

# Efficacy of nursing program on menstrual hygiene knowledge among Adolescent Females with Educable Intellectual Disabilities

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**Abstract:** Knowledge of the menstruation in a hygienic way, in privacy, and with dignity, Persons with disabilities represent a significant portion of the world's population, and they are part of every community, (UNESCO,2014). The purpose of this study was to investigate the efficacy of Nursing program on Menstrual hygiene knowledge among Adolescent Females with Educable Intellectual Disabilities. Design: A quasi- experimental research design was utilized (pretest–posttest). Sample: Twenty adolescent females with an educable intellectual disability were enrolled in the study. Instruments of this study were an interviewing questionnaire, to collect information about socio-demographic characteristics, communication with parents, assessment the knowledge of an adolescent female with an educable intellectual disability about Menstrual hygiene. Results: There were significant differences regarding level of knowledge regarding the female, menstruation, menstrual hygiene, between the pretest, and posttest of educational guidelines. Conclusion: The present study concluded that the educational guidelines had a positive effect on the awareness of adolescent females with educable intellectual disability regarding Menstrual hygiene. Recommendation: Further studies should be conducted on the reproductive health care needs of adolescents with disabilities.

**Keywords:** Nursing intervention, adolescent females with educable intellectual disabilities. Menstrual hygiene.

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## 1. INTRODUCTION

The Ministry of Education (2016) in the Province of British Columbia, divides intellectual disability into two categories: Mild Intellectual Disability and Moderate to Profound Intellectual Disability. Students with an intellectual disability, whether mild or moderate to profound, may show needs in the areas of adaptive behavior, usually experiencing significant delay in social emotional development in addition to possible gross and fine motor skill deficits, communication deficits, social reasoning limitations, difficulties with memory, difficulties with problem solving, and difficulties with conceptual skill acquisition. (Ramage, 2017).

in Egypt young people with disabilities (YPWD) are more likely than the general population to be illiterate, unemployed, and impoverished. They often lack equal access to information and education for reasons ranging from barriers regarding physical access to services to varied special learning needs. Very little is known about knowledge, attitude and practice (KAP) of YPWD regarding reproductive health (RH) related issues. ( Burke, et al,2017).

Intellectually disabled adolescents, as well as normal people, experience different changes, such as secondary sexual characteristics and sexual desires. However, these changes may expose them to more problems and challenges due to their low intelligence quotient (IQ). Their poor understanding of inappropriate behaviors, inability in differentiating between

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malicious and normal sexual relations, problems in establishing negotiating relationships, and problem with reporting sexual abuses are some of the examples of their sexual vulnerabilities. (Akrami, Mirzamani, Davarmanesh, 2017).

According to Egyptian National Review report (2018) it found that percent of disabilities is approximately 12.2% of Egyptian population 9.71% of them are living in village. Egypt health issues survey (2015) found that the number of adolescent girls aged 15-19 years is 8 million, only 4,1% of them have enough information about reproductive health, 8,22% of them are living in towns but 4,7 % of them are living in village (Egypt Demographic Health Survey, 2018)

It founded that this study isn't discussed in Menofia or in Egypt before so the researcher found that disabled adolescent females are neglected, and it is important to shed the light for disabled youths for f Nursing program on Menstrual hygiene knowledge can no longer be ignored and neglecting their reproductive health and well-being to avoid adverse effects both now and on their future health and wellbeing.

### Purpose of the Study

**The purpose** of this study was to investigate the efficacy of Nursing program on Menstrual hygiene knowledge among Adolescent Females with Educable Intellectual Disabilities.

### Research Hypotheses

Disabled adolescent females who will receive Menstrual hygiene knowledge will be higher than scores before intervention.

## 2. METHOD

### Research Design: -

The study was conducted using a Quasi- experimental research design utilized (pretest – posttest test).

### Research Setting: -

The study was conducted at agriculture secondary school for dual education at El Sadat city

### Type of sample

Purposive sampling

### Sample size:

The total number of all female students with educable intellectual disabilities for the three levels is 34. The researcher selected 20 adolescents. They were selected from the three levels of the school: -4 from the first level, 10 from second level and 6 from the third level as regards the inclusion criteria.

