Knowledge and Attitude of Deaf and Mute Adolescent Girls about Menstrual Health and Hygiene Management

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Abstract

Background: Poor Menstrual Health and Hygiene Management (MHM) is a major public health problem. Many girls experience shame, fear and lack of accurate information, advice, and support regarding their menstruation. **Aim of the study:** to assess knowledge, and attitude of deaf and mute adolescent girls about menstrual health and hygiene management. **Design**: Descriptive cross sectional research design was used in this study. **Setting:** It was conducted in Al-Amal School in Qena Governorate. **Sample:** The total number of the studied sample was 63 girls; purposive sample technique was used to choose the students. **Tools:** Two tools were used. Tool I: Self-administered questionnaire was used which consisted of two parts; part (1): socio demographic data, and part (2): knowledge towards menstruation. Tool II: Attitude scale was used to determine the attitude toward menstrual health and hygiene management. **Results**: 65.1% of deaf and mute adolescent girls aged from 16 - 19 years. According to their knowledge, 58.7% of them had poor knowledge. Regarding to their attitude, 60.3% of them had negative attitude toward menstrual health and hygiene management. **Conclusion:** Less than two thirds of deaf and mute adolescent girls had poor knowledge and negative attitude toward menstrual health and hygiene management. Also, there was statistically significant difference between total score of attitudes of deaf and mute adolescent girls with age (P value = .011) and residence in school (P value =.014). **Recommendations:** Educational programs should be provided to deaf and mute adolescent girls to enhance their awareness of menstrual health and hygiene management.

Keywords: Deaf and mute girls, Menstruation, Menstrual Health and Hygiene Management.

1. Introduction

Adolescence is a transitional stage between childhood and adulthood, characterized by changes in behavior, attitudes, moral values, and cognitive abilities. Proper development during this phase can enhance overall health and quality of life. However, due to prevailing taboos and socio-cultural barriers, many teenage girls remain unaware of the scientific aspects of menstruation, which adversely affects their health. Research conducted in developing countries reveals that most school-going adolescent girls have limited knowledge about menstrual hygiene ***(Ghimire et al., 2024)***

Menstrual Hygiene Management (MHM) encompasses having accurate and timely knowledge about menstruation, affordable, access to safe, and appropriate sanitary products, support from well-informed professionals, availability of healthcare services, washing facilities, and proper sanitation; positive attitudes, safe and hygienic disposal methods, as well as advocacy and supportive policies. For effective MHM, girls need access to adequate Water, Sanitation, and Hygiene (WASH) facilities, affordable and suitable menstrual hygiene materials ***(Onubogu et al., 2024).***

Menstrual hygiene is essential for the dignity and well-being of girls. It is a natural aspect of life that every girl experiences from adolescence to menopause. MHM involves various practices, including the type of absorbent materials used, the frequency of changing them, bathing habits, methods of washing, drying, and storing reusable pads, as well as the locations of menstruation-related changing and washing practices ***(Ahmed et al., 2024).***

Menstrual pain (abdominal pain) is a common issue experienced by adolescents worldwide, but it can be extra challenging for deaf and mute adolescent girls. They often struggle to express their discomfort or pain, making the experience even more difficult. Additionally, deaf and mute adolescent girls may face greater challenges during puberty and menstruation, including menstrual irregularities, hygiene management, behavioral concerns, as well as issues related to sexuality, pregnancy, and vulnerability to abuse ***(Enoch et al., 2020).***

The school nurse plays a vital role in coordinating and conducting health assessments, as well as protecting and promoting students' well-being. Therefore, helping deaf and mute adolescent girls gain the knowledge and independence needed for effective MHM. Additionally, the school nurse collaborates with educational staff, school social workers, psychologists, and other healthcare professionals to identify and address social, physical, and psychological challenges as early as possible. She also guides deaf and mute adolescent girls in adopting positive menstrual hygiene attitude ***(Abdelazeem et al., 2022; Mahazam et al., 2023).***

Significance of the Study:

High-quality knowledge and a positive attitude toward menstrual hygiene are crucial throughout menstruation, as they help boost

the confidence of deaf and mute adolescent girls in various ways. Therefore, assessing their menstrual knowledge and attitude, as well as identifying gaps in awareness, is essential to promoting proper hygienic habits during the menstrual cycle. Although adolescence is generally considered a healthy stage of life, many of them lack the knowledge, experience, and comfort needed to access reproductive health services. Given this, it is vital to explore this issue further to establish a baseline for understanding adolescents' knowledge and attitudes ***(Sharma et al., 2020; Fatima et al., 2023).*** Therefore, the present study was conducted to assess knowledge, and attitude of deaf and mute adolescent girls about menstrual health and hygiene management.

