

## Effect of Menstrual Educational Intervention on performance of Institutionalized Adolescent Girls in El Behiera Governorate

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### Abstract

The reaction of adolescence girls towards menstruation depends on their knowledge of this phenomenon as a normal physiological process and the essential hygienic practices associated with it. **Aim of the present study** was to estimate the effect of menstrual educational intervention on performance of institutionalized adolescent girls in El Behiera Governorate. **Method** A quasi-experimental design was used. A sample of 76 adolescence girls included in the study and data were collected by administering the self-administered questionnaire. **Results:** The findings revealed that the mean knowledge score of studied girls was increased significantly from (32.99±12.51) before implementation of the intervention to (95.68 ±4.82) after intervention (t=18.367,p<0.001) and the mean practice score was increased significantly from (55.46 ±8.72) before the intervention to (77.88±7.32) after it (t=45.811,p<0.001). **Conclusion and Recommendations:** Menstrual education intervention had positive effect on performance of institutionalized adolescent girls. Therefore, it is recommended to implement educational intervention about menstruation through workshops either at governmental and non-governmental residential institutions for care of children deprived from family care.

**Key words:** *Adolescence, Menstruation, Performance, Educational Intervention & Residential Institutions.*

### Introduction

Adolescence is the period of transition from childhood to adulthood. The World Health Organization (WHO) defined adolescence as the age group of 10-19 years (Alosaimi, 2014). During this stage, adolescents experience a change in their physical, psychological and social aspects of life. Adolescence in girls has been recognized as a unique period which signifies the transition from girlhood to womanhood. This transition is marked by a unique phenomenon called menarche. Menarche is the onset of menstruation and it is usually followed by a period of adolescent sterility until menstruation begins to occur at regular intervals (Curtis, 2015), (Olabanjo et al., 2012).

Moreover, Menarche, is a landmark feature of female puberty and signals reproductive maturity. It occurs between 11 and 15 years with a mean age of 13 years (Adinma 2008) Menstruation is the periodic vaginal bleeding that occurs with shedding of the uterine mucosa under the control of hormones. Menstruation is a natural phenomenon that occurs throughout the reproductive years of every woman. Most females experience some degree of pain and discomfort during their menstrual periods as cramping sensation in the lower abdomen which may be accompanied by headache. This could have significant impacts on their daily activities and disturb their productivity at home, work place or absence from school (Ilo et al., 2016), (Farotimi et al., 2015)

The onset of menarche introduces a new dimension of life. To cope with it, competent advice is essential in these habit-forming years. This can correct misconception and lead to proper health care. Adolescent girls in their teenage have many questions and many uncertainties regarding their physical maturation, mothers are the major source of information. In many cases, knowledge about menstruation and related issues as menstrual hygiene is insufficient, resulting from lack of information and education in the family. That might lead the adolescent girls to get information from improper sources e.g. peers (Farotimi et al., 2015), (El-Lassy & Madian, 2013)

The issue of menstrual hygiene is inadequately acknowledged and has not received proper attention. Use of sanitary pads and washing the genital area are essential practices to keep the menstrual hygiene. Unhygienic menstrual practices can affect the health of the girls and there is an increased vulnerability to reproductive tract infections and pelvic inflammatory diseases and other complications (Davis et al, 2018), (Agarwal et al., 2017), (Upashe et al., 2015), (Bhore & Kumbhar, 2014), (UM et al., 2010) & (Aniebue, 2009)

Puberty is considered as a sensitive issue in our community. Therefore, culture of silence surrounds the topic of menstruation and related issues make adolescent girls, who deprived from family care for any cause face a lot of challenges relating to puberty and mastery of reproductive life issues. Such

challenges may diminish their opportunities for successful educational and psychosocial health during this period of growth. It is assumed that better outcome of adolescent health can be achieved by increasing their awareness on puberty related issues. That could pave the way for safe healthy motherhood practices. (El-Mowafy et al., 2014), (Eswi et al., 2012) & (Helal & Elarousy, 2011). It has been rightly observed that women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to reproductive tract infections and its consequences (Aburshaid et al.2017) and (Pal et al.2017).

