

## Knowledge and Reported Practice of Visually Impaired El-Nour School Female Students about Menstrual Hygiene at Sohag Governorate

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### Abstract:

**Background:** Visually impaired female students have the vast efforts to maintain proper menstrual hygiene. **Aim:** The study aimed to assess knowledge and reported practice of visually impaired El-Nour school female students about menstrual hygiene at Sohag Governorate. **Study design:** A descriptive cross sectional research design was utilized in the study. **Setting:** The study was carried out in El-Nour school in Sohag Governorate. **Sample:** A cluster random sample of fifty-five (55) visually impaired female students. **Tools:** **Tool one** included two parts; **part one** included personal characteristics and **part two** included visually impaired female students' knowledge about menstrual hygiene. **Tool two** included the genital hygiene behaviors scale. **Tool three** included reported practice about perineal care. **Results:** 58.2% of visually impaired female students had unsatisfactory knowledge about menstrual hygiene, 63.6% of them had negative genital hygiene behavior and 74.5% of them had unsatisfactory reported practice about perineal care. **Conclusion:** Visually impaired female student had unsatisfactory knowledge about menstrual hygiene and negative genital hygiene behavior. Also, they had unsatisfactory score of reported practice about perineal care. **Recommendation:** Training and educational program about menstrual hygiene should be provided for visually impaired female students.

**Keywords:** Knowledge, Menstrual hygiene, Reported practice & Visually impaired female students.

### Introduction:

Adolescence is a stage of growth and development that occurs after childhood, from the age of 10 to 19 years, it indicates one of the critical life transitions of visually impaired female students and is marked by an increase in physical, behavioral, and mental development. It needs special attention because it represents the beginning of menarche and proper hygienic habits during menstruation prevent various diseases, especially reproductive and urinary tract infections (Ibrahim et al., 2022).

Visually impaired female students face varieties of discrimination and challenges because of their disabilities. They have the vast efforts to gain knowledge and maintain proper menstrual hygiene. Good hygienic practices such as using sanitary pads properly and washing their hands and genital region thoroughly are essential to be known for maintaining good hygiene during menstruation (El-Kurdy et al., 2020).

Menstrual hygiene is an essential for the development of healthy reproductive life in visually impaired female students. The menstrual cycle is a crucial predictor of adolescent females' reproductive health. It is a monthly bleeding and a physiological process that needs to be managed properly unlike other normal bodily processes. Although menstruation is a normal physiological process,

visually impaired female students hardly have knowledge about normal menstruation and the management of menstrual problem (Faheim et al., 2022).

Menstrual hygiene is the maintenance of hygiene during menstruation and includes practices such as the right way to use sanitary pads and their disposal, daily bath and cleaning perineal area to maintain reproductive health and prevent illness. Proper menstrual hygienic practices decrease the prevalence of the genital tract infection. While, Poor menstrual hygiene can lead to reproductive and urinary tract infections and contribute to visually impaired female students' monthly absenteeism and poor academic performance (Amr, 2021).

The school health nurse has a role in assessing visually impaired female students' needs and developing health educational programs on topics addressing menstrual hygiene to promote healthy lifestyle and protect them from risks such as gynecological problems and she collaborates with educational staff, school social workers, school psychologists, and other health care providers to assess and prevent social, physical, and psychological problems as early as possible. Also, she assists them to learn positive menstrual hygiene practices that must be applied during menstruation to maintain them in adulthood life (Abdelazeem et al., 2022).

**Significance of the Study:**

Globally, the number of visual impairment people was 2.2 billion and visually impaired females was 609 million. The number of visually impaired females were one million in Egypt equals to 2% of the total number of females, whereas they were around 101 thousand accounting for 3.77% of the total numbers of females in Sohag governorate. The total number of visually impaired female students who were enrolled in different blind schools in Egypt was 1562 thousand (**Central Agency for Public Mobilization and Statistics (CAPMAS), 2022**).

