

Effect of Health Education Program on Knowledge and Practices about Menstrual Hygiene among Adolescents Girls at Orphanage Home

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Abstract:

Background: Menstruation is a natural phenomenon among matured females who experience shedding of blood for 1-7 days every month from the age of maturity until menopause. On the other hand, hygiene-related practices during menstruation are of considerable importance for reproductive health, poor practices increase vulnerability to reproductive tract Infections.

Aim: The present study aimed to improve level of knowledge and practices about menstrual hygiene among adolescents girls at Orphanage home.

Methodology: Research design: A quasi-experimental design was used to met aim of the study.

Setting: The study was conducted at seven Orphanage homes in Damietta City.

Sample: The total sample was 234 adolescents girls, aged <14 - ≥16 years. They were assigned to either study and control groups. The study data were collected by a structure interview questionnaire sheet in three months.

Results: The study revealed that there were highly statistically significant differences in total knowledge and practice score of the studied sample after implementation of educational program.

Conclusion: The present study concluded that adolescents lacked appropriate knowledge and practices about menstruation in the pre- program phase. After implementation of the program considerable improvements were noticed in adolescents girls' knowledge and practice. Therefore the educational program was successful in attaining its aims of positively changing the knowledge and practice of menstrual hygiene.

Recommendations: Development of in-service training program for health care providers who take care of adolescent girls at orphanage home about issues related to menstruation and reproductive health

Keywords: Menstruation, menses, menarche, adolescent and menstrual hygiene.

I. Introduction:

Adolescence is a significant period in the life of a female. Adolescent girls often lack knowledge regarding reproductive health including menstruation which can be due to socio-cultural barriers in which they grow up (1,2). Menstruation is the normal and physiological process of the discharge of blood from the uterus which is unique to females that begins in adolescence (3,4,5). The first menses is called "Menarche". Menarche is the signal that sexual maturation of the young female has occurred and that the body is capable of supporting pregnancy. With onset of menstruation a girl becomes aware of her emerging identity as a female capable to reproduce. Her understanding and acceptance of her new identity will be greatly influenced by the feedback she receives from peers, educators and most importantly her parents(6,7). Menstruation occurs periodically throughout the child bearing years, except during pregnancy and lactation. The ages of onset of menstruation differ from person to person but seem to be affected by heredity, racial background and nutritional status(8,9). Menstrual flow consists of blood, mucus, and tissue particles. Factors that may alter the menstrual cycle are stress, fatigue, exercises, acute (or) chronic illness, and changes in climate. Menstrual hygiene is the personal hygiene during menstruation. It includes bathing daily for comfort, using clean, dry absorbent material and disposal of used pads/material in clean environmentally acceptable, safe methods and to feel fresh, keep perineal area clean from anterior to posterior, (10,11).

Significance of the study: Majority of adolescent girls usually have lack of scientific knowledge and hygienic practice during menstruation and puberty, also Adolescent girls 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. So, girls should be educated about "menstruation and healthy menstrual

practices" through expanded program of health education in orphanage homes. Data on their level of knowledge and practices are beneficial for planning program for improving their awareness level.

Aims of the study:

The aim of this study was to improve level of knowledge and practices about menstrual hygiene among adolescent girls at orphanage home through:

- 1- Assessing the level of knowledge and practice regarding menstrual hygiene among study sample.
- 2- Planning, implementing and evaluating the effect of health education program about menstrual hygiene among study sample.

Subjects and Methods

Research Design:

A quasi-experimental design was used to meet aim of the study.

Setting:

This study was carried out at seven orphanage homes in Damietta City namely (Fareskour 38 girls, EL-Zarqa 26 girls, Kafr Sad 40 girls, Damietta 52 girls, EL-Sru 30 girls, Ras El Bar 32 girls and New Damietta 16 girls).

Sample:

The subjects consisted of all adolescents girls in the aforementioned orphanage homes in Damietta City. The total sample was 234 girl, aged <14 - ≥16 years. They were assigned to either study and control groups in each home previously mentioned. The subjects were divided randomly into 2 groups: 117 adolescents girls as study group who were received the educational program and the other 117 adolescents girls as control group who didn't received any program.

Tools of Data Collection:

Data was collected by three tools, these tools were developed by the researchers based on the review of related literature.