The Aim of the study:

This study aimed to assess the knowledge, and attitude of deaf and mute adolescent girls about menstrual health and hygiene management.

Research questions:

1- What is the level of knowledge among deaf and mute adolescent girls regarding menstrual health and hygiene management?

2- What is the attitude of deaf and mute adolescent girls toward menstrual health and hygiene management?

3- Is there a statistical relationship between the total knowledge score of deaf and mute adolescent girls and their socio-demographic data?

4- Is there a statistical relationship between the total attitude score of deaf and mute adolescent girls and their socio-demographic data?

2. Subject and Method

Research design:

Descriptive cross sectional research design was used in this study.

Setting of the study:

The study was conducted in Al-Amal School (preparatory and secondary) for the deaf and mute girls in Qena Governorate. This setting was selected because it is the only school for the deaf and mute girls in Qena Governorate.

Sampling size and technique:

- The total numbers of deaf and mute girls in Al Amal School were 63 girls from Al Amal School in Qena Governorate. The sampling technique for the selection of students was convenient sampling method. The sample consisted of all students enrolled in the study who met the

following eligibility criteria: girls aged 12 to 19 years, currently menstruating, possessing an IQ of at least 75 (based on school records), and having no health problems. Additionally, they had to agree to participate and have not participated in any similar study.

Tools of data collection:

Two tools were used for data collection to carry out this study, which included:

Tool I: *Self-administered questionnaire was designed by the researchers based on relevant literature, which consisted of two parts: -*

Part 1: Socio demographic data of deaf and mute adolescent girls included name (optional), age, student level of education, residence in school, place of residence with family, parent's level of education and occupation, family size and family income.

Part 2: Knowledge of deaf and mute adolescent girls toward menstruation conducted by **(Mahmoud & Ibrahim, 2020)** which included; the knowledge about menstruation and menstrual hygiene, misconceptions about menstruation and basic anatomy of reproductive system.

Scoring system:

A scoring system was developed to assess the knowledge of deaf and mute adolescent girls, consisting of 28 questions divided into four categories: menstruation and menstrual hygiene (14 questions), misconceptions about menstruation (12 questions), and basic anatomy of the reproductive system (2 questions). A completely correct answer was given a score of 2, an incomplete correct answer received a score of 1, while an incorrect or "don't know" response was scored 0. The scores for each knowledge category were summed and divided by the number of items, with the total knowledge score amounting to 56 points.

Total knowledge score according to **Mahmoud & Ibrahim, 2020** divided into:

Poor → < 50%

Fair → 50- 75%

Good → ≥ 75%

Tool (2): Attitude scale was used to determine the attitude of deaf and mute adolescent girls toward menstrual health and hygiene management adopted by **(Boakye-Yiadom et al., 2018).** The questions on attitude included; girls ever missed school due to menstruation, abstained from

household work due to menstruation, foods that menstruating girls should avoid, menstruating girls are dirty/ unclean and whether menstruation is too shameful to discuss.

Scoring system:

Attitude scale included 5 questions to assess the attitude of deaf and mute adolescent girls toward menstrual health and hygiene management; each answer was carry one point, score at least three points were describe as having a "positive" attitude toward menstruation but score below three points were describe as having a "negative" attitude toward menstruation.

Total attitude score according to **Boakye-Yiadom et al., 2018** divided into:

Negative attitude → < 60%

Positive attitude → ≥ 60%

Validity of tools:

It was reviewed by 3experts at Faculty of Nursing in Suez Canal University to evaluate the validity of the tools. The tool was examined for content coverage, clarity, relevance, applicability and wording.

The utilized tools were reliable. NSPBS reliability was 0.95

Reliability of tools:

Reliability was applied by the researchers for testing the internal consistency of the tools and the value of Cronbach's Alpha reliability was 0.87 for knowledge, 0.81 for practice and 0.84 for attitude.