According to study in Menoufia Governorate (2021) reported that 75% of visual impairment female students had poor knowledge about menstrual hygiene and they were vulnerable group because they had limitations to access for general health information of menstrual hygiene and their needs had been widely neglected (**Ahmed et al., 2021**). So, the investigator conducted this point of research to assess visually impaired female students' awareness regarding menstrual hygiene.

**Aim of the study:**

To assess knowledge and reported practice of visually impaired El-Nour school female students about menstrual hygiene at Sohag Governorate.

**Research questions:**

- What is the knowledge of visually impaired El-Nour school female students about menstrual hygiene at Sohag Governorate?
- What is the reported practice of visually impaired El-Nour school female students about menstrual hygiene at Sohag Governorate?
- Is there relationship between visually impaired female students' personal characteristics and their behaviors regarding genital hygiene?

**Operational definition:**

**Visual impairment (VI):** it refers to any degree of vision loss that affects a person's ability to perform the usual activities of daily life and it includes blindness as well (**Faheim et al., 2022**).

**Subjects and Method:****Research design:**

A descriptive cross sectional research design was carried out in this study.

**Setting:**

The study was carried out at El-Nour School for visual impairment students at Sohag Governorate. It is a boarding governmental school for male and female students with visual impairment was established in 1990, located in Tera Baja Street, next to Nasser Primary School in Sohag district and it is considered the only school for visually impaired students served all the entire Sohag Governorate population. The students attended the school are boys

and girls with visual problems (blindness and partially sighted) from kindergarten to secondary levels of education. It consists of two buildings (classroom and dorm building), and each building contains three floors. Also, there is a place of prayer and a restaurant providing meals for the students.

**Sample:**

A cluster random sample of (55) visually impaired female students (38 blind and 17 partially sighted females) for at El-Nour school at Sohag Governorate.

**Inclusion criteria:**

1. Visually impaired female students aged from 11 to 19 years.
2. Visually impaired female students who have menstruation.

**Tools of the study:**

An individualized interview structured questionnaire was developed by investigator after reviewing related literature. It included three tools:

**Tool (I)** It included two parts:

**Part one:**

It included sociodemographic characteristics of visually impaired female students such as: age, study grade, place of residence, do you live in the school dormitory, parent's level of education, parent's occupation and number of family members.

**Part two:**

Assess visually impaired female students' knowledge about menstrual hygiene which included anatomy of female reproductive system (2 items), menstruation (6 items) and menstrual hygiene (9 items).

**Scoring system:**

The total score of knowledge was 17 points; correct answer was scored (1) and incorrect answer was scored (zero). The total knowledge satisfaction level was categorized into two categories; satisfactory level for 60% or more of the total correct answers, equal to (10 correct answers or more) which meant a visually impaired female student should had a score 10 or more, and unsatisfactory level for less than 60% of the total correct answers (**Shenouda et al., 2018**).

**Tool II: The Genital Hygiene Behaviors Scale**

developed by (**Karahan, 2017**). It assess genital hygiene behaviors considered to be particularly important for preventing genital tract infections. It consists of 23 items answered in the five-point Likert type and has three subdimensions: "general hygiene behaviors", "menstrual hygiene" and "abnormal finding".

**Scoring system:**

A 5-point Likert scale with options ranging from "never" to "always". Each item had a response as never (1), rarely (2), sometimes (3), often (4), and always (5). All positive items were evaluated similarly with a 5 scale scoring, while reverse coding

was made for negative items (7, 14, 19, 20, and 23). The minimum score of the scale 23 and maximum score 115. The positive genital hygiene behaviors considered if the score was  $\geq 60$  and negative genital hygiene behaviors if it was  $< 60$ .