Therefore, The Aim Of This Study was to estimate the effect of menstrual education intervention on performance of institutionalized adolescent girls in El Behiera Governorate

### Significance of the study

Majority of the girls actually have lack scientific knowledge about menstruation and puberty. Poor menstrual performance may affect their health and cause many complications as reproductive tract infections. So, young girls especially institutionalized girls who were deprived from family care should be aware of healthy menstrual performance through expanded educational intervention in such institutions. There is a limited research examining the performance of El- Behiera Governorate institutionalized adolescent girls. Therefore objective of the present study is to assess the effect of menstrual educational intervention on performance of adolescent girls at governmental and non-governmental residential institutions for care of children deprived from family care

### Aim of the study

was to estimate the effect of menstrual educational intervention on performance of institutionalized adolescent girls in El Behiera Governorate.

### Materials & Method

**Study design:** A quasi-experimental pre/post-test design was adopted to carry out this study.

**Study setting:** This study was carried out in 5 governmental and non-governmental residential institutions for care of children deprived from family care affiliated to the Ministry of Solidarity and Social Justice in El-Beheira governorate namely: "Tahseen Elseha", "El-Abaadia", "El-Hanan", "El-Waldine El-Khairia", and "Elsayed El-Azraa" female institutions.

These institutions provide care for children grew up in a harsh social condition that prevent them from the care of their natural families, because of orphan hood or cracked family or family inability to provide

proper care. (The manageress of these institutions asked the researchers to improve girl's menstrual hygienic performance).

### Subjects

Inclusion into the study was entirely on a voluntary basis and girls who agreed to participate in the study were reassured that all information obtained are confidential and secure. All adolescent residents' girls in the previously mentioned residential institutions who had attained menarche and free from any mental disabilities were included in the study. They were (n=76) girls out of 86 girls the other 10 girls were for pilot study, as illustrated in the following table: -

**Table I: Distribution of studied girls in residential institutions.**

Name of institution	Girls' age
	10-18 years
1. Tahsen Elseha	11
2. El-Abaadia female institution	14
3. El-Hanan	23
4. El-Waldine El-Khairia	17
5. Elsayeda El-Azraa	21
<b>Total</b>	<b>86</b>

**Tool for data collection:** The self-administered questionnaire was developed by the researchers after reviewing recent literature (Alosaimi, 2014), (Olabanjo et al., 2012) & (Curtis, 2015) in order to collect required data. It was included the following parts:

#### Part I: participants' personal data

A. **Demographic characteristics of institutionalized girls:** as age, school grade.

B. **Menstrual history:** as preparation for the occurrence, age of menarche, frequency, intervals and regulation.

**Sources of information about menstrual hygiene.**

#### Part II: participants' knowledge about menses and its hygiene:

As what is menstruation, signs and symptoms associated with menstruation and age of menarche.

**Scoring system** for assessing the participant's knowledge regarding menstruation; this section contains of six items and the correct answers were pre-determined according to the literature. A score of (2) was given to the correct complete answer, a score of (1) for correct but incomplete answer and a score of (0) for the wrong or missed answers. The total knowledge score was ranged as (0-12). And classified into Percent;

❖ Good level of knowledge  $\geq 75\%$   $\rightarrow$   $\geq 9$  points

❖ Fair level of knowledge 50 - < 75 % → " 7- < 9" points

❖ Poor level of knowledge < 50 % → " < 7" points

**Part III: It includes items about girls' menstrual hygienic practices** No. of pads changed per day, types of pads, pads wrap used for disposing, ways to get rid of sanitary pads, panty changed /day, washing panty, cleansing genitalia with soap and water whenever change the pad, girl's act/ behave in first day of menstrual.

**Scoring system** for assessing the participant's practices regarding menstruation;

This section of the questionnaire consists of 12 items estimating girls' practices of menstrual hygiene. A score of (2) was given to good hygienic practice, a score of (1) was given to fair practices and a score of (0) was given to poor practice.

The total practice score was ranged from (0-24 points), and classified into;

Good  $\geq 80\%$  → " $\geq 19$ " points.

