

Effect of introducing learning sessions about menstrual hygienic practices on knowledge and practices of deaf-dumber adolescents

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Abstract: To evaluate the effect of introducing learning sessions about menstrual hygienic practices on knowledge and practices of deaf-dumber adolescents. **Subjects and Methods:** A quasi-experimental study was conducted at Omar Ebn El-khattab School in El Mansoura city on a convenience sample of 53 female students who were aged between 14 to 20 years and had menarche since two years or more. A structured questionnaire and assessment sheet were used for data collection. **Results:** There are significant improvement in girl's knowledge and practices about nearly all menstruation relevant items at posttest compared to pre-test. All of the participant girls believed that menstruation is a disease, it is dangerous to perform physical activity during menstruation and considered menstrual blood contains dangerous substances at pretest, while after education their conceptions improved (85%, 86.8%, 88.7% and 83% respectively; $p < 0.001$). Before learning sessions 60.4% were changing the used pads every 4-8 hours, but after the sessions 92.5% were keen to change whenever soiled. **Conclusion and recommendations:** The present study revealed unhealthy menstrual practices, low level of knowledge and various myths among deaf-dumber adolescents. The study pointed out positive effect for the learning sessions in improving the deaf-dumber adolescent's knowledge and practices. Accordingly, adolescent girls with special needs are requiring continuous attention and awareness raising regards healthy practices.

Keywords: Learning sessions, Deaf-dumber, adolescents, menstrual hygiene and practices.

1. INTRODUCTION

Adolescence is a critical period in the life of girls. Girl's adolescence indicates conversion from girlhood to womanhood. During this phase of growth, the girls first experience menstruation and its related problems which is marked by feelings of anxiety and keenness to know about this natural phenomenon (Lawan et al., 2010). One out of five in Egypt is between the ages of 15 and 24 years, a total of 16 million in 2012, according to the United Nations Population Division (2012). In the next 15 years, 26 million more Egyptians will reach age 15 years.

Preparing the young girls for the transition to adulthood; a time when sexuality and relationships are central, is a challenge. Currently, young Egyptians girls receive little accurate information about sexuality and protecting their health, leaving them vulnerable to coercion, abuse, unintended pregnancy (Wahba, 2012).

Poor menstrual hygiene and inadequate self-care are major determinants of morbidity and complications in adolescent girls; such as urinary tract infections, vaginal scabies, abdominal pain, and complications during pregnancy, beside the absence from school (Morowatisharifabad et al., 2018). In many areas of developing countries, a culture of silence surrounds menstruation and its related issues (Khudair, 2013). As a result, many young girls lack appropriate information on menstrual hygiene. Infections due to lack of menstrual hygiene have been reported in many studies. It was evident that most adolescent girls had incomplete and inaccurate information about menstrual physiology and hygiene (Bayray, 2012).

Deaf people defined according to WHO as 'Deaf' people mostly having profound hearing loss, which implies very little or no hearing (WHO, 2013). A deaf girl in particular, face greater problems than those with other disabilities because they are less likely to obtain information from formal sources such as health professionals, discussions, and television compared to the hearing one (Calderon et al., 2011). Thus, the current study was conducted to evaluate effect of introducing learning sessions about menstrual hygienic practices on knowledge and practices of deaf-dumber adolescents.

Significance of the Study:

Over 5% of the world's population (360 million people) having disabling hearing and the majority of these people lives in low- and middle-income countries (WHO, 2011). Furthermore, about 10 percent of the world's population, 650 million people live with a disability, and their sexual and reproductive health has been neglected. Hygiene related practices of girls during menstruation are of considerable importance as it has a health impact in terms of increased vulnerability to infection. Majority of adolescent girls usually have lack of scientific knowledge and hygienic practice during menstruation, and they often are reluctant to discuss this embracing topic with their care-providers and often hesitate to seek help regarding the menstrual problem from external sources. Thus, the current study was conducted to evaluate effect of introducing learning sessions about menstrual hygienic practices on knowledge and practices of deaf-dumber adolescents.

Aim of the study:

The current study aims to evaluate the effect of introducing learning sessions about menstrual hygienic practices on knowledge and practices of deaf-dumber adolescents.