### Inclusion criteria:

Adolescent female with educable intellectual disability (F.E.I.D) age ranged between (14-18).

### Exclusion criteria

Adolescent female with educable intellectual disability dependent on shadow teacher.

### Tools: -

### Instruments of data collection

The data was collected through two instrument structured interviewing questionnaire.

### The first instrument: Structured interviewing questionnaires (16 questions): -

It included 2 parts as follows:

**Part (I):** Sociodemographic characteristics such age, educational level, number of sisters and brothers, educational level of parents and living with both parents or not, etc.

**Part (II):** Communication with parents such as learning from one of the parents about puberty, about menstruation, reproductive system, etc.

**The second instrument: Assess the knowledge of(F.E.I.D) about Menstrual hygiene knowledge consist of 28 questions** that was adapted by the researcher after a review of related literature to assess females' awareness about Menstrual hygiene knowledge which include:- the first part was anatomy of female reproductive system (4 items), the second part was puppetry (5 items), the third part was menstrual hygiene (19 items).

**Pilot study:** - A pilot study conducted on 10% of the total sample to test the feasibility, clarity and applicability of the tools, and to estimate the time needed to make it. They excluded from the study participant because there were necessary modifications. The result of the pilot study was used to finalize the instrument and schedule the time needed for the fieldwork.

**Ethical consideration:** A written approval obtained from ethical and research committee of the Faculty of Nursing, Menofia University. Written letter from the Faculty of Nursing explaining the purpose of the study was directed to the director of the schools to conduct the study. The (F.E.I.D) briefed about the purpose of the study, encouraged and give full informed consent to (F.E.I.D)participate. It emphasizes that all data collected was strictly confidential and was used for scientific purpose only. Subjects had the right to withdrawn from the study at any time. Formal consent was obtained from the supervisors orally before being involved in the study after explanation of the nature and purpose of the study. There were no risks or any cost of participation, also there were voluntary participation and confidentiality of each subject who was agreeing to participate in the study was assured.

#### **Procedure:**

**Data collection** the data collection of the study took two months starting in October 2021 and ending in November 2021. In this study the participant female in adolescent age (15-18), divided into four groups according to their attendance days. The researcher presented to the school from 8am to 12pm and interviewed females in presenting days. Health visitor attended meeting with study participant.

**Preparatory phase:** A reviewing of past and current literature covering the various aspects of the problem was done using books, articles, magazines, and network about study related to effect of reproductive health nursing intervention on knowledge of female adolescent with educable intellectual disabilities. Booklet was developed by the researcher as guidelines for adolescents to be used in the school.

**Pre-test phase:** a comfortable and private place was chosen for interventions. Orientation was done about researcher name, purpose, and content of the study. Subjects interviewed individually at their rooms where pre-test was done using semi structured questionnaire about Menstrual hygiene knowledge **Implementation phase:** this training was divided into 6 sessions; conducted two times\ week each session has a set of specific objectives. This was achieved through several teaching methods such as Charts, pictures, and graphs. Presentation with power point and Simulator.

**First session** the researcher introduced herself; explained the purpose of the study and females filled the first and the second at the pretest phase. (Sociodemographic data and pretest). then analyzed pretest findings to identify needs of girls Knowledge about reproductive health (needs assessment). Time allowed: half hour.

**The second and third sessions: (Anatomy of reproductive system). Intended learning Out comes (ILOs) of the second session. Knowledge and understanding skills:** Define reproductive system, **explain** structure of female reproductive system and Identify function of female reproductive organs. **Procedure:** - The researcher welcomed the participants and thanked them for their attendance again, the researcher discussed with the participants the anatomy of the reproductive system, the researcher explained about the reproductive system, its component and the changes occur after puberty and the researcher confirmed on the importance of attendance for the next session **Teaching and learning methods used were** Charts, pictures, and graphs. Presentation with power point and Simulator.

**The fourth session: (Menstruation) Intended learning Out comes (ILOs) of the fourth session (knowledge and understanding skills):** Define menstrual cycle, List symptoms of menstruation and Identify methods of relieving menstrual pain. **Procedure:** - The researcher welcomed the participants and thanked them for their attendance again, the researcher discussed with the participants the menstrual cycle, the researcher explained about the menstrual cycle

definition, menstrual syndrome and management with menstrual pain. And the researcher confirmed on the importance of attendance for the next session. **Teaching and learning methods used were** Charts, pictures, videos and graphs. **Time allowed** half hour.