Fair 60 - < 80 % → "14 - < 19" points.

Poor < 60 % → "< 14" points.

### Development of the menstrual educational intervention

#### 1-Preparatory phase

Preparation and organization of menstrual educational intervention's sessions:

**Preparation of sessions:** menstrual educational intervention's sessions were prepared by the researcher for the girls. The content of the sessions was based on review of literature, results of assessment as well as characteristics of participants and their needs.

#### The aims of the sessions are to

- Help girls to acquire knowledge regarding menstruation which is positively correlated with health-promoting behaviors.
- Improve girl's practices in relation to menstrual hygiene.

#### Educational intervention strategies,

**A. educational intervention methods:** Different methods of instructions were adopted as brain storming, group discussion, case study and role play.

**B- Teaching aids:** Different aids were used to facilitate and illustrate teaching such as booklet, posters, and handouts.

#### 2- Implementation phase

This phase included the implementation of the planned menstrual **educational intervention**. all adolescent residents' girls in the previously mentioned residential institutions and only girls who had attained menarche, they were divided into small groups (6 groups) based on the needs and problems of each girl. Therefore, menstrual **educational intervention** was implemented through two sessions for each group. Each session lasted approximately 60 minutes.

Firstly, discussion of the session objectives and content were dedicated. Then, time was available for girl's participation and interaction. Different methods of instructions and teaching aids mentioned before were used. Sessions includes discussing girls about knowledge regarding menses as definition, age of menarche, circulation of menses, duration and complains associated with menses, reasons of pain and abnormal menstruation, Also includes discussing practices regarding diet, physical exercise and hygienic practices during menses, usage of sanitary pads and its safe disposal, frequency of change, perineal hygiene, underwear and methods of cleansing, pain relievers, using drugs, when to contact physician, healthy practice to manage pain and correction of misconceptions about menses to empower girls to make informed decisions about how can they manage their menstruation. Implementation of the educational intervention over a period of three months from April 2018 till June 2018.

**3- Evaluation phase:** Reassessment was done three months after completion the educational intervention for participant girls' groups to determine the impact of menstrual education intervention on performance of institutionalized adolescent girls. Evaluation of the program was conducted until June 2018.

### Method

#### I- Administrative process.

1. Official letters from Faculty of Nursing, University of Damanshour were directed to the directorate of Social Solidarity in El-Beheira Governorate to inform them about the study objectives and to seek their permission to conduct the study in the previous settings affiliated to this directorate.
2. Meeting was held with the Deputy Minister of Social Solidarity and the directorate agent of social solidarity in El-Beheira governorate to inform them about the study objectives and to take their permission to conduct the study in the previous settings.
3. Approval letters were directed from directorate of social solidarity in El-Beheira Governorate to the directors of selected institutions via the researchers.
4. Meetings were held with the directors of the selected institutions to explain the aim of the study, set the date and time of data collection, assure them that collected data will be used only for the study purpose, and to gain their approval and cooperation during data collection.

#### II- Development of study tool

- Tool for data collection was developed by the researchers after reviewing recent literature in order to collect required data and was

administered to the institutionalized girls to study their existing level of performance regarding menstruation

### III-Tools Validity and Reliability

The content validity of the tool was tested through a jury consists of five professors who had expertise in the field and then they were modified accordingly. The internal consistency reliability of the tool was confirmed using Cronbach Alpha Coefficient. The results were statistically acceptable for the tool part II =0.83), and (part III=0.88)

### IV-Pilot study

The Pilot study was carried out on a sample of 10 institutionalized girls, they were selected randomly from two institutions namely El-waldine El-khairia and El-hanan, and they were excluded from the study sample.

### V-Data collection

- The data were collected individually from the girls in their institutions after a brief explanation of the purpose and the nature of the research. The girls were asked for an oral consent for participation in the study.
- A self-administrated questionnaire was used as a tool for data collection.
- At the beginning of the interview with each girl the researchers introduced themselves, clarify the purpose of interview, and ensure the anonymity and confidentiality of the collected data.
- Menstrual educational intervention was designed based on relevant literature and participant's needs.
- Finally, participants were assessed to determine the effect of menstrual educational intervention on their performance. Posttest performed 3 months after the intervention.