Study hypotheses:

To achieve the aim of the present study two hypotheses were tested.

Hypothesis I: "Deaf-dumber adolescents; who attend the learning sessions about menstruation, record higher percentage of the correct answers about physiology of the menstrual cycle at the posttest compared to the pretest assessment".

Hypothesis II: "Deaf-dumber adolescents; who attend the learning sessions about menstruation, record higher healthy practices at the posttest compared to the pretest assessment".

2. SUBJECTS AND METHOD

Study design:

A quasi-experimental research design was used to achieve the aim of the current study.

Study setting:

The present study was conducted at Omar Ebn El-khattab School. This school was designed to provide teaching services for Deaf-Dumber male and female students in El Mansoura city, Dakahlia Governorate.

Sampling:

Among 54 female students who were registered in the academic year 2016-2017, one girl was identified as irregular attendant; thus she was excluded from the study. A convenience sample of 53 female students was participated in this study. The students were distributed among the 1st, 2nd, and 3rd years of both preparatory and secondary levels in Omar Ebn El-Khattab School. They shared the following criteria:

- Age between 14 to 20 years.
- Had menarche since two years or more.

Tools of data collection:

Two tools were used to collect the required data that fitting aim of the present study.

Tool I: A structured questionnaire

It was designed by the researcher after reviewing relevant literature. It was divided into two parts:

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Part (1): The first part includes the general characteristics of the participants. It was consisted of 5 items (e.g., Age, residence, religion, level of education in which the student was registered, and source of information about menstruation).

Part (2): This part describes the menstrual cycle characteristics, such as age at menarche, menstrual cycle pattern; either regular or irregular, duration of the blood flow was expressed either normal (from 3-7 days) or prolonged > 7 days, menstrual cycle interval; was showed either < 21 days, 21-35 days, or > 35 days; while amount of menstrual blood flow was estimated by number of pads used per day.

Also, the associated menstrual symptoms were presented in this part (i.e., breast pain, abdominal pain, back pain, weight gain, tension, pale face, or nervousness). In addition, the actions taken by the participant girls to relieve such symptoms were identified as (e.g., nothing, drink warm fluids, sleep, consult doctor, or perform exercise). The structured questionnaire was developed in Arabic language and completed once by the participants before introducing the learning sessions.

Tool II: Assessment sheet

This tool was developed by the researcher to identify the participants' level of knowledge about the menstrual cycle and the healthy practices during the period of blood flow. It consisted of 25 items; divided into two parts:

Part (1): This part focused on evaluating the participant's knowledge. It was evaluated by asking the applicant to answer questions about some matters related to physiology of menstrual cycle; such as nature of menstrual cycle, gender subjected to menstruation, age of menarche and physiological causes of menstruation interruption etc.

Part (2): Focused on practices of the participant girls during menstruation. It was evaluated by asking the applicant to answer questions about care of menstrual blood flow; like type of towels used during menstruation; either disposable sanitary pads or reusable cloth, time interval to change the pads, how to wash the reusable pads, how to care with the perineal area; in terms of methods of cleaning, direction of cleaning, dryness of perineal area, using antiseptic solution, hand washing, removal of pubic hair, and bathing during menstrual blood flow. Tool II was developed in Arabic language and completed by the participants twice; firstly at baseline before introducing the learning sessions and again after 3 months from introducing the learning sessions.

Validity of the tool:

The developed tools were reviewed by a panel of five experts in Maternity Nursing and Gynecology Medicine before introducing it to the participant students. No modifications were required.

Pilot study:

A Pilot study was done on 10 % of the study sample. The pilot was done to evaluate the relevance, clarity and content validity of the tools used for data collection, evaluate time needed for the participants to complete study tools and to find out possible obstacles that might face the researcher and interfere with data collection. The pilot sample was excluded from the analyzed study sample. This phase consumed about three months.