**Tool III:** Reported practice was used for perineal care developed by (Mahmoud et al., 2014).

**Scoring system:**

For practical evaluation, the interpreted item was "Yes" scored "1" and steps was "No" scored "0". The items were "Yes" of each procedure divided by the total number of the steps for that procedure and changed into a percentage. The satisfactory practice considered 60% or more of the total items, equal to (5 items or more) and unsatisfactory practice if less than 60% of the total items (Shenouda et al., 2018).

**Reliability of tool:**

The reliability of the tools was assessed using the Cronbach alpha test. The value of reliability for questionnaire was 0.883.

**Validity of tools:**

The content validity of the tool was reviewed by (5) experts in community health nursing, Assiut University to evaluate the validity of the tools. Every member was asked to assess the tool content and its structural design to ensure clarity of the questions. All comments and suggestions were considered and reworded and sequence of some statements was carried out accordingly.

**Methodology:**

**Administrative phase:**

An official approval was obtained from the Dean of the Faculty of Nursing at Sohag University to the head of the of Central Agency for Public Mobilization and Statistics (CAPMAS), Sohag Branch and undersecretary of the Ministry of Education in Sohag who they gave an official approval to the director of El-Nour school for visual impairment to conduct the study.

**Pilot study:**

It was carried out before data collection on 10% (6) of visually impaired female students who were included in the study due to the small number of the sample and there were not questionnaire modifications. It aimed to evaluate the sheet's clarity and determine the time required to fill it which was 1-1.15 hours.

**Data collection phase:**

**Ethical consideration:**

Research proposal was approved by the Ethical Committee in the Faculty of Nursing, Assiut University on 25 January 2022. There were no risk for visually impaired female students from a further application of the research, oral consent was obtained from visually impaired female students who were willing to participate in the study after explaining the

nature and purpose of the study, study subjects assured that the data of this research were not be reused without permission, confidentiality and anonymity of student's data were assured and study subjects had the right to refuse to participate and or withdraw from the study at any time.

**Field of work:**

Data collection for this study was carried out over a period of nine (9) weeks from the beginning of October to the beginning of December 2022 after an approval to conduct the study was taken from the undersecretary of the Ministry of Education in Sohag to the director of El-Noor school.

The investigator attended to the school two days per week on Tuesday and Wednesday from 9.00 Am to 2.00 Pm at school official time and data was collected for visually impaired female student during break and absence of teacher. Also, the investigator attended to the school most days in the evening from 3.00 Pm to 7.00 Pm to collect data from those who reside in school dormitory.

Each interview, the investigator interviewed 3-4 students daily. The approximate time was spent with each student during the interview to complete the sheet was 1-1.15 hour depending on the response of interviewee. Each student was interviewed individually at the psychologist's office or a social worker's office.

For assessing knowledge of visually impaired female students regarding menstrual hygiene and behavior of them regarding genital hygiene, the investigator interpreted the questions to the student and marked exactly their answers in the questionnaire.

For assessing reported practice of them regarding perineal care procedure, the investigator asked each student to report how to perform perineal care (**using a tactile perception technique on a model**) and then investigator checked the reported step in the questionnaire.

**Statistical Analysis:**

Data entry and analysis were done using Statistical Package for Social Science (SPSS) software version 23. Data was presented as number, percentage, mean and standard deviation. Chi-square ( $\chi^2$ ) test was used to compare between qualitative variables. Pearson's correlation coefficient (r) was used to measure association between quantitative variables. The Cronbach alpha test was used to assess the reliability of components of questionnaire. P-value considered statistically significant when its value was  $\leq 0.05$ .