Tool I – A Structured Interview questionnaire Sheet: This tool divided into 2 parts; **part (1):** related to socio-demographical data of the studied sample, including age, birth order and residence. **Part (2):** related to history of menstruation including; age of menarche, regularity of menses, abnormality, density, duration and interval of each menses. **Tool II – Adolescent's knowledge about menses** such as culture, girls experience, definition, causes, manifestations, factors effect of menses, treatment and complications. **Tool III – Self care practices** including water sanitation, hygienic care (Perineal hygiene, underwear, methods of cleaning, shaving the hair in genital area, diet, food restrictions, exercise and treatment). Also, type of pads used, number of pads per day, wash clothes of menses, waste disposal of pad and methods of drying.

Health Educational Program:

An educational intervention program was developed in a simple Arabic language.

The aim of the program:

The program aimed to improve level of knowledge and practices about menstrual hygiene among adolescent girls at orphanage home. An educational program to study group included: knowledge about menstruation as; definition, causes, clinical manifestations, complications and treatment. Also the practices related to self care of menstruation as; diet, drink, exercise, perineal care, hygienic care, types of pads, waste disposal of pad, wash of clothes and methods of drying of clothes.

Field work:

The study was conducted through four phases: Pre-planning, planning, implementation, and evaluation. **Phase I (Pre-planning):** before starting-up program design the study tools and were applied it to assess adolescent girls knowledge and practices about menstrual hygiene. **Phase II (program planning):** the program was developed based on the identified needs and demands of adolescent girls. **Phase III (program implementation):** An educational program was implemented to study group of adolescent girls in each home. Each group obtained 2 sessions, each session took about one hour. Each group was attended according to their available times and place, which commonly in the morning between 10.00 AM until 12.00 AM. 1st session included pretest and information about definition, causes, signs and symptoms, complications and treatment of menstruation, 2nd session included practices regarding diet, exercise and personal hygiene and perineal care. At the end of each session the researchers ensured the adolescents understanding of the

instructions. The program was presented in clear and concise form and focused on the point of learning using different teaching methods, as illustrative lecture, group discussion, role playing, demonstration, and re-demonstration were used. Also different audio visual materials were used as pamphlets, hand out, pictures, and posters to facilitate the teaching of each topic. After program Implementation a post-test was done immediately to measure its effect on the knowledge and practices about menstrual hygiene among study sample.

II. Method:

The questionnaire sheet was developed by the researchers after reviewing the related literature. Tools were tested for content validity by 3 experts in the field and they were structured interview questionnaire sheet. A pilot study was carried out on 10 % of the adolescents, to test the feasibility of different and help in time planning. Necessary modifications were done. They were excluded from the subjects of the study. Oral consent from each adolescent girl of both the study and control groups was obtained for their participation in the study after explaining the aim of the study and assured that all the collected data were confidential and will be used only for the purpose of the study. Each adolescent was individually interviewed to assess her knowledge and practices about menstruation educational program was developed based on the adolescents' assessment. The interview lasted for an average of 15 minutes. The data were collected from orphanage home, started from the 1st October 2012 and extended to 30 March 2013. This period consumed for data collection was governed by the availability time for both the researchers and the study respondents.

Statistical design

The collected data in pretest and post test were organized, categorized, tabulated according to the type of each data

Statistical analysis:

The Statistical Package for the Social Sciences (SPSS, version 17.0) was used for data analysis. Descriptive statistics were employed to summarize the demographic data, which was presented using frequency tables and expressed as percentages, mean and standard deviation. Chi-square test was used to test the associations among the under studied qualitative variables. Statistical significance was considered at P-value < 0.05 and highly significance at P-value < 0.001.

Scoring system:

Scores were used to evaluate participant's knowledge of hygienic and healthy practices during menstruation. Questions were scored as followed 1 marks for correct answer and 0 marks for wrong or no answer. The total score of each aspect equal 60% or more than → adequate or satisfactory knowledge and practice) The total of each aspect less than 60% → inadequate or unsatisfactory knowledge and practice.

III. Results:

Table (1) Shows the demographic characteristics among study and control groups. Regarding age, it can be seen that the higher percentage (41.9% , 34.2.1%) respectively their age ranged from <14 to ≥16years. As regarding the older birth , the table shows that slightly more than half (50.4% , 41.9%) respectively among study and control groups between 2-5+. The two groups were almost equally distributed of residence in rural.

Table (2) Illustrates Comparison between the study and control groups according to Menstrual pattern , it was noticed that there was no statistically significant changes could be detected after program implementation in either of the two groups, $p>0.05$ regardless the age of menarche, regular of menses, abnormal density of menses, duration and interval of each of menses.