Ethical considerations:

Approval was obtained from the Research Ethical Committee in the Faculty of Nursing, Suez Canal University (committee no. 138/1.2022). The researchers explained the aim and nature of the study to deaf and mute adolescent girls for gaining their cooperation. Written consent was obtained from parents and deaf and mute adolescent girls to participate in the study and inform them about voluntary participation and about their right to withdraw at any time from the study without any rationale. The topic of this study was not touching religious, ethical and moral issues among participants, studied sample was assured that all gathered information was confidential and was used only for the purpose of the study.

Pilot study:

Pilot study was carried out before starting of data collection on (10%) 7 students of deaf and mute adolescent girls. The aim of pilot study was to test the clarity of the tools and to estimate the required time to fill the

questionnaire. Girls who share in the pilot study were excluded with the main study sample.

Administrative design:

An official approval letter was obtained from the Dean of the Faculty of Nursing, Suez Canal University, and sent to the Directorate of Education. From there, it was forwarded to the Central Agency for Public Mobilization and Statistics, then to the Centralized Management of Security, and finally to the director of Al-Amal School for Deaf and Mute Adolescent Girls in Qena Governorate. The letter granted permission to conduct the study.

Statistical Analysis:

Data entry and data analysis were done using SPSS version 22 (Statistical Package for Social Science) and Excel 2016 program. Data were presented as number, percentage, mean, and standard deviation. Chi-square test was used to compare between qualitative variables. P-value considered highly statistically significant when $p < 0.01$ and statistically significant when $P < 0.05$.

3. Results

Table (1): shows that, 65.1% of deaf and mute adolescent girls their ages ranged from 16-19 years. Concerning with level of education, it was revealed that 71.4% of them were in secondary school. Regarding residing in the school, 73.0% of them were residing at the school. According to the residence with family, 52.4% of them were from urban areas. According to socio demographic data of their parents, table (1) reveals that, 42.9% of their fathers had secondary educational level and 34.9% of them were governmental employee. Relating to mother's data, 38.1% of them had secondary educational level and 87.3% of them were housewives.

Figure (1): reveals that, 58.7% of deaf and mute adolescent girls had poor knowledge and 41.3% of them had fair knowledge.

Figure (2): reveals that, 60.3% of deaf and mute adolescent girls had negative attitude.

Table (2): indicated that, there was a highly statistically significant difference between the total knowledge score and age, level of education, and residence in school (P-value = 0.001).

Table (3): cleared that, there was statistically significant difference between total score of attitudes of deaf and mute adolescent girls with age (P value = 0.011) and residence in school (P value = 0.014).

Table (4): reveals that there were no statistically significant correlations between the total knowledge score and the total attitude score of deaf and mute adolescent girls in Qena Governorate.

4. Discussion

Menstrual hygienic management in the adolescent period can have effect on health and wellbeing. As a result, the lack of knowledge about menstruation and their own bodies is a major barrier to menstrual health for girls and their surrounding communities, who lack accurate knowledge on how to react to and manage menstruation. The common risk factor for vaginal infections is poor menstrual hygiene. Unfortunately; 90.5% of girls are unsuccessfully meet the criteria for sufficient menstrual hygienic practices ***(Sharmay et al., 2020;*** **Hussein et al.,** ***2021).***

Regarding socio-demographic data, it was found that approximately two-thirds of deaf and mute adolescent girls were between the ages of 16 and 19years. This finding aligns with the study by **Enoch et al. 2020,** under the title "Menstrual hygiene management: Challenges and coping strategies for adolescents with disabilities in the Kumasi metro of Ghana" which reported that about two-thirds of the participants fell within the same age range. Concerning their educational level, the results revealed that nearly three-quarters of them were enrolled in secondary school. These findings are supported by the study "Effect of Assistive Technology on Knowledge and Practices of Hearing- Impaired Adolescents Regarding Reproductive Health" at Cairo Governorate, Egypt which conducted by **Soliman et al. 2021,** which indicated that around two-thirds of the studied girls were attending secondary school.