- Data collection: Data were collected during the academic years from February 2018 to July 2018.

### VI-Statistical analysis:

- After data collection, the collected data was coded and transferred into especially designed format to be suitable for computer feeding.
- Data was entered into and analyzed using the statistical package of social science (SPSS) version 20.
- The level of significance selected for this study was  $p \leq 0.05$ .
- Paired t-test was used to compare between sample means for quantitative data with normal distribution (pre-post).
- Correlation coefficient (rs) was used to test correlation between two quantitative variables not normally distributed.

### VII-Ethical considerations:

- Permission was obtained to collect the data from the previous settings.
- Written informed consent obtained from the director of each institution included in the study after explanation of the aim of the study and assure them that collected data will be used only for the study purpose.
- Each director of residential institutions informed about the date and the time of data collection. Confidentiality and anonymity of individual response was guaranteed through using a code numbers instead of names.

## Results

Table (1): Distribution of the participants according to demographic data (n = 76)

Demographic data	No.	%
<b>Age /year</b>		
Min. – Max.		12.0 – 17.0
Mean $\pm$ SD.		13.59 $\pm$ 1.52
<b>Educational grade</b>		
Fifth primary	1	1.3
Sixth primary	22	28.9
First preparatory	19	25.0
second preparatory	13	17.1
Third preparatory	10	13.2
First secondary	7	9.2
Second secondary	4	5.3

Table (2): Distribution of the participants according to their menstrual history (n = 76).

History of menstruation	No.	%
<b>Age of menarche</b>		
11	14	18.4
12	44	57.9
13	18	23.7
Min. – Max.	11.0 – 13.0	
Mean ± SD.	12.05 ± 0.65	
<b>preparation for the occurrence of menarche</b>		
No	55	72.4
Yes	21	27.6
<b>Sources of information about preparation for the occurrence of menarche N=21</b>		
Friends	8	38.2
Institution physician/nurse	3	14.3
Social worker	8	38.0
Teacher	2	9.5
<b>Regularity of menstruation</b>		
Yes	54	71.1
No	22	28.9
<b>Intervals between each menstruation</b>		
< 21 days	14	18.4
≥ 21 days	62	81.6
<b>Duration of menstruation</b>		
<3 days	16	21.1
3 – 6 days	51	67.1
≥7 days	9	11.8

Table (3): Effect of educational intervention about menstruation on total knowledge score of studied girls.

Knowledge regarding the menstruation	Pre intervention (n = 76)		Post intervention (n = 76)		t	p
	No.	%	No.	%		
Poor < 50 %	63	82.9	0	0.0	18.367*	<0.001*
Fair 50 - < 75 %	13	17.1	0	0.0		
Good ≥ 75 %	0	0.0	76	100.0		
<b>Total sum score</b>						
Min. – Max.	1.0 – 8.0		12.0 – 14.0			
Mean ± SD.	4.62 ± 1.75		13.39 ± 0.67			
<b>percent score</b>						
Min. – Max.	7.14 – 57.14		85.71 – 100.0			
Mean ± SD.	32.99 ± 12.51		95.68 ± 4.82			

t: Paired t-test

p: p value for comparing between pre and post program

\*: Statistically significant at  $p \leq 0.05$

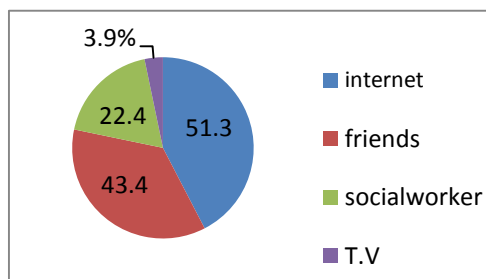


Fig 1 Distribution of the studied girls according to their source of knowledge about menstrual hygiene

Table (4): Effect of menstrual educational intervention on menstrual practices of studied girls (n = 76)