## Results:

Table (1): Distribution of visually impaired female students according to their personal characteristics at El Nour School in Sohag governorate, 2022

Personal characteristics	No. (55)	%
<b>Age: (years)</b>		
< 14	28	50.9
≥ 14	27	49.1
Mean ± SD (Range)	13.98 ± 1.95 (11.0-19.0)	
<b>Study grade:</b>		
Primary	10	18.2
Preparatory	27	49.1
Secondary	18	32.7
<b>Place of residence:</b>		
Rural	36	65.5
Urban	19	34.5
<b>Do you live in the school dormitory?</b>		
Yes	32	58.2
No	23	41.8
<b>Father's educational level:</b>		
Illiterate	9	16.4
Basic education	6	10.9
Secondary	23	41.8
University and above	17	30.9
<b>Mother's educational level:</b>		
Illiterate	15	27.3
Basic education	4	7.3
Secondary	24	43.6
University and above	12	21.8
<b>Father's occupation:</b>		
Employee	12	21.8
Skilled worker	15	27.3
Free business	23	41.8
Not working	5	9.1
<b>Mother's occupation:</b>		
Working	8	14.5
House wife	47	85.5
<b>Number of family members:</b>		
4 – 6	28	50.9
> 6	27	49.1

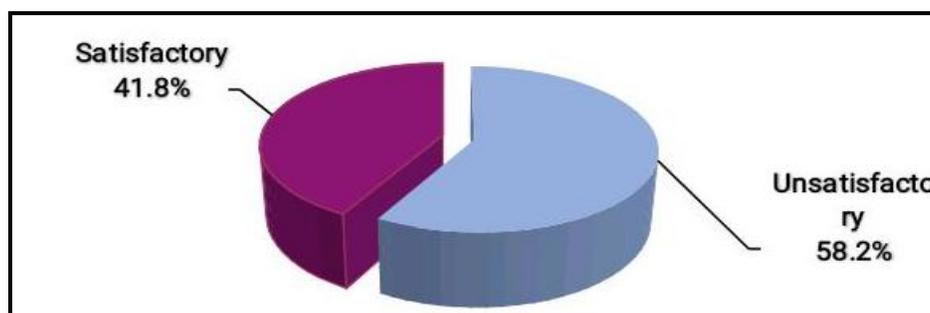


Figure (1): Total knowledge score of female students' menstrual hygiene at El Nour School in Sohag governorate, 2022

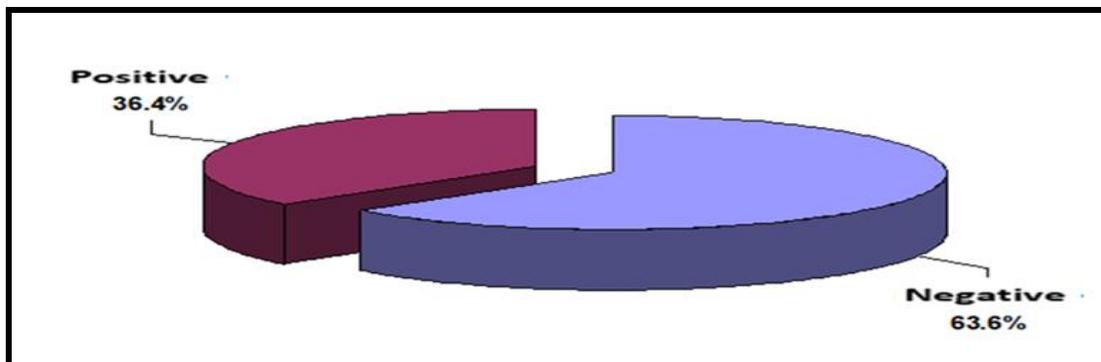


Figure (2): Total score of visually impaired female students' behaviors regarding genital hygiene at El Nour School in Sohag governorate, 2022