Table (3) Show that there was a highly statistically significant for improvement in knowledge about definition of menses, dysmenorrheal, poly-menorrhea, time of ovulation, signs and symptoms before or during menses, causes of pain or discomfort, factors effecting of menses, methods of treatment and complications when compared to values before program. Data shows also statistically significant differences within the study and control group.

Table (4) It can clearly be seen that, there was a highly significance difference in all items related to comprehensive care for menses , table reflect good prognosis of acquired prevented practice care in pre educational program comparing to post program of the study group.

The changes in practical knowledge observed after program implementation are illustrated in **table (5)** shows that there were statistically significant differences in the implementation group before and after the program of study group with p -value <0.001 , but not in the control group, $p >0.05$ regarding practical knowledge in all items.

Figure (1) Illustrate the distribution of the study group according to their sources of information it was found that they get information about menstrual hygiene primarily from their friends, relatives and health team at home as reported by (25.6%, 15.5% & 9.5%) of them respectively. On other hand the control group it was found that their friends, relatives and health team at home as reported by (23.1%, 15.5% & 9.5% %) of them respectively. Therefore undoubtedly poverty and play a major role on the choices of absorbents leading to the use of unsanitary materials. It is likely that a poor financial resource has contributed to the use of 'multiple material' as menstrual absorbents.

IV. Discussion:

The aim of the present was to improve level of knowledge and practices about menstrual hygiene among adolescent girls at orphanage home in Damietta. Adolescence is a time of enormous physical and hormonal change for a young girl although organic gynecological pathologies are rare in this period, menstrual disorders may be seen commonly, and may cause further problems for the adolescents and their parents. The two groups were randomly selected and compared as regards the demographic data such as age, older birth and residence. The age of menarche is determined by general health, genetic factors, socioeconomic and nutritional status. From the present study findings, more than half of the study sample, in the study group that their age at menarche ranged from 9 to 12 years and the girls were well prepared and aware about menarche. These findings supported by (12,13, 14) who mentioned that mostly sixty seven percent of the girls were well prepared and aware about menarche. Also, Supportive evidence by (6,15) reported that the mean age at menarche among Egyptian female adolescents was 12.87 ± 1.29 years. In a study in Mansoura, Egypt 2004, the mean age at menarche was 12.9 years. While in Alexandria 2004, the mean age was 11.91 ± 0.93 years. In a study Jordanian girls 2004 among the mean age was 13.8 years. This difference could be attributed to the influence of both heredity and socioeconomic conditions especially nutrition (6, 17, 18,19). The present study showed that two thirds of the study and more one third of the rural and urban participants respectively had awareness about menstruation prior to menarche after the program. Similarly, a qualitative study carried out in rural Kenya showed that shame were the feelings of girls associated with menstruation (20,21).

As regards the main source of information, the findings of the present study have shown that the girls had a fairly good understanding on the topic of menstruation the girls reported friends and relatives identified they were the source of information and whom they discussed menstruation issues with. Information was often shared before menarche or after they had started their periods. This may be attributed to lack of friend's time to give girls a good model of practices which affect her behavior. Maximum number of the girls had previous knowledge regarding menstrual hygiene and the major source of their information was health personnel in the study conducted by (22, 23,24) mention that the health personnel were the majority main source of information this portrayed that relatives, teachers,etc are not sufficiently providing the knowledge regarding menstrual hygiene to the girls. Thus, there is the need to educate the relatives and teachers regarding menstrual hygiene and motivate them to educate the adolescent girls. (8, 25).

Students knowledge about definition such as menstruation was similar in its deficiency among the two groups before the implementation of the program. This deficiency Signs and symptoms before or during menses This finding is supported by the study conducted by (26, 27,28) which depicted that less one third of the girls had good knowledge about menstrual hygiene, more than half had fair knowledge and of them had poor knowledge on menstrual hygiene mean was 21.67. Dysmenorrhea which manifested as abdominal pain, back pain and headaches, was the most common medical problem among the girls in this study. A similar finding was observed by (29,30,31) who indicated that the study on knowledge assessment regarding puberty and menstruation among adolescent school girls in Varanasi district, India. Again by (32, 33,34) observed a poor perception and behavior towards the use of sanitary pads during menstruation among adolescent school going girls which is similar to the result of this study, as they noted that lack of finance was responsible for non-usage of sanitary pads and hence the use of ether absorbent such as clothes. This was consistent with other studies carried out among the same population in developing countries (35,36,37,38). Girls said that the pain was unbearable and they could not even concentrate in class. Majority of the girls reported that they did not use any pain killers due to the cost of modern medicine and if they did, some used traditional healers. The participants mentioned that they mostly purchased the sanitary pads when they had money, or when the mother was financially able to

purchase them, otherwise pieces of cloth were used. One participant shared that her sister bought them for her, but wanted her to use them only when she was going to special places.