According to the residence with family, more than half of them were from urban areas. These findings were matched with the results of **Soliman et al., 2022** who conducted a study under title "The effect of premenstrual syndrome among adolescent nursing female students on their quality of life" at Tanta, Egypt and reported that, half of the studied females were from urban areas. Additionally, this finding dissimilarity with **Mahmoud & Ibrahim, 2020** who conducted a study about "Effectiveness of educational sessions on reproductive health among blind and deaf students at Zagazig City" in Egypt and found that, more than one quarter of studied sample reside urban areas.

Also, with a study "Educational program regarding reproductive health for

handicapped adolescents in Sharkia Governorate" in Egypt conducted by **Mahmoud & Sabbour, 2021** who found that one fifth of students were from urban areas. In my opinion the difference between the current study and other study is may be due to the urban residents have a higher cultural level and desire to educate their deaf and mute girls than rural residents.

Concerning with total knowledge score of deaf and mute adolescent girls regarding menstrual health and hygiene management, less than two thirds of them had poor knowledge. The findings of the present study congruent with **Ghimire et al., 2024** under the title "Effects of health education intervention on menstrual hygiene knowledge and practices among the adolescent girls of Pokhara metropolitan, Nepal" who detected that, half of adolescent girls had poor knowledge score about menstrual hygiene. While these results incongruent with **Mahmoud & Ibrahim, 2020** who found that, all of blind and deaf students had poor knowledge about reproductive health.

Additionally, the results of the present study disagree with **Arunachalam et al., 2020** who study "Knowledge and Practice on menstrual hygiene among specially abled (Deaf & Dumb) adolescent Girls at selected centers in Bhubaneswar, Odisha State -A Pilot Project" in India and found that, more than one quarter of them had inadequate of knowledge regarding menstrual hygiene.

In my opinion, the discrepancy between these findings of the current study may be due to the socio-cultural factors that play a crucial role, as some communities promote open discussions about menstruation, while others consider it a sensitive topic, limiting access to information. Additionally, accessibility to knowledge sources such as healthcare professionals, family support, or digital resources might vary between the studied populations. These factors collectively contribute to the variations observed in the level of knowledge about menstrual health and hygiene management.

Concerning with total attitude score of deaf and mute adolescent girls toward menstrual health and hygiene management, around three quarters of them had negative attitude toward menstrual health and hygiene management. This result agrees with **Parasuraman et al., 2022** who studied the "Impact of health education intervention on menstruation and its hygiene among urban school-going adolescent girls in Thiruvallur,

Tamilnadu" in India and reported that, around three quarters of adolescent girls had negative attitude toward menstruation and its hygiene. Also, with a study about "Perception of Deaf and mute Pubertal Girls' Regarding Puberty, and Healthy Promoting Lifestyle" which conducted at Helwan City, Egypt by **Abd El-Halim et al., 2024** who stated that, more than three quarters of adolescent girls had negative attitude regarding puberty.

In the current study the relationship between total score of knowledge about menstrual health and hygiene management with socio demographic data of deaf and mute adolescent girls. There was a highly statistically significant difference between the total knowledge score and age, level of education, and residence in school. The results of this study disagree with **Mahmoud & Ibrahim, 2020** who revealed that, there was statistically significant relationships were found between total knowledge of reproductive health with age.

5. Conclusion:

Based on the findings of this study, it can be concluded that, more than half of deaf and mute adolescent girls had poor knowledge and negative attitude toward menstrual health and hygiene management. However, there was a highly statistically significant difference between the total knowledge score and age, level of education, and residence in school. Also, there was statistically significant difference between total score of attitudes of deaf and mute adolescent girls with age and residence in school. Finally, there were no statistically significant correlations between the total knowledge score and the total attitude score of deaf and mute adolescent girls in Qena Governorate.

6. Recommendations:

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

1- Health education programs should be provided to all deaf and mute students to increase their knowledge and attitude related to menstrual health and hygiene management.
2- Replication of this study on a larger sample and in different settings for adolescents at deaf and hearing-impaired schools for generalization of results.