**The fifth session:-(Menstrual hygiene):- Intended learning Out comes (ILOs) of the sixth and Six sessions** :Knowledge and understanding skills: Define menstrual hygiene ,List steps of prenatal care during menstrual hygiene and Enumerate types of pads used. **Procedure:** - The researcher welcomed the participants and thanked them for their attendance again, the researcher discussed with the participants the menstrual hygiene, the researcher explained about the menstrual hygiene. And the researcher confirmed on the importance of attendance for the next session.

**Posttest:** - The researcher evaluated the effectiveness of reproductive health nursing intervention for adolescent females with educable intellectual disabilities, filled the research tools to evaluate program effectiveness through (posttest) and thanked them for their cooperation and hoped the best benefit for them.

**Limitation of the study:** -

The researcher forced to change the place of the study because of the schools prevents any visitor related to spread of corona virus and low immunity of students.

**Data analysis:**

The data obtained were reviewed, prepared for computer entry, coded, analyzed, and tabulated. Descriptive statistics (i.e., frequencies, percentage, mean and standard deviation, etc.) was done using computer program SPSS version 16.

Chi-square test used to compare differences in the distribution of frequencies among group. It is considered \* significant when P values were less than 0.05 or ( $P < 0.05$ ).

### 3. RESULTS

**Table (1):** describes the socio-demographic characteristics of the studied FEID student's as regards their age group, number of family members, education level and occupation father& mother and living with both parents or not. The table shows that the largest age group in the study was the age 16 years old (50%). Most of mothers represented (75%) had high educational level. Almost of them (81.7%) were employed.

**Table 2:** shows information for FEID about the female reproductive system. This table reveals that there was a highly statistically significant difference between the girls' pre, post intervention regarding their knowledge about female reproductive system ( $P$  value  $< 0.001$ ).

**Table (3):** shows the studied FEID students' level of knowledge about puberty. This table reports that there was a highly statistically significant difference between the pre, post intervention regarding their knowledge about puberty where ( $p$  value  $< 0.001$ ).

**Table (4):** shows knowledge of the study FEID students' information about menstruation. This table reveals that there was a highly statistically significant difference between the pre and post -intervention about menstruation where ( $p$  value  $< 0.001$ ).

**Table (5):** shows the study FEID students' knowledge about menstrual hygiene. It reveals that there was a highly statistically significant difference between the pre and post -intervention toward menstrual hygiene where ( $p$  value  $< 0.001$ ).

**Figure (1):** shows the studied participants' communication with parents. This figure shows that 40% of them learned from one of the parents (mother) how the body of a male or female changes during puberty. All of them learn from one of the parents about menstruation something about menstruation. Most of them learned something about male or female reproductive system. While nearly two thirds of them (85%) did not learn from one of the parents about family planning methods.

**Figure (2):** This figure shows that the study FEID students' knowledge about **puberty** was significantly increased in the girls who had good communication with parents than those who had no communication with parents ( $P$  value  $< 0.05$ ).

**Table 1: The studied FEID students according to their Socio-demographic characteristics**

Variable	N=20
<b>Age</b>	
15 years	1 (5%)
16 years	10 (50%)
17years	8 (40%)
18 years	1 (5%)
<b>Number of families members</b>	
From 3-4	14 (70%)
From 4-6	4 (20%)
7 or more	2 (10%)
<b>Number of sisters</b>	
One	14 (70%)
Two	2 (10%)
Four or More	2 (10%)
None	2 (10%)
<b>Number of Brothers</b>	
One	7 (35%)
Two	7 (35%)
Four or More	2 (10%)
None	4 (20%)
<b>Number of rooms in the house</b>	
Three rooms	20 (100%)
<b>Father educational level</b>	
Read & write	7 (35%)
Secondary school	8 (40%)
University	5 (25%)
<b>Father job</b>	
Employed	20 (100%)
<b>Mother educational level</b>	
Read & write	2 (10%)
Secondary school	3 (15%)
University	15 (75%)
<b>Mother job</b>	
Employed	16 (80%)
Unemployed	4 (20%)
<b>Your order in brothers and sisters</b>	
The eldest	14 (70%)
Middle	4 (20%)
Number	2 (10%)
<b>Do you live with your parents</b>	
Both	18 (90%)
One of them	2 (10%)