Ethical consideration:

- Official permissions were taken from the Ethics Committee of the Faculty of Nursing in Mansoura University and from the head of Omar Ebn El-Khattab School.
- Informed consents were taken from parents of the participant girls < 18 years and from the girls ≥ 18 years after explanation of the aim and nature of the study.
- The investigator was emphasized that participation is voluntary and each participant had the right to withdraw from the study at any time without consequences.
- Anonymity, privacy, safety and confidentiality of the collected data were absolutely assured throughout the whole study.

Learning sessions:

The sessions were conducted at a private class prepared by the researcher with the assistance of the teachers; to include adequate number of chairs and a handle for Flipcharts. The session's materials were provided by the researcher in presence of two female teachers. Content was provided in form of power point presentations enriched with pictures. Flipcharts were used for more clarifications. Each presentation was provided in a duration of twenty minutes; to cover one or two items only. Total numbers of the learning sessions were 4 sessions ran over four weeks. It is provided to the students in small groups (n=5-6) according to their academic schedules.

Statistical analysis:

The collected data were coded, tabulated and analyzed by using Statistical Package of Social Science (SPSS) version 20. Data were presented using descriptive statistics; frequencies and percentages were used for qualitative variables, while means and Standard Deviations were used for quantitative variables. Qualitative variables were compared using Chi-square test. Statistical significance was considered at P-value < 0.05, highly significant difference obtained at $p < 0.001$.

3. RESULTS**I: General characteristics of the study group**

Table 1 shows the distribution of the study group according to baseline characteristics. It displays that average age of the studied group was 16.3 ± 1.9 , the average age at menarche was 13.3 ± 1.1 years, most of the study group had regular menstrual cycle (90.6%), and the most (96.2%) experienced normal duration of blood flow; 3-7 days. Regarding the interval between menstrual cycles, the majority (84.9%) have normal intervals; from 21 to 35 days. Concerning the amount of blood flow, it was estimated by number of pads changed per day; with more than half of the study group (56.6%) were changed 2-3 pads per day compared to 43.4% changed ≥ 4 pads. All of the girls had previous information about the menstrual cycle and majority of them (81.1%) received information from the mothers.

II: Comparison of the adolescent girls' information pre and post the learning sessions

Table 2 shows the distribution of the participants according to their answers about physiology of the menstrual cycle pre and post the learning sessions. This table clarifies that between 35.8 to 47.2% of the study group gave incorrect answer at the baseline when asked about the normality of the menstrual cycle, monthly occurrence of the menstrual cycle, and about indication of the menstruation to puberty. However, at the posttest higher percentages (81.1%, 75.5%, and 77.4% respectively) gave correct answers for the same items. It is clear from this table that 77.4% and 49.1% from the participants thought that the menstruation occur to boys and girls, did not know that menstrual blood comes from the uterus. However, higher percentages (88.7%, and 73.6% respectively; $p < 0.001$) gave correct answers for the same items at the post test evaluation.

Table 3 shows the participants' myths about the menstrual process pre and post the learning sessions. At baseline evaluation, all of the participant girls had misconceptions almost about all of the evaluated items. All girls believed that menstruation is a disease, and all except one think that it is dangerous to perform physical activity during menstruation and think that the menstrual blood contains dangerous ingredients and girls being unclean during the period of the menstrual blood flow. Despite that the participants knowledge significantly improved after introducing the learning sessions to be around three quarters or to the majority of them (85%, 86.8%, 88.7%, and 83% respectively; $p < 0.001$) per each item.

Part III: Comparison of menstrual hygiene practices pre and post the learning sessions

Table 4 shows a comparison between the type of used pads in management of menstrual blood pre and post the learning sessions. Although more than three quarters (77.4%) of the participant girls tended to use disposable pads before the learning sessions, most of them (96.2%) tended to use it after the learning sessions. Before introducing the learning sessions, 22.6% of the participant girls were used the reusable pads; either cotton or nylon. This percent was decreased to only 3.8%; using cotton pads, after the learning sessions. It is obvious from this table that before attending the learning sessions less than two thirds (60.4%) of the participant girls were tended to change the used pads every 4-8 hours. However, after the learning sessions most of them (92.5%) changed their practice and changed the used pads whenever soiled. Differences observed were statistically significant.

