

**Original Article****Effectiveness of Information Education and Communication on Menstrual Hygiene among Adolescent School Girls of Jumla District**Anika Dahal<sup>1</sup> and Kamal Prasad Acharya<sup>2</sup><sup>1</sup>Department of Nursing, Nobel Medical College Teaching Hospital, Biratnagar, Nepal.<sup>2</sup>Government of Nepal, Teku.Article Received: 18<sup>th</sup> April, 2019; Accepted: 22<sup>th</sup> August, 2019; Published: 31<sup>st</sup> December, 2019DOI : <http://dx.doi.org/10.3126/jonmc.v8i2.26714>**Abstract****Background**

Menstruation and menstrual practices are darkened by taboos and different societal as well as cultural restrictions, which results in lack of adequate knowledge in adolescents regarding the scientific facts of menstruation as well as healthy menstrual hygiene practices. The objective of the study was to find out the effectiveness of information, education and communication (IEC) on menstrual hygiene among adolescents of Jumla district.

**Materials and Methods**

Quasi-experimental research design was used for the study. The samples were taken from government school, Shree Janta Secondary Technical school of Chandannath municipality of Jumla District. A total of 112 adolescents girls studying in class 9 and class 10 were selected by using non probability total enumerative sampling technique. Data was collected by using self administered questionnaire. Data analysis was done by descriptive and inferential statistics.

**Results**

The study revealed that 8.9% of respondents had high knowledge during pre test which was significantly increased to 60.7% during post test and 27.7% of respondents had good practice during pre test which was significantly increased to 51.8% during post test

**Conclusion**

The present study concluded that adolescents lacked appropriate knowledge and practices about menstruation in the pre test which significantly increased in post test. Thus, structured health education program can significantly bring positive change in healthy menstrual hygiene practices.

**Key words:** *Adolescents, Knowledge, Menstruation*

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**\*Corresponding Author:**

Anika Dahal

Lecturer

Email: [anika\\_dahal@yahoo.com](mailto:anika_dahal@yahoo.com)ORCID: <http://orcid.org/0000-0001-5433-9278>**Citation**

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## Introduction

Menstruation is a fundamental part in life of human, and menstrual hygiene is important to the loftiness and safety of girls. About 52% of the female population is of reproductive age in worldwide, meaning menstruation is part of their normal life [1].

Menstrual hygiene is integral aspect of reproductive health and poor menstrual hygiene may lead to various adverse effects like urinary and reproductive tract infections [2]. There is insufficient knowledge regarding menstrual hygiene and no proper attention has been given. In order to sustain menstrual hygiene, use of sanitary pads and cleaning the genital area are important activities. Unhygienic menstrual activities can affect girls' health and the susceptibility to reproductive tract infections and inflammatory pelvic diseases and other complications is increased [3]. These practices and lack of knowledge results in absenteeism from school and poor reproductive health in adolescent females of Nepal [4].

Change in knowledge and practices regarding menstrual hygiene can be achieved by providing education on facts of menstruation. This can be provided through information, education and communication (IEC) activities so that she can know appropriate technique in acquiring good menstrual hygiene practices [5].

## Materials and Methods

Quasi-experimental research design was used to assess the effectiveness of IEC on menstrual hygiene among adolescent school girls of Jumla District. The study was conducted at government school, Shree Janta Secondary Technical school of Chandannath municipality of Jumla District. The populations selected for the study were all adolescent girls who were studying in 9<sup>th</sup> and 10<sup>th</sup> standard who attained menarche and who gave consent for enrollment in the study. Non probability total enumerative sampling technique was used to assess the effectiveness of IEC on menstrual hygiene among adolescents school girls of Jumla district. Required sample size was calculated by using the formula for experimental study. To reduce non response error additional 10% was taken so sample size was 112, calculated based on mean value of pretest and posttest as 50.60 and 93.11 respectively, as well as standard deviation of pretest and post test as 13.03 and 7.55 respectively, level of significance at 5% and power of study at 80% [10]. All adolescent girls attending 9th and 10th class during research study was included.

A structured questionnaire was drafted for this purpose and the relevant data was collected from

the sample in both the pre test and post test session. The intervention package was a structured teaching programme which was conducted for one hour for two days as two groups were divided, a group a day which consisted of pictures, videos and demonstration related to menstruation, menstrual cycle, menstrual hygiene practices and sanitation. The intervention package was validated by the experts. The intervention was given immediately after the pretest assessment of the participants. Post test was done after 2 months of giving intervention. The content validity of the research instrument was established by subject expert, consultant and linguistic professionals. The reliability of the instrument was done by pre-testing of the tool among 10% (11) of the adolescents girls of total sample at school of Jumla. The internal consistency of instrument was established by Cronbach' Alpha test, the value of the test was 0.79. On the basis of pre-testing, questions was modified and finalized.