**Table 2: The studied FEID students according to their knowledge regarding their reproductive system.**

Reproductive system	Before nursing Intervention	After nursing	P value
<b>Do you know what the reproductive system is?</b>			
Yes	0 (0%)	17 (85%)	<0.001*
I don't know	20 (100%)	3 (15%)	
<b>Do you know what the female reproductive system is made of?</b>			
Fallopian tubes, ovaries, uterus	2 (10%)	0 (0%)	<0.001*
All of the above	0 (0%)	18 (90%)	
I don't know	18 (90%)	2 (10%)	
<b>Have you heard of the hymen</b>			
Yes	7 (35%)	20 (100%)	<0.001*
No	13 (65%)	0 (0%)	
<b>What are the types of hymen</b>			
All of the above	0 (0%)	20 (100%)	<0.001*
I don't know	20 (100%)	0 (0%)	

**Table 3: The studied FEID students according to their knowledge regarding their puberty**

Puberty	Before nursing Intervention	After nursing Intervention	P value
<b>What is puberty for a female?</b>			
A process in which the body changes morphologically from the body of a child to the body of an adult human being	7 (35%)	16 (80%)	<0.001*
All of the above	0 (0%)	4 (20%)	
I don't know	13 (65%)	0 (0%)	
<b>What is the age of puberty for a female?</b>			
From 12-14 years old	15 (75%)	20 (100%)	0.047*
I don't know	5 (25%)	0 (0%)	
<b>What is your age of puberty?</b>			
From 8-12 years old	4 (20%)	0 (0%)	0.050*
From 12-14 years old	14 (70%)	14 (70%)	
From 14-16 years old	2 (10%)	6 (30%)	
<b>What are the changes that happen to a girl at puberty?</b>			
Menstruation	4 (20%)	5 (25%)	<0.001*
The appearance of hair in some areas	2 (10%)	0 (0%)	
Other is	0 (0%)	11 (55%)	
I don't know	9 (45%)	4 (20%)	
Menstruation and the growth of sexual Organs	5 (25%)	0 (0%)	
<b>What is the age at which the female is interested in knowing her own body and what distinguishes her from the male?</b>			
Before puberty	0 (0%)	5 (25%)	0.001*
After puberty	12 (60%)	15 (75%)	
I don't know	8 (40%)	0 (0%)	

**Table 4: The studied FEID students according to their knowledge regarding their menstruation.**

Menstruation	Before nursing Intervention	After nursing Intervention	P value
Do you know what the female menstrual cycle is?			
Yes	7 (35%)	20 (100%)	<b>&lt;0.001</b>
I don't know	13 (65%)	0 (0%)	
If the answer is yes, what is it?			
Bleeding from the vagina every month	7 (35%)	11 (55%)	<b>&lt;0.001</b>
All of the above	0 (0%)	9 (45%)	
I don't know	13 (65%)	0 (0%)	
Is puberty related to the menstrual cycle?			
Yes	6 (30%)	18 (90%)	<b>&lt;0.001</b>
No	4 (20%)	2 (10%)	
I don't know	10 (50%)	0 (0%)	
Is menstruation a condition for marriage			
Yes	6 (30%)	18 (90%)	<b>&lt;0.001*</b>
No	4 (20%)	2 (10%)	
I don't know	10 (50%)	0 (0%)	
The place of bleeding during the menstrual cycle?			
Uterus	9 (45%)	20 (100%)	<b>0.002*</b>
Bladder	4 (20%)	0 (0%)	
Anal	2 (10%)	0 (0%)	
I don't know	5 (25%)	0 (0%)	
Two days before the menstrual period, some natural secretions come out?			
Yes	6 (30%)	17 (85%)	<b>&lt;0.001*</b>
No	14 (70%)	3 (15%)	
If yes, what color is it?			
Transparent white	2 (10%)	6 (30%)	0.092
Cheesy white	4 (20%)	5 (25%)	
White transparent and mucous	0 (0%)	2 (10%)	
I don't know	14 (70%)	7 (35%)	
What are the symptoms of menstruation?			
Pain in the lower abdomen, pelvic area, lower back and breasts	16 (80%)	0 (0%)	<b>&lt;0.001*</b>
Mood swings and stress	0 (0%)	2 (10%)	
The appearance of acne on the face and body	0 (0%)	3 (15%)	
I don't know	2 (10%)	0 (0%)	
Another is	0 (0%)	15 (75%)	
all of the above	2 (10%)	0 (0%)	
What do you do with these symptoms?			
Drink hot drinks	8 (40%)	9 (45%)	<b>&lt;0.001*</b>
Doing exercises	0 (0%)	2 (10%)	
All of the above	0 (0%)	9 (45%)	
I don't know	6 (30%)	0 (0%)	
Others are	4 (20%)	0 (0%)	
drink hot drinks & doing exercise	2 (10%)	0 (0%)	