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Table (1): Distribution of deaf and mute adolescent girls according to their socio demographic data at Al-Amal Schools in Qena Governorate (No.= 63)

Items	No. =63	%
Age of student		
12 - ≤15 years	22	34.9
16 - 19 years	41	65.1
Mean ± SD	**16.1 ± 1.92**	
Student Level of Education		
Preparatory	18	28.6
Secondary	45	71.4
Residence in school		
Yes	46	73.0
No	17	27.0
Place of residence with family		
Rural	30	47.6
Urban	33	52.4
Father' educational level		
No read & write	8	12.7
Read & write	9	14.3
Preparatory	10	15.9
Secondary	27	42.8
University or more	9	14.3
Father' occupation		
Farmer	15	23.8
Governmental employee	22	34.9
Technical worker	11	17.5
Free work	15	23.8
Mother' educational level		
No read & write	10	15.9
Read & write	13	20.6
Primary	1	1.6
Preparatory	11	17.5
Secondary	24	38.1
University or more	4	6.3
Mother' occupation		
Governmental employee	8	12.7
House wives	55	87.3

Figure (1): The total score of deaf and mute adolescent girls according to their knowledge regarding menstrual health and hygiene management at Al-Amal School in Qena Governorate (No.= 63)

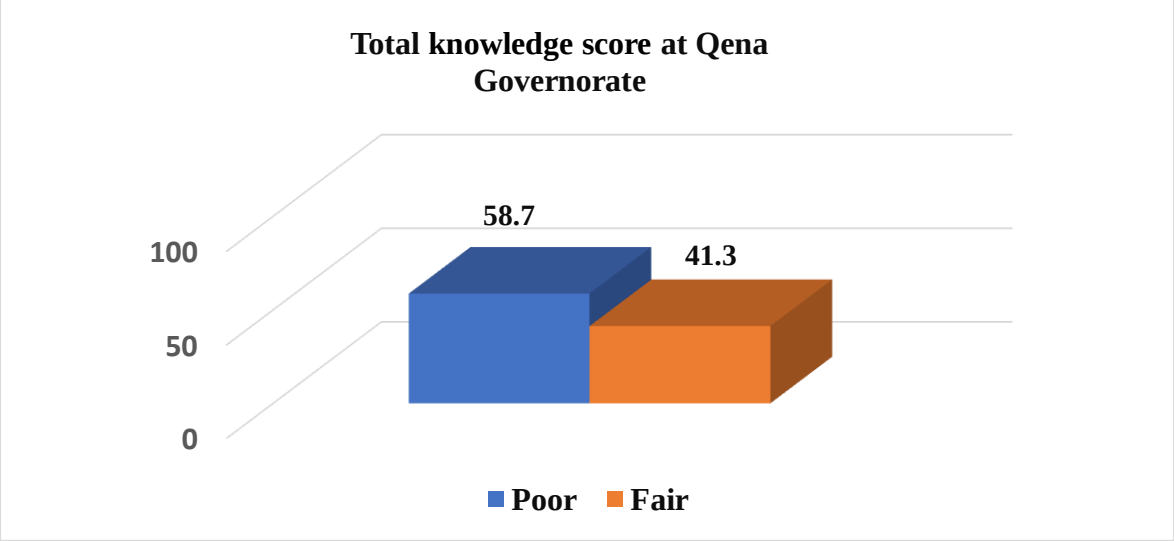

Figure (2): The total score of deaf and mute adolescent girls according to their attitude toward menstrual health and hygiene management at Al-Amal School in Qena Governorate (No.= 63)