Practice regarding the menstruation	Pre intervention (n = 76)		post intervention (n = 76)	
	No.	%	No.	%
<b>No. of pads changed per day</b>				
Twice/day	69	90.8	6	7.9
Three times/day	5	6.6	44	57.9
Four times/day	2	2.6	26	34.2
<b>Types of pads</b>				
Sanitary pads	76	100.0	76	100.0
<b>Pads wrap used for disposing</b>				
Paper	6	7.9	23	30.3
Plastic bag	23	30.3	53	69.7
Not wrap	47	61.8	0	0.0
<b>Way to get rid of sanitary pads</b>				
Latrines	18	23.7	0	100.0
Dustbin	58	76.3	76	100.0
<b>Panty changed /day</b>				
Once/day	44	57.9	5	6.6
twice/day	27	35.5	40	52.6
≥Three times/day	5	6.6	31	40.8
<b>Washing panty</b>				
Alone	9	11.8	76	100.0
With other clothes	67	88.2	0	0.0
<b>Wash genitalia with soap and water whenever change the pad</b>				
Yes	3	3.9	76	100.0
No	73	96.1	0.0	0.0
<b>girl's act/behave in first day of menstrual</b>				
Stay at orphanage	46	60.5	25	32.9
Go to school	30	39.5	51	67.1
<b>Taking medication during menses</b>				
Yes	44	57.9	27	35.5
No	32	42.1	49	64.5
<b>Drinking warm fluids during menses</b>				
Yes	17	22.4	76	100.0
No	59	77.6	0	0.0

**Table (5): Effect of educational intervention about menstruation on total practices score of the studied girls**

Practices regarding the menstruation	Pre-intervention (n = 76)		3months Post intervention (n = 76)		t	p
	No.	%	No.	%		
Poor < 60 %	44	57.9	0	0.0	45.811*	<0.001*
Fair 60 - < 80 %	32	42.1	37	48.7		
Good ≥ 80 %	0	0.0	39	51.3		
<b>Total sum score</b>						
Min. – Max.	8.0 – 15.0		10.0 – 14.0			
Mean ± SD.	11.09 ± 1.74		12.46 ± 1.17			
<b>Percent score</b>						
Min. – Max.	40.0 – 75.0		62.50 – 87.50			
Mean ± SD.	55.46 ± 8.72		77.88 ± 7.32			

t: Paired t-test

p: p value for comparing between pre and post program

\*: Statistically significant at  $p \leq 0.05$

**Table (6): Correlation between studied girls' knowledge and practices regarding menstruation in pre and post intervention phase.**

Items		Knowledge regarding menstruation	
		Pre intervention	Post intervention
Practice regarding menstruation	r	0.007	0.425*
	p	0.950	<0.001*

r: Pearson coefficient

\*: Statistically significant at  $p \leq 0.05$

Seventy-six adolescent girls participated in the current study. Their age ranged from 12 to 17 years with the mean age of  $13.59 \pm 1.52$ , less than one third (28.9%) of the participants were in sixth primary school and one quarter (25%) of them were in first preparatory school as presented in **Table (1)**.

**Table (2):** Reveals that, the participants' mean age of menarche was  $12.05 \pm 0.65$  years and 72.4% of them reported that they were not aware about occurrence of menarche. More than one third of them (38.2%) reported about occurrence of menarche by their friends followed by social worker (38.0%). With respect to their menstrual regularity, around three quarters of them had regular menstruation. Regarding their menstrual intervals, 81.6% of them was  $\geq 21$  days and 18.4% for those girls stated less than 21 days. More than two thirds stated that the duration of menstrual flow was from 3-6 days, while less than one fourth (21.1%) of them mentioned < 3 days, and only 11.8% of girls mentioned that it was  $\geq 7$  days.

**Table (3):** Illustrates that mean knowledge scores of studied girls was increased significantly from ( $32.99 \pm 12.51$ ), before implementation of the program to ( $95.68 \pm 4.82$ ) after 3 months of the program. The difference between end program evaluation and at 3 months evaluation was highly statistically significant ( $t=18.367$ ,  $p<0.001$ ).

**Figure (1):** Shows that girls obtained information from a wide range of sources, the highest percentage of girls stated the internet (51.3%), friends (43.4%), as the sources of knowledge, followed by social workers (22.4%). A minority received information from mass media (TV) 3.9%.