**Table 5: The studied FEID students according to their knowledge regarding their menstrual hygiene.**

Menstrual hygiene	Before nursing Intervention	After nursing Intervention	P value
<b>What type of pads should be used during the menstrual cycle?</b>			
Ready-to-use disposable sanitary napkins	20 (100%)	15 (75%)	0.047*
A piece of cloth is not to be used	0 (0%)	5 (25%)	
<b>How often should the sanitary pads be changed during the day?</b>			
from 2-4 hours	5 (25%)	13 (65%)	<0.001*
4-6hours	0 (0%)	7 (35%)	
Twice daily	4 (20%)	0 (0%)	
3times a day	2 (10%)	0 (0%)	
I don't know	9 (45%)	0 (0%)	
<b>If a piece of cloth is reusable, how is it cleaned?</b>			
Wash with water and detergent and expose to the sun	2 (10%)	5 (25%)	0.407
Other is	18 (90%)	15 (75%)	
<b>What is the number of daily showers during the menstrual cycle?</b>			
Twice	0 (0%)	16 (80%)	<0.001*
3 times	2 (10%)	0 (0%)	
You should not shower during menstruation	14 (70%)	4 (20%)	
I don't know	4 (20%)	0 (0%)	
<b>What do you clean your vagina during your period?</b>			
Use only water	2 (10%)	0 (0%)	<0.001*
Use warm soapy water	4 (20%)	13 (65%)	
Use warm water and disinfectant	0 (0%)	7 (35%)	
I don't know	12 (60%)	0 (0%)	
Use warm soapy water& use of aromatic Substances	2 (10%)	0 (0%)	
<b>How is the vagina cleaned during menstruation?</b>			
Washing the labia and then cleaning from front to back (from the opening of the uterus to the vagina)	2 (10%)	15 (75%)	<0.001*
Cleaning from back to front	0 (0%)	2 (10%)	
No cleaning	2 (10%)	0 (0%)	
I don't know	16 (80%)	3 (15%)	
<b>Should pubic hair be cleaned regularly?</b>			
Yes	8 (40%)	13 (65%)	0.156
No	10 (50%)	7 (35%)	
I don't know	2 (10%)	0 (0%)	
<b>If the answer is no, why?</b>			
Mother's Rejection	3 (30%)	5 (71.4%)	0.153
Fear of pain	7 (70%)	2 (28.6%)	
<b>When should hands be washed?</b>			
Before changing the sanitary napkin After Changing	4 (20%)	0 (0%)	0.029*
Before and after changing the sanitary Napkin	14 (70%)	20 (100%)	
I don't know	2 (10%)	0 (0%)	