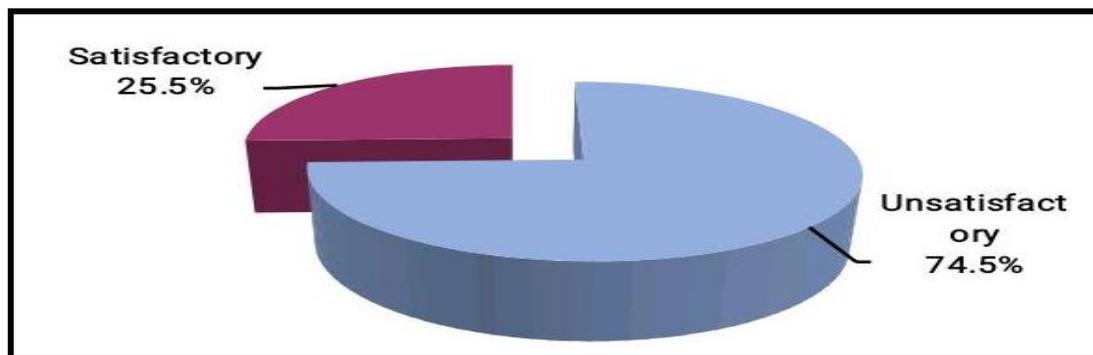


Figure (3): Total score of visually impaired female students' reported practice about perineal care at El Nour School in Sohag governorate, 2022

Table (2): Relation between personal characteristics of studied sample and their genital hygiene behavior at El Nour school in Sohag governorate, 2022.

Personal characteristics	Genital Hygiene Behavior level				P-value
	Negative		Positive		
	No.	%	No.	%	
<b>Age: (years)</b>					
< 14	21	75.0	7	25.0	0.074
≥ 14	14	51.9	13	48.1	
<b>Study class:</b>					
Primary	7	70.0	3	30.0	
Preparatory	22	81.5	5	18.5	0.004*
Secondary	6	33.3	12	66.7	
<b>Place of residence:</b>					
Rural	25	69.4	11	30.6	0.218
Urban	10	52.6	9	47.4	
<b>Do you live in the school dormitory?</b>					
Yes	21	65.6	11	34.4	0.718
No	14	60.9	9	39.1	
<b>Father's educational level:</b>					
Illiterate or basic education	12	80.0	3	20.0	
Secondary	18	78.3	5	21.7	0.002*
University and above	5	29.4	12	70.6	
<b>Mother's educational level:</b>					
Illiterate or basic education	15	78.9	4	21.1	
Secondary	18	75.0	6	25.0	0.001*
University and above	2	16.7	10	83.3	

Personal characteristics	Genital Hygiene Behavior level				P-value
	Negative		Positive		
	No.	%	No.	%	
<b>Father's occupation:</b>					
Employee	4	33.3	8	66.7	
Skilled worker	11	73.3	4	26.7	0.098
Free business	16	69.6	7	30.4	
Not working	4	80.0	1	20.0	
<b>Mother's occupation:</b>					
Working	1	12.5	7	87.5	0.002*
House wife	34	72.3	13	27.7	
<b>Number of family members:</b>					
4 – 6	15	53.6	13	46.4	0.114
> 6	20	74.1	7	25.9	

Chi-square test

\*Statistically significant difference ( $P < 0.05$ )

**Table (3): Relation between personal characteristics of studied sample and their reported practice about perineal care at El Nour School in Sohag governorate, 2022**

Personal characteristics	Practice level				P-value
	Unsatisfactory		Satisfactory		
	No.	%	No.	%	
<b>Age: (years)</b>					
< 14	19	67.9	9	32.1	0.925
≥ 14	18	66.7	9	33.3	
<b>Study class:</b>					
Primary	7	70.0	3	30.0	
Preparatory	20	74.1	7	25.9	0.422
Secondary	10	55.6	8	44.4	
<b>Place of residence:</b>					
Rural	25	69.4	11	30.6	0.637
Urban	12	63.2	7	36.8	
<b>Do you live in the school dormitory?</b>					
Yes	23	71.9	9	28.1	0.391
No	14	60.9	9	39.1	
<b>Father's educational level:</b>					
Illiterate or basic education	13	86.7	2	13.3	
Secondary	16	69.6	7	30.4	0.056
University and above	8	47.1	9	52.9	
<b>Mother's educational level:</b>					
Illiterate or basic education	17	89.5	2	10.5	
Secondary	16	66.7	8	33.3	0.005*
University and above	4	33.3	8	66.7	
<b>Father's occupation:</b>					
Employee	4	33.3	8	66.7	
Skilled worker	12	80.0	3	20.0	0.042*
Free business	17	73.9	6	26.1	
Not working	4	80.0	1	20.0	
<b>Mother's occupation:</b>					
Working	1	12.5	7	87.5	0.001*
House wife	36	76.6	11	23.4	
<b>Number of family members:</b>					
4 – 6	16	57.1	12	42.9	0.103
> 6	21	77.8	6	22.2	