Figure 1 compares between care of the reused pads pre and post the learning sessions. This table shows that before receiving the learning sessions, two thirds of the participant girls (66.6%) washed the pads with water and soap and dry inside home, 16.7% wash reusable pads with water and soap and ironed or dried the pads in sunlight, and the same percent (16.7%) washed the reused pads with water and soap, dry in sunlight and discard after 2-3 times from its use. However, after the learning sessions only 16.7% used the reusable pads and care of the pads was by washing with water and soap, dry in sunlight and the girls discarded the reused pads after 2-3 times from the first use. Differences observed at the pre and post sessions assessment were significant.

Table 5 shows a comparison between cleaning the genital area pre and post the learning sessions. Concerning washing the genital area during the menstrual phase, slightly more than half (52.8%) maintained that practice every toileting, around two fifth (39.6%) washed the genital area once daily, while 5.7% did not wash during the menstrual phase. However, after the learning sessions the majority (81.1%) of them keen to wash every toileting.

Table 6 shows a comparison between care of the body pre and post the learning sessions. The table shows that the majority of girls were used to shorten or remove the pubic hair upon won need pre the learning sessions, while most of the participant girls (94.3%) were keen to shorten or remove pubic hair regularly by end of menstruation after the learning sessions. Difference observed was statistically significant for dealing with the pubic hair. Conversely, taking shower during the menstrual blood flow period did not significantly affected by receiving the learning sessions ($p=0.196$).

Table 1: Distribution of the study group according to baseline characteristics (n=53)

Characteristics	Mean \pm SD or n	%
Age at menarche		
Mean \pm SD	13.3 \pm 1.1	
Pattern of menstruation		
Regular	48	90.6
Irregular	5	9.4
Duration of blood flow		
3 - 7 days	51	96.2
> 7 days	2	3.8
Interval of menstrual cycle		
< 21 days	4	7.5
21 – 35 days	45	84.9
> 35 days	4	7.5
Number of used pads per day		
2-3 pads	30	56.6
\geq 4 pads	23	43.4
Source of information		
Mother	43	81.1 %
Health care provider	8	15.1 %
Teacher	2	3.8 %

Table 2: Distribution of the participants according to their answers about physiology of the menstrual cycle pre and post the learning sessions (n=53)

Questions	Pre		Post		Test of significance	
	n	%	n	%	X ²	P
Does the menstrual cycle occur to girls and boys?						
Correct	12	22.6%	47	88.7%	46.827	<0.001
Incorrect	41	77.4%	6	11.3%		
Does the menstrual cycle is a normal process?						
Correct	34	64.2%	43	81.1%	0.168	0.682
Incorrect	19	35.8%	10	32.1%		
Does the girl normally menstruate once monthly?						
Correct	28	52.8%	40	75.5%	5.907	0.015
Incorrect	25	47.2%	13	24.5%		
Does menstrual blood come from the uterus?						
Correct	27	50.9%	39	73.6%	5.782	0.016
Incorrect	26	49.1%	14	26.4%		
Does menstruation indicate that girl has reached puberty?						
Correct	28	52.8%	41	77.4%	9.384	0.002
Incorrect	25	47.2%	12	22.6%		

Table 3: Participants' myths about the menstrual process pre and post the learning sessions (n=53)

Questions	Pre		Post		Test of significance	
	n	%	N	%	X ²	P
Does menstruation is a disease?						
Correct	0	0.0%	45	85.0%	32.716	<0.001
Incorrect	53	100.0%	8	15.1%		
Is it dangerous for the girl to perform physical activity during menstruation?						
Correct	1	1.9%	46	86.8%	34.605	<0.001
Incorrect	52	98.1%	7	13.2%		
Is menstrual blood carries dangerous ingredients?						
Correct	0	0.0%	47	88.7%	56.841	<0.001
Incorrect	53	100.0%	6	11.3%		
Do you believe that the girl is unclean during menstruation?						
Correct	0	0.0%	44	83.0%	31.024	<0.001
Incorrect	53	100.0%	9	17.0%		

Table 4: Comparison of the type of used pads in management of menstrual blood pre and post the learning sessions (n=53)