V. Conclusion

In the light of the study findings, it can be concluded that adolescent's girls lacked appropriate knowledge about menstruation and menstrual hygiene in the pre-program phase. Also adolescents' lifestyle practices were mostly inadequate as regards exercise, sleeping, diet, drinks, medication, pain management, personal hygiene and washing of clothes. After implementation of the program considerable improvements were noticed in adolescents knowledge and practice. Therefore the educational program was successful in attaining its aims of positively changing the knowledge and practice of menstruation.

VI. Recommendation

The findings from this study made the researchers to make the following recommendation:
- It is important to educate adolescents about issues related to menstruation, so that they can safeguard themselves against various infections and diseases. Further, emphasis also needs to be given through workshops, school classes and seminars on "Adolescent Reproductive Health".

-Development of in-service training programs for health care providers who take care of adolescent girls at orphanage home about issues related to menstruation and reproductive health.

-Any Maternal and Child Health Centers(MCH) or health setting should provide health teaching for adolescent Community campaigns using various educational media are essential to increase knowledge and awareness about menstruation among all girls or adolescents in orders to identify the menstruation and the self care practices or appropriate management.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Reda El-Mowafy conceived the study idea, designed the review methodology, conducted the critical appraisal of the studies and drafted the manuscript. **Maha Moussa** collect data, wrote the first draft of the manuscript, revision of the manuscript for important intellectual content and approved the submitted draft. **Hanan El-Ezaby** designed the program Analysis and interpretation of data critical, The final version of the manuscript was critically reviewed by all authors read and approved the final manuscript.

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Table (1): Distribution of female in the study and control groups according to demographic data

	Study group(n=117)		Control group(n=117)		Total (n=234)	
	No.	%	No.	%	No.	%
Age(years)						
<14	49	41.9	38	32.5	87	37.2
14-	40	34.2	39	33.3	79	33.8
≥16	28	23.9	40	34.2	68	29.1
Birth order:-						
1 st	19	16.2	23	19.7	42	17.9
2-4	59	50.4	45	38.5	104	44.4
5+	39	33.3	49	41.9	88	37.6
Residence :-						
Urban	41	35	38	32.5	79	33.8
Rural	76	65	79	67.5	155	66.2

Table (2): Comparison between the study and control groups according to Menstrual pattern

	Study group		Control group		P
	No.	%	No.	%	
Age of menarche:-					
< 9	23	19.7	18	15.4	>0.05
12	79	67.5	89	76.1	
15+	15	12.8	10	8.5	
Regular of menses					
Yes	32	27.4	31	26.5	>0.05
No	85	72.6	86	73.5	
Abnormal density of menses:					
Yes	44	37.6	43	36.8	>0.05
No	73	62.4	74	63.2	
Duration of menses :					
<3 day	18	15.4	17	14.5	>0.05
3-6 day	82	70.1	84	71.8	
≥7 day	17	14.5	16	13.7	
Interval of each menses:					
<21 day	17	14.5	12	10.3	0.408
21 day	85	72.6	92	78.6	
≥28 day	15	12.8	13	11.1	

p: p value for comparing between pre and post program

*: Statistically significant at $p \leq 0.05$

Table (3): Distribution of female in the study and control groups according to the knowledge about menses

Items	Study group				P-value	Control group				P-Value
	Pre program		Post program			Pre program		Post program		
	No.	%	No.	%		No.	%	No.	%	
Definition of menses	16	13.7	112	95.7	<0.001*	12	10.3	15	12.8	>0.05
Definition of dysmenorrheal	18	15.4	111	94.9	<0.001*	10	8.5	21	17.9	>0.05
Definition of menstrual disorder	18	15.4	109	93.2	<0.001*	19	16.2	29	24.8	>0.05
Time of ovulation	12	10.3	105	89.7	<0.001*	20	17.1	22	18.8	>0.05
Signs and symptoms before or during menses	15	12.8	107	91.5	<0.001*	22	18.8	25	21.4	>0.05
Causes of increase bleeding	17	14.5	108	92.3	<0.001*	32	27.4	35	29.9	>0.05
Causes of pain or discomfort	20	17.1	112	95.7	<0.001*	18	15.4	21	17.9	>0.05
Factors effecting of menses	17	14.5	115	98.3	<0.001*	17	14.5	22	18.8	>0.05
Methods of treatment	19	16.2	110	94	<0.001*	21	17.9	25	21.4	>0.05
Complications	14	12	114	97.4	<0.001*	12	10.3	20	17.1	>0.05

