Conclusions

The positive results of this study show the feasibility of adolescent health education program implementation in the rural schools, the target group, especially standards 6th to 12th. This will ensure the health of the girls, which can be regarded as the index of a healthy society. Taking into account the health implications and prevailing socio-cultural and economic factors, there is an urgent need for intensifying effective strategies to persuade the adolescent school girls to adopt healthy menstrual practices. In addition to imparting such education to the teenage girls and teachers, extending it to their family members, especially mothers, will be a blessing in disguise.

The state government should also continue distribution of sanitary napkins, free or at affordable cost, to the adolescent girls specially in rural area as it increased the use of sanitary napkin in school going girls. The state government should also plan to distribute sanitary napkins through ASHA/AWW to the adolescent girls who are not coming to schools due to various reasons

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