Concerning the menstrual practices, **Table (4):** presents that at pre-intervention phase; the majority (90.8%) of the studied girls have changed their pads twice /day, more than two thirds of them did not warp sanitary pads at plastic bag moreover around one fourth (23.7%) of girls thrown sanitary pads in latrines. Meanwhile, at post intervention phase those girls become more aware about changing their pads and how to dispose it safely. At the pre-intervention phase, more than half (57.9%) of the studied girls changed their panty once/day and 64.8% of them washing it with other clothes compared to 40.8% of them changed their panty  $\geq$  Three times/day and all of them have washed it alone at the post intervention phase.

Unfortunately, it was found that only 3.9 % of them used water and soap for washing their genitalia at the pre-intervention phase compared to all of them using it after intervention. On one hand, 39.5% of the girls stated that they go to school at the first day of their menstruation at pre-intervention phase and this was

increasing to be 67.1% after intervention. On the other hand, (57.9%, 22.4%) of girls mentioned that they take medication and drink warm fluids to relieve their pain consequently. These were changed to be 35.5% and 100.0% respectively at the post intervention phase.

**Table (5):** Points out that the mean practice score of studied sample scores was increased significantly from  $55.46 \pm 8.72$  before implementation of the program to  $77.88 \pm 7.32$  after 3 months of the program. The difference between end program evaluation and at 3 months evaluation was highly statistically significant ( $t=45.811$ ,  $p < 0.001$ )

**Table (6)** Presents the correlation between studied girls' knowledge score and practices scores. There was no significant difference observed between girls' knowledge and their practices before the implementation of the program ( $r = 0.007$ ,  $p=0.950$ ). However, it was significant correlations was found between the studied girls' knowledge and practices scores after the program implementation ( $r = -0.425$ ,  $<0.001$ )

## Discussion

Adolescent represents a very vulnerable group within any population, especially in developing countries. The topic of menstruation and its related concerns, usually face a culture silence. Therefore, it is vital for the girls to be informed about menstrual self-hygienic care at the adolescent period to promote their general health and wellbeing and prevent them from susceptible infection (**Aburshaid et al., 2017**).

The current study was conducted to assess the performance of institutionalized girls towards menstruation. In the present study, the mean age of students' adolescent girls was  $13.59 \pm 1.52$  years. Regarding the age of menarche, more than half of the girls reported it to be at 12 years. Nearly the same result was found in another Egyptian study performed in Albouheira governorate among school adolescents girls, as regards the mean age for menarche (**El-Lassy & Madian 2013**) Moreover, another study performed in Saudi Arabia among school adolescents the mean age of menarche was nearly the same (**Alosaimi, 2014**).

Concerning the preparation for occurrence of menarche, nearly three thirds of the girls reported that they did not know about it in the present study, whereas a Nigerian study by **UM et al., (2010)** reported that nearly all the participants in the study knew about it. The difference between the two findings could be explained that the Nigerian study was performed among school adolescents whereas, the present study performed among institutionalized adolescents who were away from their families.

Furthermore, it may be due to increase in reproductive health awareness among school girls in Nigeria than in Egypt.

The adolescent girls in the present study reported that sources of information about preparation for the occurrence of menarche were friends, the same result was reported by **Maji, (2016)** in a study performed in Westbengal among school students. This finding can be explained that adolescents always listen to their peers.

In the present study it was found that less than three quarters admitted that their menstruation cycle is happening on regular intervals. This is congruent with the findings of another Egyptian study (**El-Lassy & Madian 2013**) Whereas, **Kanotra et al., (2013) & Patil, (2013)** found that more than 90 % of students reported that their cycles were regular This can be explained by the normal adolescent cycle interval in adolescent girls typically 21-45 days. Immaturity of the hypothalamic pituitary ovarian axis during the early years after menarche may lead to long cycle, however, 90% of the cycles will be within the range 21-45 (**Dasharathy, 2012**).