Type of used pads	Pre		Post		Test of significance	
	N	%	n	%	X ²	P
Disposable pads	41	77.4%	51	96.2%	8.230	0.004
Reusable pads	12	22.6%	2	3.8%	0.389	0.533
Cotton pads	10	18.9%	2	3.8%		
Nylon pads	2	3.8%	0	0.0%		
Changing the pads						
Every 4-8 hours	32	60.4%	4	7.5%	32.978	<0.001
Whenever soiled	21	39.6%	49	92.5%		

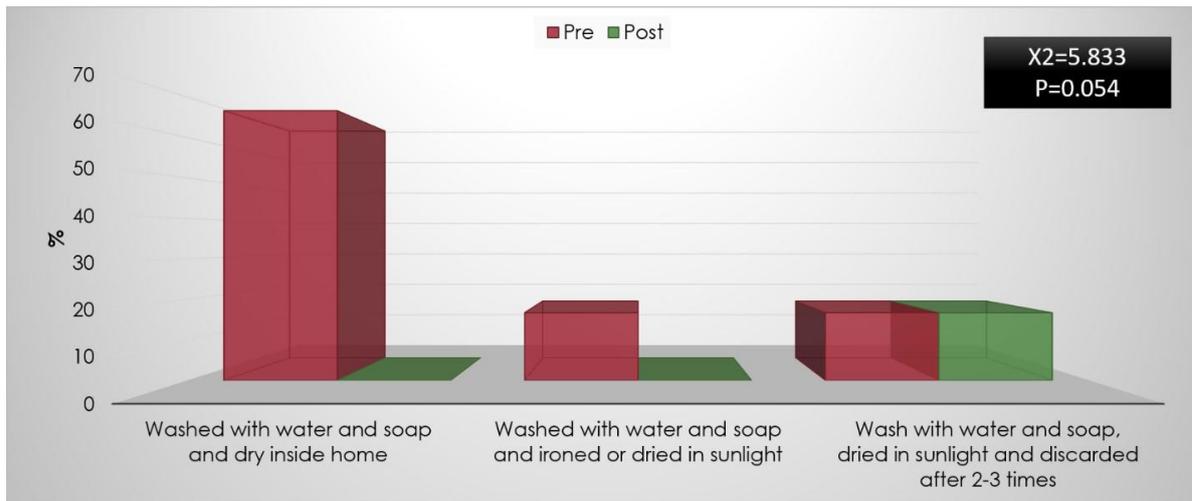


Figure 1: Comparison of care of reused pads pre and post the learning sessions (n=12)

Table 5: Comparison between cleaning the genital area pre and post the learning sessions (n=53)

The practice	Pre		Post		Test of significance	
	n	%	n	%	X ²	P
Washing the genital area						
Every toileting	28	52.8%	43	81.1%		
Once daily	21	39.6%	10	18.9%	11.072	0.003
No during menstruation	4	5.7%	0	0.0%		

Table 6: Comparison between care of the body pre and post the learning sessions (n=53)

The practice	Pre		Post		Test of significance	
	n	%	n	%	X ²	P
Shorten or remove the pubic hair						
At end of menstruation	10	18.9%	50	94.3%	4.30	0.038
Upon own need	43	81.1%	3	5.7%		
Taking shower during the menstrual blood flow						
Daily	8	34.0%	44	83.0%		
Every other day	8	34.0%	9	17%	3.62	0.196
After menstruation	37	32.1%	0	0%		

4. DISCUSSION

The study assessed the participant girls' knowledge at the baseline, then introduced the predesigned learning sessions, and reevaluates the adolescent girls about the same items after the session's provision. Unfortunately, the participant adolescent girls in the present study had poor knowledge about the physiology of menstruation at the pretest assessment compared to that of the posttest.