Chi-square test

\*Statistically significant difference ( $P < 0.05$ )

**Table (1):** Showed that 50.9% of the studied students were < 14 years and 49.1% of them were in preparatory grade. Regarding to place of residence, 65.5% of them were living in rural area and 58.2% of them were residing in a school dormitory. According to their parent s' education, 41.8% of their father and 43.6% of their mother had a secondary level of education. Concerning occupation of their parents, it showed that 41.8% of their fathers had a free business, while 85.5% of their mothers were not working. Regarding to the number of family members, 50.9% of them had 4-6 members in the home.

**Figure (1):** Represent that 41.8% of the studied female students had a satisfactory knowledge about menstrual hygiene, while 58.2% of them had unsatisfactory knowledge.

**Figure (2):** Showed that 36.4% of the studied students had positive genital hygiene behavior, while 63.6% of them had negative genital hygiene behavior.

**Figure (3):** Demonstrated that 25.5% of the studied female students had a satisfactory reported practice about perineal procedure, while 74.5% of them had unsatisfactory score of reported practice.

**Table (2):** Stated that there were statistically significant differences between visually impaired female students' level of behaviors regarding genital hygiene and their study class, father's educational level, mother's educational level and mother's occupation (P-value = 0.004, 0.002, 0.001 and 0.002) respectively.

**Table (3):** Illustrated that there were statistically significant differences between the studied female students' level of reported practice and their mother's educational level, father's occupation and mother's occupation (P-value=0.005, 0.042 and 0.001) respectively.

### Discussion:

Menstrual hygiene is the maintaining of hygiene during menstruation. It includes care practices such as perineal care (methods of cleaning, methods of drying, use of pads and disposal of pads), hand hygiene and bath pattern to maintain reproductive health. Visually impaired female students are more susceptible to having reproductive problems. So, menstrual hygiene is an essential precaution for them to prevent genital and urinary tract infection (Faheim et al., 2022).

The current study aimed to assess knowledge and reported practice of visually impaired El-Nour school female students about menstrual hygiene at Sohag Governorate.

**Regarding the total score of visually impaired female students' knowledge about menstrual hygiene,** the current study demonstrated that more than half of visually impaired female student had

unsatisfactory knowledge about menstrual hygiene. From the investigator point of view, this may be due to the visually impaired female students have great efforts to know and practice the menstrual hygiene in a proper way and need more education from their parents and school which is very limited.

This result agreed with El-Kurdy et al., (2020) who found that three quarter of them had a poor knowledge about menstrual hygiene. While, this result was in contrast with Dündar & Özsoy, (2020) who demonstrated that more than half of students had knowledge about menstrual hygiene

**Regarding the total score of visually impaired female students about genital hygiene behavior,** this study\ demonstrated that more than three fifth of visually impaired female students had negative genital hygiene behavior. The investigator point of view was the visually impaired female students have the vast efforts to practice the proper menstrual hygiene due to their visual impairment and lack of knowledge about how to maintain positive menstrual hygiene behaviors.

This result was in the same line with Ahmed et al., (2021) who demonstrated that four fifth of blind adolescent girls had poor menstrual hygiene behavior. Also, this result was in the same line with Özdemir & Kılıç Uçar., (2022) who found that the majority of visually impaired women had negative genital hygiene behaviors.

On other hand, this result disagreed with Kayalvizhi et al., (2019) who showed that more than fourth fifth of visually challenged adolescent girls had good menstrual hygiene behavior.