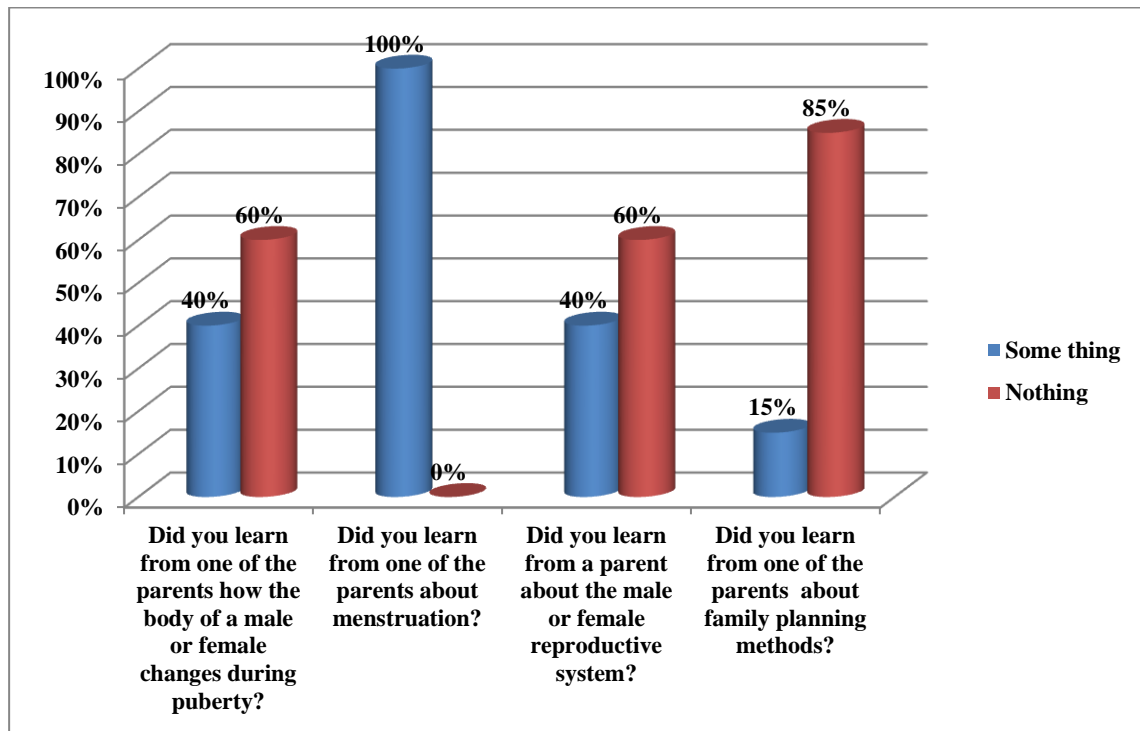


Figure 1: The studied FEID students according to their communication with their parents.