At the pretest, around half of the participants gave incorrect answers when were asked "Does the girl normally menstruate once monthly?, Does menstrual blood come from the uterus?, and when asked Does menstruation indicate that girl has reached puberty?" Moreover, more than three quarters believed that both girls and boys are subjected to the menstruation experience and slightly more than one third indicated that menstruation is not a normal process. This finding may be due to that the majority of girls received information from their mothers; mostly non directive guidance. Egypt is an eastern

society. Its culture may hinder opening sexuality talk between mother and child. However, posttest assessment revealed the positive effect of the learning sessions on the girls' knowledge. Accordingly, the first study hypothesis "Deaf-dumber adolescents; who attend the learning sessions about menstruation, record higher percentage of the correct answers about physiology of the menstrual cycle at the posttest assessment compared to the pretest assessment" was supported.

The present study finding reinforced that of **Bhudhagaonkar and Shinde (2014)**, who conducted a quasi-experimental study on a random sample of 100 Indian adolescent girls. **Bhudhagaonkar and Shinde (2014)**, found a significant increase in the adolescent girls knowledge after the provision of the structured education program where 93% adolescent girls indicated that the menstrual blood comes through the vagina compared to 32% at the pretest assessment. All of the girls stated that the menstruation is the main event during puberty at the posttest compared to 77% at the pretest assessment. Moreover, significant increases were observed from 42% to 92% and from 37% to 95% at the posttest assessment in the corrected answers when asked about the main responsible organ for menstruation and about the capability of the girl after menstruation to get pregnancy. Such findings explain the constructive effect of the provided education program.

To determine the influence of a designed health education program on menstrual knowledge and practice, **Aburshaid et al. (2017)** conducted a pretest posttest study on thirty nine secondary school adolescent girls at Al-Khobar City, Saudi Arabia. **Aburshaid and colleagues (2017)** supported the present study conclusion, where they found a significant increase in the knowledge score of the adolescent students after implementing the health education program by 47.37%. Moreover, **Ramathuba (2015)** carried out a descriptive study on a convenience sample of 273 secondary school female students in Limpopo Province, South Africa and revealed unsatisfactory knowledge among those students. **Ramathuba (2015)** encouraged enhancement of adolescent girls' knowledge about menstruation physiology from trusted sources. Specifically, stimulated to start reproductive health education at schools at an early age and should be sustained.

The participants' myths; or misconceptions, about the physiology of menstruation were evaluated pre and post the learning sessions in the present study. All the adolescent girls had mistaken views about most of the evaluated items. All of them reflected that the menstrual blood contains dangerous constituents and believed that they being unclean during the menstrual phase, expressed that menstruation is a disease, and all except one think that it is dangerous to perform physical activity during menstruation. However, after introduction of the learning sessions girls' beliefs were greatly corrected.

Parallel, **Tarhane and Kasulkar (2015)** in a cross sectional study conducted at Nagpur on 100 adolescents; aged 12-18 years. The authors demonstrated that 84% of the girls controlled from going to holy places and 34% restricted performing social activities. In other forms, girls changed their activities during the menstrual phase by avoiding appear in any religious activity, visiting temples, or attending marriages in holy places, did not assist in the household activities, did not sleep on their bed or playing outside their houses (**Kanchan and Prasad 2016**). Possibly due to the different rituals in their communities; the same were practiced by their mothers or other elderly females in the family, due to their ignorance and false perceptions about menstruation.

Believing in the importance of hygiene practices during the menstrual cycle, the Indian Ministry of Health and Family Welfare carried out a scheme for raising awareness of rural adolescent girls on menstrual hygienic practices, rising access to and use of a good quality sanitary pads, and ensuring safe discarding of the pads. The Indian scheme confirmed the urgent need for education on menstrual hygienic practices and suggested affording sufficient sanitary pads to the adolescent girls; in order to encourage hygienic practices. In current study, menstrual hygienic practiced were assessed by asking the participants about the type of the used pads; either disposable sanitary pads or reusable pads, time interval to change the pads either 4-8 hours or whenever soiled, how to wash and dry the reusable pads. In addition, genital cleaning, and daily bathing practices were assessed pre and post the learning sessions.

Concerning type of the used pads, the present study findings showed that before the learning sessions, more than three quarters of the participant girls used disposable pads. This percent was significantly increased after the learning sessions, where most of them tended to use disposable pads. Such findings are consistent with that of **Tarhane and Kasulkar (2015)**, they demonstrated a higher use of sanitary pads over using clothes in managing menstrual blood flow by (58%). Similarly, **Kanchan and Prasad (2016)** found a higher use of sanitary pads (92.2%) compared to using clothes (6.8%); in a previous study conducted on 263 adolescent girls in Hyderabad.