Data was collected after getting ethical clearance from Nepal Health Research Council and approval letter from selected school of Jumla district. The pre test data and post test data including intervention was commenced from 18<sup>th</sup> February 2018 to 19<sup>th</sup> April 2018 in day shift and self administered questionnaire was used to collect the information. The data was analyzed using the IBM SPSS version 20 for analysis. Data was summarized using descriptive statistics i.e. frequency, percentage, mean and standard deviation to assess the knowledge and practice of menstrual hygiene after pretest and post test. Paired t-test was used evaluate the effectiveness of teaching program on menstrual hygiene among rural adolescent school girls.

## Results

The mean age of respondents was 14.97 ( $\pm 0.9$ ). Similarly, in regards to religion, 90.2% were Hindu and 2.7 % respondents were Christian. Among the educational level of the respondents, 67% were studying in class 10 and 33% of respondents were studying in class 9. Similarly, among the total respondents, 65.2% of the respondent's fathers were literate and 29.5% of the respondent's mothers were literate. In regards to age of menarche, the mean age for menarche was 13.2 ( $\pm 0.1$ ) years. And finally, with respect to the knowledge about menstruation before menarche, 52.7% respondents knew about menstruation before menarche, while 54.2% respondents had the information regarding menstruation through their mother.

Regarding feelings towards first menstruation, 43.8% of the respondents felt confused during



their first menstruation. Concerning the regularity of menstruation, 83% of respondents had regular menstruation while 72.3% had problem during menstruation. In regards to the problem faced during menstruation, out of 81 respondents who experienced problem, nearly half of respondents (44.6%) experienced abdominal pain as most discomforting problem during menstruation. Regarding use of medication, only 8.9% respondents used medicine during menstruation. Concerning educational session regarding menstruation, 46.4% of respondents had already received educational session regarding menstruation before pre test while 66% of respondents knew about chaupratha.

**Table 1: Impact of Menstrual Educational Programme on Menstrual Hygiene Knowledge n=112**

Characteristics	Pretest		Posttest		% of difference	P value
	Frequency	Percent	Frequency	Percent		
Cause of menstruation	68	60.7	94	83.9	23.2	<0.001
Organ of menstrual blood flow	37	33.0	80	71.4	38.4	<0.001
Menstrual blood is impure	10	8.9	54	48.2	39.3	<0.001
Excessive bleeding lead to anemia	28	25.0	77	68.8	43.8	<0.001
Woman have menses during pregnancy	85	75.9	95	84.8	8.9	0.105
Delayed menstrual cycle needs physician consultation	83	74.1	101	90.2	16.1	0.003
Poor menstrual hygiene leads to infection	85	75.9	95	84.8	8.9	0.096
Nutrient lost during menstruation	32	28.6	92	82.1	53.5	0.158
Normal length of menstrual cycle	47	42.0	78	69.6	27.6	<0.001
Cleaning of external genitalia necessary during menstruation	91	81.3	99	88.4	7.1	<0.001

Table 1 shows the impact of information, education and communication on menstruation knowledge, where 60.7%, 33.0% and 8.9% of respondents correctly knew the cause of menstruation, organ menstrual blood flow and the purity of menstrual blood respectively. At post test, respondents had significantly increased their knowledge on these three items (83.9%,71.4% and 48.2%).

Regarding the absorbent used during menstruation, at pretest 15.2% of participants mentioned that they used sanitary pads during menstruation, increasing to over 19.6% after the education programme. The frequency of changing pads/cloths per day and drying the absorbent outside in sunlight was higher at post test compared with pretest. Disposal of the absorbent by burial/burning or putting in a dustbin was significantly higher at posttest compared with pretest. There was a significant improvement at post test compared to pretest in cleaning the genitalia every time the toilet was used or during bathing.