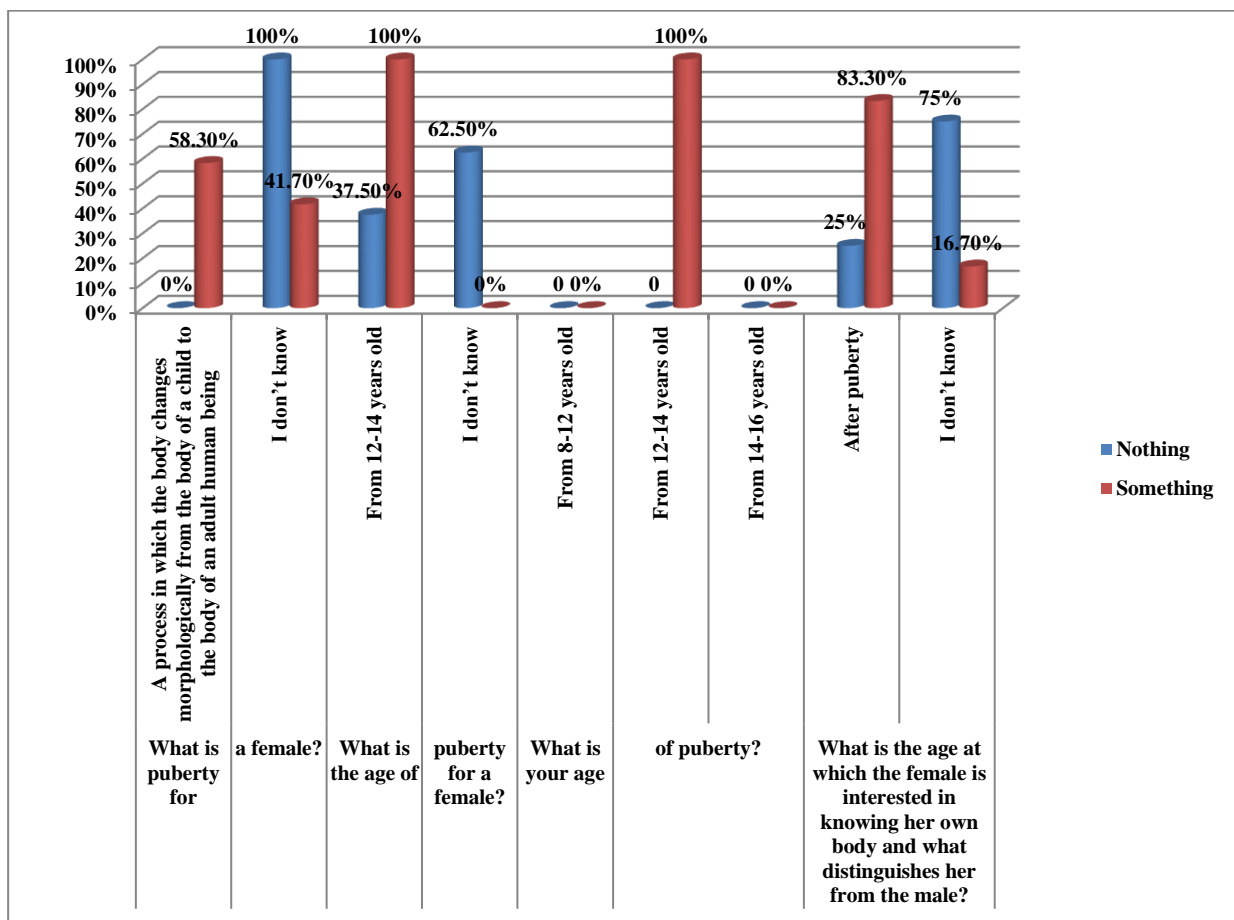


Figure 2: Relationship between communication with parents and girls' information about menstrual hygiene.

#### 4. DISCUSSION

Before discussing the results, the light should be directed to socio-demographic characteristics of the studied subjects which have been answered in the table (1) the result of the present study showed that the study participants 1 (5%) was 15 years old, 10 (50%) were 16 years old, 8 (40%) were 17 years old and 1 (5%) participant was 18 years old. The present findings came in agreement with **Osman et al., 2014** in Assiut who carried out study using Quasi-experimental research design to assess the knowledge, attitude and practice of disabled adolescent girls. Pre, post implementation of the educational program about reproductive health. The results showed that the entire studied sample was females, 62.5% of them were deaf and 37.5 of the participant were blind. According to their ages, it ranged between (16-18) years old, and more than two quarter (42.5%) of them were secondary school.

Also in agreement with **Sabra et al., 2019** who conducted a study about “Effect of Health Educational Program for Females Blinded Adolescents Students regarding Reproductive Health” in El-Nor and El- Amal School Elfayoum City& Benisuef City.. The results showed that the age of them between 12 -14 years old (36.6%).

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And in agreement too with **Rasmia et al., 2015** who conducted a study about “Effect of Health Educational Program for Females Blinded Adolescents Students regarding Reproductive Health” in El-Nor and El- Amal School in Cairo City showed that that the mean age of students  $15.07 \pm 1.17$  (14-16 years).

These results are in disagreement with the results of a study [**Montgomery & Morris, 2011**] , reported that the majority of student’s mothers were housewives and nearly half of them of students’ mothers were illiterate in relation to needs for career the current study revealed that around two thirds of students needs helper (career) to perform certain tasks. This lead to those blind girls have incorrect knowledge regarding reproductive health.

In the present study it was found that 18 (90%) participants lived with both of their parents and 2 (10%) lived with one of their parents for reasons other than death or travel that may affect communication with parents. In line with our results, (**Isler et al., 2009**) highlighted that 37 (92.5%) of participants were living with both parents and 2 (5%) lived with one of their parents.

In the present study, it was found that communication with parents exactly mother, 8 (40%) participants learned nothing about the boy or girl body changes during puberty from one of their parents, all the studied participants learned something about menstruation from one of their parents, 8 (40%) learned nothing about male or female reproductive system and 3 (15%) learned nothing about the means by which we can prevent pregnancy from one of their parents.