p: p value for comparing between pre and post program

*: Statistically significant at $p \leq 0.05$

Table (4): Self care practices during menstruation in study and control groups

Items	Study group				P-value	Control group				P-Value
	Pre program		Post program			Post program		Pre program		
	No.	%	No.	%		No.	%	No.	%	
Perineal hygiene	17	14.5	117	100	<0.001*	29	24.8	33	28.2	>0.05
Underwear & methods of cleaning	22	18.8	116	99.1	<0.001*	29	24.8	30	25.6	>0.05
Methods of shaving the hair in genital area	29	24.8	115	98.3	<0.001*	22	18.8	22	18.8	>0.05
Frequency of change	33	28.2	114	97.4	<0.001*	28	23.9	30	25.6	>0.05
Exercise during menses	12	10.3	111	94.9	<0.001*	18	15.4	20	17.1	>0.05
Herbal use / Traditional methods	15	12.8	110	94	<0.001*	14	12	16	13.7	>0.05
Fluid intake	22	18.8	109	93.2	<0.001*	25	21.4	28	23.9	>0.05

Food intake	10	8.5	107	91.5	<0.001*	15	12.8	18	15.4	>0.05
Medication	66	56.4	4	3.4	<0.001*	69	59	69	59	>0.05
Absenteeism / and stay of home during menses	99	84.6	12	10.3	<0.001*	100	85.5	100	85.5	>0.05

p: p value for comparing between pre and post program

*: Statistically significant at $p \leq 0.05$

Table (5) cont. Distribution of female in the study and control groups according to the self care practices of menses

Items	Study group (n=117)				p. value	Control group (n=117)				p-value
	Pre-program		Post program			Pre-program		Post program		
	No	%	No	%		No	%	No	%	
Type of pads used:-										
Piece of old clothes	72	61.5	2	1.7	<0.001*	71	60.7	73	62.4	>0.05
Piece of new clothes	23	19.7	115	98.3		3	2.6	4	3.4	
Piece of cotton	36	30.8	1	0.9		32	27.4	34	29.1	
Sanitary pad	66	56.4	116	99.1		49	41.9	49	41.9	
Number of pads per day										
Single per day	17	14.5	0	0	<0.001*	51	43.9	49	41.9	>0.05
Twice per day	77	65.8	1	0.9		40	34.2	42	35.9	
Three per day	20	17.1	2	1.7		21	17.9	21	17.9	
Four or more per day	3	2.6	114	97.4		5	4.3	5	4.3	
Wash clothes of menses:										
With another of clothes	56	47.9	1	0.9	<0.001*	55	47	54	46.2	>0.05
Wash clothes alone	61	52.1	116	99.1		62	53	63	53.8	
Washing clothes:-										
Pond water with soap	33	28.2	5	4.3	<0.001*	32	27.4	33	28.2	>0.05
Pond water only	22	18.8	1	0.9		19	16.2	20	17.1	
Tap water with soap	22	18.8	101	86.3		20	17.1	22	18.8	
Tap water only	17	14.5	2	1.7		18	15.4	20	17.1	
Tap water with antiseptic	33	28.2	115	98.3		32	27.4	34	29.1	
Waste dispose of pad										
Throw it routine waste	17	14.5	114	97.4	<0.001*	20	17.1	21	17.9	>0.05
Throw on road side /garden	20	17.1	0	0		18	15.4	19	16.2	
Burn it or landfill	21	17.9	1	0.9		17	14.5	17	14.5	
Reply to used after boiling	17	14.5	1	0.9		33	28.2	31	26.5	
House dust bin	40	34.2	1	0.9		29	24.8	29	24.8	
Methods of drying										
Expose to the sun	66	56.4	116	99.1	<0.001*	64	54.7	64	54.7	>0.05
Artificial dry	51	43.6	1	0.9		53	45.3	53	45.3	

p: p value for comparing between pre and post program

*: Statistically significant at $p \leq 0.05$

Figure (1) Distribution of the study and control groups according to sources of information