**Table 2: Impact of Menstrual Educational Programme on Menstruation Practice. n=112**

	Pretest		Posttest		P value
	Frequency	Percent	Frequency	Percent	
<b>Absorbent used during menstruation</b>					
Sanitary pad	17	15.2	22	19.6	0.026
New cloths	23	20.6	39	34.8	
Rag made	72	64.3	51	45.5	
<b>Drying of used absorbent</b>					
Outside room in sunlight	7	6.3	23	20.5	0.001
Inside the room with sunlight	81	72.3	70	62.5	
Inside or outside room without sunlight	24	21.4	19	17.0	
<b>Changing of absorbent</b>					
More than 4 times	58	51.8	64	57.1	<0.001
2-3times	36	32.1	33	29.5	
1 time	18	16.1	15	13.4	
<b>Disposal place</b>					
Burial/Burning/Dustbin	57	50.8	62	55.3	0.466
Toilet	45	40.2	42	37.5	
In open field	10	8.9	8	7.1	
<b>Clean genitalia</b>					
Every time after use of toilet	19	22.3	27	24.1	0.183
During bath	68	60.7	65	58.0	
Don't clean	25	22.3	20	17.9	
<b>Material used to clean external genitalia</b>					
Antiseptic solution and water	15	13.4	22	19.6	0.084
Soap and water	67	59.8	67	59.8	
Only water/don't clean	30	26.8	23	20.5	
<b>Bath</b>					
Each day	15	13.3	26	23.2	<0.001
At 4 <sup>th</sup> day of menstruation	88	78.6	80	71.4	

**Table 3: Impact of Menstrual Educational Programme on Level of Knowledge regarding Menstrual Hygiene**

Level of Knowledge	Pretest		Posttest		P value
	Frequency	Percent	Frequency	Percent	
Poor Knowledge (0-3)	23	20.5	4	3.6	<0.001
Medium Knowledge (4-7)	79	70.5	40	35.7	
High Knowledge (8-10)	10	8.9	68	60.7	
<b>Total</b>	<b>112</b>	<b>100.0</b>	<b>112</b>	<b>100.0</b>	

Table 3 shows the level of knowledge of respondents before and after education programme, where 8.9% of respondents had high knowledge during pre test which was significantly increased to 60.7% during post test

With regards to restrictions and behaviors during menstruation, 89.3% of respondents attended school during menstruation which was significantly increased during post test to 96.4%. With regards to restrictions 75% of respondents had restriction on household work. 81.3% had restriction to enter kitchen, 89.3% respondents had restriction to do religious work or visit temple and 47.3% of respondents were compelled to stay at chaugar during menstruation. This figure was same in post test.



**Table 4: Impact of Menstrual Educational Programme on Level of Practice Regarding Menstrual Hygiene**

Level of Practice	Pretest Frequency	Percent	Posttest Frequency	Percent	P value
Poor Practice (0-4)	17	15.2	4	3.6	0.001
Fair Practice (5-8)	64	57.1	50	44.6	
Good Practice (≥9)	31	27.7	58	51.8	
<b>Total</b>	<b>112</b>	<b>100.0</b>	<b>112</b>	<b>100.0</b>	

Table 4 shows the level of practice of respondents before and after education programme, where 27.7% of respondents had good practice during pre test which was significantly increased to 51.8% during post test

## Discussion

Menstruation is the biggest pubertal transition that is taking place in adolescent girls and is a cycle of development and maturation and preparing them for motherhood. It is encircled by different customs, myths and taboos. It requires access to effective materials and facilities for proper menstrual hygiene, without which poor health effects can result [6]. Regarding the socio-demographic data, findings of the current study revealed that the mean age at menarche was 13.2 years. This result is in accordance to the results from other studies conducted in Sunsari, Nepal, which illustrated that the menarche mean age was 13.1 years [4]. Another study done at Belgaum, [7] the mean age of menarche was 13.6 years. However, in a study done among North Indian adolescent girls [8], the mean age was 12.8 years. While in a study conducted in Egypt [9], it was found that the mean age was 12.7 years. The observed differences could be due to difference in geographical area, environmental condition, the nutritional habits and girl's general health condition.

The present study revealed that most of the adolescent girls had almost the same source of information regarding their menstruation as 54.2% of the girls confirmed that they got information about menstruation from their mothers. In Nepal, menstruation is hidden topic and it is not appropriate to talk about it because of different cultural beliefs and sensitivity of the topic that may lead to inaccurate, incorrect and incomplete information. A study done in Sunsari, Nepal revealed that 39.3% of girls went to their mothers to get their answers regarding menstrual questions [4]. In regards to regularity of menstruation, the current study showed that 83% of respondents had regular menstruation. This is nearly similar with the study findings done in Egypt where 66% of respondents had regular menstruation [9]. Concerning the experience regarding the first

menstruation, present study revealed that 40.2% were frightened during their menarche. This is nearly similar to the study conducted in Sunsari, Nepal. Menstruation comes with various problems, where dysmenorrhoea was the most common, which is similar to the findings from other studies [4].