In the current study, there was poor knowledge regarding menstruation. This is consistent with what **El-Lassy & Madian were found (2013)** in Albouhera governorate among school adolescents. Lack of knowledge regarding menstruation can be explained as there is not enough formal or informal education addressing such issues. Whereas, Knowledge scores of studied girls was increased significantly after intervention program, as it was comprehensive and based on active learning strategies such as video presentation, case study, group discussion and role play. Generally, prior awareness regarding menarche and menstruation among girls is low in most of the cultures. This is may be due to the sensitivity of these topics and many mothers and even teachers found that embarrassing to talk about with their girls.

According to their source of knowledge about menstrual hygiene, they reported internet followed by friends then the social worker and TV, this can be explained as they are institutionalized adolescence and unfortunately no guardians care is provided to them. Whereas, this is considered the missed role of the social workers. In addition, the internet become the accessible way for gaining knowledge at any time for adolescents.

As regards the frequency of changing pads per day, the majority of the studied sample change three or four pads per day. This is incoherent with what was found in Nigerian study as they found only one fifth of the studied sample change three or more pads (**Fehintola, et al., 2017**).



The study on the practices during menstruation showed that all the studied girls used sanitary pads during menstruation whereas, in Nagpur, Asia, about half of the studied girls used sanitary pads during menstruation (Thakre et al., 2011). This difference can be explained as the current studied girls can be supported by the funds. Whereas, in the other study they were very poor girls.

Concerning Practices regarding the menstruation in the pre intervention phase, no one had good practices, about three fifths their practices were poor and about two fifths had fair practices. This can be explained by, despite their access to information about menstruation through internet, the girls could not reach to right practices regarding menstruation hygiene. Unfortunately, such lack of knowledge may be attributed to the lack of specialized professional educator, who may not have the necessary skills to impart reproductive health education, including menstrual hygiene to the institutionalized girls.

While, in the post test, there was significant improvement in the menstrual practice. Nearly half of the studied girls were good and the other half was fair. This can be due to using active learning strategies during intervention. Hygiene related practices of women during menstruation are considerable importance. Poor hygiene affects their health by increasing vulnerability to infection especially the infections of urinary tract and perineum (Fehintola, et al., 2017). MHM (Menstrual Hygiene Management) includes soap and water for washing the body is required, beside access to facilities to dispose of used menstrual management materials (Sommer et al., 2015). In the current study it was found that after intervention all of them use soap and water in MHM.

Regarding the frequency of panties changing in the current study they reported more frequency. Concerning way to get rid of sanitary pads, all of them threw pads in dustbin, in addition more than two thirds used plastic bags to discard the pads comparing to about three fifths did not wrap the pads before intervention. These improvements in their practices reflect the impact of educational intervention. This finding in accordance with what was found in 2016 at Assuit citey among school adolescents' girls which reported that practices of school girls has been improved after exposure to the program (Abd Kreem et al., 2016).

Concerning going to school in the first day of menstruation, The current study illustrated that, in the pre-test, about three fifths don't not go. This could be because of their fear about menstrual blood might stain their clothes in addition to feeling pain. While after intervention, more than two third of the studied girls go to school first day of menstruation as

they knew the proper practices to prevent leakage of menstrual blood, in addition all of them used warm fluid to relief menstrual pain. The same result was reported by Abed kareem et al., (2016) as the school absenteeism in the first day of menstruation was improved significantly after the educational program.

Findings of the present study illustrated that, the improvement in the level of performance of the adolescent girls regarding their menstruation. There was a significant relation between their knowledge and practice regarding menstruation in the post intervention program. The present study was in agreement with El-Lassy (2013) who concluded that change in the level of knowledge affect positively on adolescent's menstrual practices.

### Conclusion & Recommendations

Based on the study findings, the following were recommended:

- 1-Adolescent girls face many challenges when managing their menstruation, formed educational program regarding adolescents' health issues and menstrual hygiene should be available to institutionalized adolescents.
- 2- Provide supportive health educational environment concerned with various health issues regarding adolescents.
- 3-Using active learning strategies in addressing sensitive issues such as adolescents health and menstruation will increased their attention, improve retention and practices regarding their health.

### Acknowledgment

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