In line with our results, **Sabra et al., 2019** revealed that source of students' information more than two third source of students' information from mother play a prominent role in the dissemination of reproductive health information including puberty, sexual transmitted diseases, family planning, menstruation, and menstrual hygiene.

The results of the present study agree with the results of a study [**Wahba & Fahimi, 2012**] who reported that media have a profound impact on young people’s knowledge, beliefs, and attitudes related to reproductive health. And three out of five female respondents considered their mothers as their main source of information about puberty.

In the present study, information for FEID about the female reproductive system. that there was a highly statistically significant difference between the girls’ pre, post intervention regarding their knowledge about female reproductive system (P value < 0.001).it may be related to motivated by a desire to shield them from knowledge of the harms and threats that exist in the world around them.

In line with our results, **Sabra et al., 2019** revealed that most students had incorrect knowledge regarding reproductive system pre intervention while high level of knowledge post intervention. Also, the results of the present study agree with those (**Yohannes et al., 2013**) mentioned that knowledge of students about reproductive system and reproductive health was found to be low. Most of the young people have very little knowledge of what reproductive rights they are entitled to. Sometimes, they do not even appreciate the extent of their violations, and what is worse still, they do not know where they could go for legal or social advice. This lead to that blind girl has incorrect knowledge regard reproductive health.

Regarding information for FEID about puberty there was a highly statistical significant difference between the pre, post intervention regarding their knowledge about puberty where ( $p$  value  $<0.001$ ) except in changes that happen to a girl at puberty that may related to the FEID ability to concentrate and remembering the all changes of puberty.

It disagreed with **Osman et al., 2014** found that regarding to definition of puberty (16.2%) of the studied sample defined it correctly, while (97.5%) of them didn't know the stages of adolescence in pretest but (91.2%) mentioned it in posttest. It may be related to the difference in the ability of learning between blind and intellectual disability girls.

In the present study, it was found that all girls' information about menstruation, menstruation symptoms, and hygiene increased significantly after nursing intervention compared to before intervention ( $P$  value  $<0.05$ ) except information about the color of secretions before menstruation and cleaning of reusable cloth.

In line with our results, **Klett & Turan 2012** carried out a pretest-posttest quasi-experimental research. It was carried out with educable intellectual disability adolescent girls. The study was completed with 25 participants. The results showed that girls' information about menstruation, menstruation symptoms, and hygiene increased significantly after nursing intervention compared to before intervention where the median score for pre-interventional pad replacement skill was 16.00 (minimum: 0 - maximum: 36). The post-interventional score for the first follow-up was 36.00 (minimum: 22 - maximum: 36), and the difference was found strong evidence in support of the alternative hypothesis ( $P < 0.001$ ).

It agreed with **Osman et al., 2014** found that age at menarche more than half of them (58.8%) their menstruation started in age 12 – 13 years while, (57.5%) their menstrual cycle ranged from 21 - 28 days. Regarding to their menstrual symptoms' history the entire studied sample (100%) illustrated abdominal pain, (72.5%) of them mentioned pain in the back and feet during menstruation.

In line with our results, **Sabra et al., 2019** revealed that more than half of the students had complete & correct knowledge regarding menstrual hygiene while high level of knowledge post intervention. The results of the present study are agreement with those (**Teklemariam et al., 2014**) reported that the majority of the high school students' respondents had good knowledge about menstrual hygiene management.

## 5. CONCLUSIONS

In the light of the present study results, it can be concluded that adolescent females with educable intellectual disabilities showed a significant improvement after nursing intervention regarding information about the female reproductive system, puberty, menstruation, menstruation symptoms, hygiene, to before nursing intervention.

Based on the findings of the current study succeeded in achieving the hypothesis that was formulated to achieve the purpose of the study.

## 6. RECOMMENDATIONS

Based on the findings of the present study, the following recommendations are suggested:

Continues health education programs should be implemented for increasing awareness of adolescents with intellectual disabilities about reproductive health and further studies should be conducted in reproductive health care needs of adolescents with disabilities

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