Menstruation is an important aspect in a girl's reproductive health. Thus, health education in menstrual hygiene is very necessary for adolescence girl to cope with menstruation and maintain good menstrual hygiene [10].

The current study found that the average awareness score of adolescent girls was poor before the menstrual health education program was introduced; whilst it played a crucial role in increasing their level of knowledge after it has been implemented. Their understanding has been significantly improved in the postintervention process. Such results were consistent with other studies conducted in Egypt, Saudi Arabia and India [10-12]. In our study, knowledge on cause of menstruation was poor among participants i.e. only 60.7% of them knew that menstruation is normal physiological process among adolescent girls before health education intervention but later the knowledge was significantly increased to 83.9% after intervention. Nearly similar findings were reported in a study conducted in Tamil Nadu, India [13]. Similarly, the present study showed that there was significant improvement after health education intervention in the knowledge regarding the organ of blood flow 33 percent correctly reported as uterus before intervention which was significantly increased to 71.4% after intervention which was similar to study findings of study conducted in India [7].

In the present study, majority of girls felt "menstrual blood is unclean" which is similar to study conducted by Adinma E where 73.1% girls reported menstruation as "release of bad blood" [14]. In present study, there was significant increase of use of pad in pre and post intervention period i.e. from 15.2% to 19.6% and decrease in the use of rag cloths from 64.3% to 44.3%. The findings was in accordance in the study conducted in Nigerian school girls where there was significant increase in the use of sanitary pad after receiving education on menstrual hygiene i.e. from 61.7% to 75.1% [15].

Similarly in the pretest phase of our study, 32.1% girls reported that they change the absorbent only twice to thrice a day while in the post test, it decreased to 29.5%, their by showing improved menstrual hygiene and practice following health education. With regard to final disposal of pad, in the pre-test period, 50.89% girls disposed it in the



dustbin, burnt and buried. In the post-test period, 55.4% girls reported that they threw the used pads in the dustbin, burnt and buried. Similar results were also reported in a study done in Bangladesh regarding disposal of the menstrual materials, in the pre test phase 56.5% of the girls burnt and buried absorbent materials and in the post test phase, 82% girls reported that they burnt the absorbent [12]. Maintaining hygiene is very essential during menstruation [1]. Having access to clean genitals and use of soft absorbent sanitary products will protect the health of adolescents girl in the long run. In the present study, during the pre-intervention phase, only 27.7% of adolescents had good hygiene practices. In the post-intervention phase, there was a significant improvement in good menstrual practices (51.8%). Numerous studies have found that providing adolescents with educational materials increases their knowledge and build up positive attitude towards puberty and make them accept it as a natural physiological phenomenon [12].

In present study, majority of the respondents were restricted to go in kitchen and visit religious places. In the post-test phase, there was no significant difference in the restrictions followed by them ( $P > 0.05$ ) [12]. The result showed socio-cultural beliefs and taboos had great influence on menstruation among adolescent girls. Those females who achieved higher education also find it very hard to go against all the restrictions and they are compelled to believe the cultural beliefs and practices.

Some of adolescent girls stated that traditional practices like restrictions on going to other's home, staying at cow shed, taking bath also prevailed in their society. The findings of the study regarding restrictions during menstruation show that the taboos on menstruation still do exist. Our society is restricted by different cultural beliefs that can develop negative attitude of female on menstruation. As reproductive health is major concern in maintaining overall health of individual, effective intervention should be carried out to avoid the restrictions that affect the menstrual hygiene which are practiced by adolescence. Despite of greater educational change, culture and beliefs are restricting the change in attitude toward menstruation, thence affecting the menstrual hygiene management. This condition seeks urgent need to address the harmful practices in the name of culture. The first possible limitation is that the study sample was taken from a single setting. The second limitation is that the study was taken from a single setting. The period between pretest and post test was only 2 months

## Conclusion

The findings of the study concluded that there was deficit in knowledge and practice regarding menstruation in adolescence girl before the implementation of health education programme. However the knowledge and practices significantly improved in post test after the intervention. Thus, health education regarding menstruation and menstrual hygiene should be included in the curriculum of each school so that they can manage their menstruation hygienically.

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