The agreement between the previously described studies' finding may be attributed to many rationales. Particularly, is the greater awareness about importance of using sanitary pads via social media; as sanitary pads are used once and disposed after few hours thus giving least chance of reproductive tract infection. Another rationale is the wide availability of sanitary pads in most pharmacies; in different sizes and characters. On top of both, privacy for changing and washing the reusable clothes is difficult outside house and is complicated; leading the girls tend to use the disposable ones.

Contrary, **Ramathuba (2015)** observed that majority of students used clothes. Inconsistency between both studies findings and the present study may be explained by the different socioeconomic status of the girls; where their parents cannot buy disposable sanitary pads and change it frequently as needed to gain its aim of hygiene. Another issue is that it may be due to the society culture; where mother and grandmother were used to use cotton clothes during menstrual phase, wash, and reuse.

Improper hygienic practices during the period of menstrual blood flow negatively influence the female's health. It was evidenced to encourage change of the sanitary napkins every four hours during the early blood flow days; where the flow is heavier. This act will prevent unpleasant odour and infection, also frequent wash of the genital area during menstruation may reduce risk of cervical cancer (**El-Lassy and Madian 2013**).

Consistent with the present study findings, **Bhudhagaonkar and Shinde (2014)** found a great increase in changing the sanitary pads after the intervention with the health education from 17% were intended to change the disposable sanitary pads every 6 hours at the pretest to 71% at the posttest assessment.

Concerning care of the reused pads, two thirds of the present study participants; of those using reusable pads, were washing the pads with water and soap pre the learning sessions. After the sessions only few girls reuse the pads and were intended to wash with water and soap, properly dry, and discard after 2 to 3 times. This finding reflects the positive effect of the learning sessions.

The present study results agreed with that of **Abd Allah and Alsabagh (2011)** observed a significant increase; from 47.05% to 87.25%, in washing the reused clothes with soap and water between the pretest and the posttest assessment respectively. Regarding drying the reused washed pads, there was a significant increase also on the posttest assessment compared to the pretest one (from 5.9% to 30.4% respectively). Correspondingly, an intervention study aimed to assess the effect of health education program on adolescent girls' knowledge and practices about menstruation among 217 adolescent girls in Mumbai, India **Dipali et al.(2009)**. The authors of such study found a great increase in washing the reused pads with soap and water after providing the health education program about menstrual care practices compared to before the program; from 48.7% to 87.2%. In addition to the increase of drying the reused pads in direct sunlight from 4.3% at the pretest assessment to 31.6% at the posttest assessment.

The present finding is inconsistent with that of adolescent students in an African study (**Ramathuba, 2015**). In that study, students were not able to effectively wash or dry the reused pads; students wash the pads and put in a plastic bags without drying. Absence of exposure to sunlight or even hanging the reused pads or underwear behind other clothes may results in thrush infection.

All of the participants except few considered daily bathing during menstruation as unhealthy practice at the pretest assessment. However, at posttest girls' belief was improved greatly. Such improvement in the students' conception about the importance of daily bathing during the menstrual cycle may be related to the intense of the researcher to stress on that point. Accordingly, the second study hypothesis "Deaf-dumber adolescents; who attend the learning sessions about menstruation, record higher healthy practices at the posttest assessment compared to the pretest assessment" was ensured.

Kapoor and Kumar (2017) in a cross sectional study involved 132 adolescent students in India, 93.18% of the participant girls practiced daily bathing. Also, an Indian study by **Bhudhagaonkar and Shinde (2014)**, was noticed at the pretest assessment that 99% of the studied group were taking regular bath during menstruation. At the posttest assessment 100% of the studied group practiced daily bathing after clarifying the importance of taking daily bath.