**Regarding the total score of reported practice about perineal care,** the current study demonstrated that more than two third of visually impaired female students had unsatisfactory score of reported practice. From the investigator point of view, this may be due to their lack of vision which is a constraint to understanding and mastering the proper technique of perineal care procedure and their school or parents are not educating them how to perform this technique sufficiently.

This result agreed with Faheim et al., (2022) who showed that more than three quarter of blind adolescent girl students had inadequate practices of perineal care.

**This finding about the relation between personal characteristics of studied sample and their genital hygiene behavior,** the current study demonstrated that there were statistically significant differences between visually impaired female students' level of behaviors regarding genital hygiene and their study grade, father's education, mother's education and mother's occupation. From the investigator point of view, this may be due to the educated mothers will be

understanding about menstrual hygiene than illiterate and educated father assist their mother to understand and meet need of them. Also, study grade has an impact due to visually impaired female students of secondary level become more experienced in how to deal and maintain menstrual hygiene.

This finding agreed with **Hussein et al., (2022)** who revealed that parent's education, mother occupation and grade level of girl had significant influence on menstrual hygiene habits of girls.

On other hand, this finding disagreed with **Ghazal, (2022)** who demonstrated that there was not statistically significant association between health behaviors of adolescent's girls regarding menstrual hygiene and sociodemographic characteristics of the study sample such as study level of adolescent's girls, parent education level and mother's occupation.

**Regarding the relation between personal characteristics of studied sample and their reported practice about perineal care,** the current study demonstrated that there were statistically significant differences between visually impaired female students' level of reported practice about perineal care procedure and their mother's educational level. From the investigator point of view, this may be due to their highly educated mother aware and able to educate their females with more and accurate perineal care practice.

This finding agreed with **Arunachalam et al., (2022)** who showed that there was a statistically significant association between practice regarding perineal care and mother's educational level.

**Regarding the relation between personal characteristics of studied sample and their reported practice about perineal care,** the current study demonstrated that there were statistically significant differences between visually impaired female students' level of reported practice about perineal care father's and mother's occupation. From the investigator point of view, this may be due to their occupied parents aware and able to educate their females with more and accurate perineal care practice and occupied fathers assist their mother to understand needs of them.

This finding agreed with **Faheim et al., (2022)** who stated that there was significant association between score of self-reported practice regarding perineal care and their mother occupation.

This study revealed that visually impaired female students at El-Nour school in Sohag governorate had unsatisfactory knowledge about menstrual hygiene, negative genital hygiene behavior and unsatisfactory practice regarding and perineal care because they have great efforts to know and practice the menstrual hygiene in a proper way and need more education from their parents and school which is very limited.

This may lead to genital tract infection that will effect on their health, school attendance and academic achievement. So, it is important to provide continuous school health education and training program with the active involvement of school health nurse and social workers for them to improve their knowledge and practice related to menstrual hygiene at home and school.

### Conclusion:

Visually impaired female student had unsatisfactory knowledge about menstrual hygiene and they had negative genital hygiene behavior. In addition, they had unsatisfactory reported practice related to perineal care.

There was a strong positive and highly significant correlation between total score of knowledge and their behaviors regarding genital hygiene as well as their reported practice about perineal care. In addition, there were statistically significant differences between mother' educational level and occupation and genital hygiene behavior as well as reported practice about perineal care.

### Recommendations:

**In the light of the study's finding, the investigator is recommended that:**

- Activating the role of educational sessions of audio drama in raising awareness about menstrual hygiene and using perineal area model to develop menstrual hygiene skills of students by using tactile perception technique.
- Training and educational programs regarding menstruation and menstrual hygiene should be applied to raise the awareness of visually impaired adolescent girls in different setting.
- Further studies may be required using a larger sample size and a wider geographic area that include visually impaired girls and their mothers and school staff in order to understand special needs of them

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