Based on the present study findings, introducing learning sessions on menstrual hygienic practices is an effective tool in enhancing the knowledge and practices of adolescent girls. It is not enough to advertise about the different sanitary products via mass media. Rather, it is beneficial to train the mothers; who are the first teacher to their daughters, how to communicate with their girls about menstrual care and correct their menstrual care misconceptions. Besides, it is important to integrate health program in the school's curriculum.

REFERENCES

- [1] **Abd Allah, E. S. A., &Elsabagh, E. M. (2011).** Impact of health education intervention on knowledge and practice about menstruation among female secondary school students in Zagazig city. *The Journal of American Science*, 7, 737-747.
- [2] **Aburshaid, F. A. H., Ahmad, S. G., Ashmauey, A. A., & Mohammad, H. G. (2017).** Effect of Planned Health Educational Program on Menstrual Knowledge and Practices among Adolescent Saudi Girls. *J Nurs Health Stud* Vol.2: No.3: 16.
- [3] **Bayray, A. (2012).** Menstrual perceptions and preparation of rural adolescent female in Tigray, North Ethiopia *Universal Journal of Education and General Studies* 1(1):009-016.
- [4] **Bhudhagaonkar, J., & Shinde, M. (2014).** Impact of Structured Education Regarding Menstrual Hygiene Practices among Adolescent Girls. *International Journal of Science and Research (IJSR)*, 3(5), 244-252.
- [5] **Calderon, R., Greenberg, M. (2011).** Social and emotional development of deaf children: family, school, and program effects. In: Marschark, M., Spencer, P. E., editors. *Oxford Handbook of Deaf studies, Language, and Education*. 2nd ed. Vol.1. New York: Oxford University Press.pp. 188-199.
- [6] **Channawar,K., & Prasad, V. S. V. (2016).** Menstrual Hygiene: Knowledge and Practice among Adolescent School Girls. *Panacea Journal of Medical Sciences*, 6(1), 31-33.
- [7] **El-Lassy, R. B., & Madian, A. A. E. (2013).** Impact of health educational program on menstrual beliefs and practices of adolescent Egyptian girls at secondary technical nursing school. *Life Science Journal*, 10(2), 335-345.
- [8] **Kapoor, G., & Kumar, D. (2017).** Menstrual hygiene: knowledge and practice among adolescent school girls in rural settings. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 6(3), 959-962.
- [9] **Khudair F. (2013).** Assessment the Level of awareness of Female Students toward menstruation in Nursing College Kufa. *Journal for Nursing*, 3(1): 57-62.
- [10] **Morowatisharifabad, M. A., Vaezi, A., &Mohammadinia, N. (2018).** Effective factors on menstrual health among female students in Bam city: a qualitative study. *Electronic physician*, 10(2), 6310.
- [11] **Nemade, D., Anjenaya, S., &Gujar, R. (2009).**Impact of health education on knowledge and practices about menstruation among adolescent school girls of Kalamboli, Navi-Mumbai. *Health PopulPerspect Issues*, 32(4), 167-75.
- [12] **Ramathuba, D. U. (2015).** Menstrual knowledge and practices of female adolescents in Vhembe district, Limpopo Province, South Africa. *Curationis*, 38(1), 1-6.
- [13] **Tarhane, S., & Kasulkar, A. (2015).**Awareness of adolescent girls regarding menstruation and practices during menstrual cycle. *Panacea Journal of Medical Sciences*, 5(1), 29-32.
- [14] **UM, L., Yusuf, M. W., & Musa, A. B. (2010).**Menstruation and menstrual hygiene amongst adolescent school girls in Kano, Northwestern Nigeria. *African journal of reproductive health*, 14(3), 201-207.
- [15] **United Nations Population Division, World Population Prospects. (2012).** Available at <http://esa.un.org/unpd/wpp/index.htm>. Accessed Aug. 21, 2012.
- [16] **Wahba, M., &Fahimi, F. (2012).** The need for reproductive health in schools in Egypt, available at www.prb.org.
- [17] **World Health Organization (WHO). (2011).** World Report on Disability. Malta: World Health Organization, 2011.
- [18] **World Health Organization (WHO). (2013).** Deafness and Hearing loss; Yousafzai A K, Edwards K, D'Allesandro C, Lindström L. (2005). Key facts updated 2013.