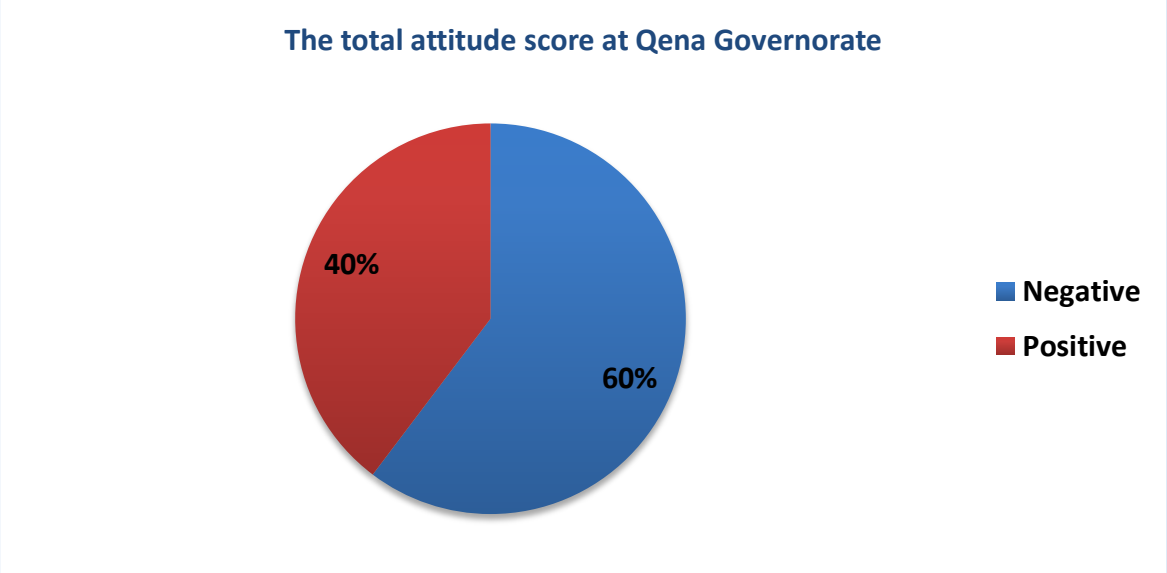

Table (2): The statistical relationship between the total knowledge score of deaf and mute adolescent girls and their socio-demographic data at Al-Amal Schools in Qena Governorate (No.= 63)

Items	Total knowledge score			X^2	P- value
	Poor	Fair	Good		
	No. (%)	No. (%)	No. (%)		
Age of student					
12-15 years	20 (54.1)	2 (7.7)	0 (0.0)	14.442	0.001**
16-19 years	17 (45.9)	24 (92.3)	0 (0.0)		
Student level of education					
Primary	18 (48.6)	0 (0.0)	0 (0.0)	17.708	0.001**
Secondary	19 (51.4)	26 (100.0)	0 (0.0)		
Residence in school					
Yes	21 (56.8)	25 (96.2)	0 (0.0)	12.029	0.001**
No	16 (43.2)	1 (3.8)	0 (0.0)		
Place of residence with family					
Rural	19 (51.4)	11 (42.3)	0 (0.0)	0.501	0.479
Urban	18 (48.6)	15 (57.7)	0 (0.0)		

****Highly statistically significant at (p<0.01)**

Table (3): The statistical relationship between the total attitude score of deaf and mute adolescent girls and their socio-demographic data at Al-Amal School in Qena Governorate (No.= 63)

Items	Total attitude score		X^2	P- value
	Negative	Positive		
	No. (%)	No. (%)		
Age of student				
12-15 years	18 (47.4)	4 (16.0)	6.529	0.011*
16-19 years	20 (52.6)	21 (84.0)		
Student level of education				
Primary	14 (36.8)	4 (16.0)	3.210	0.073
Secondary	24 (63.2)	21 (84.0)		
Residence in school				
Yes	32 (84.2)	14 (56.0)	6.091	0.014*
No	6 (15.8)	11 (44.0)		
Place of residence with family				
Rural	18 (47.4)	12 (48.0)	0.002	0.961
Urban	20 (52.6)	13 (52.0)		

*** Statistically significant at (p<0.05)**

Table (4): The correlations between the total knowledge score and the total attitude score of deaf and mute adolescent girls at Al-Amal School in Qena Governorate (No. = 63)

Items	Knowledge level			X^2	P-value
	Poor	Fair	Good		
	No. (%)	No. (%)	No. (%)		
Total attitude score					
Negative	22 (57.9)	16 (42.1)	0 (0.0)	0.028	0.868
Positive	15 (60.0)	10 (40.0)	0 (0.0)		

7. References

Abd El-Halim, M., Mohamady, S., & Abd Gwad, N. (2024). Perception of Deaf and mute Pubertal Girls' Regarding Puberty, and Healthy Promoting Lifestyle. Helwan International Journal for Nursing Research and Practice, 3(5), 106-121. doi:10.21608/hijnrp.2024.264729.1113

Abdelazeem, A., Hossein, Y., Eltomy, E., & Mohamed, M. (2022). Healthy lifestyle practices among visually impaired adolescent students at el- Noor school in Minia Governorate. Minia Scientific Nursing Journal, 11(1), 21-31. doi:10.21608/msnj.2022.119884.1018

Ahmed, S., Nimonkar, R., Kalra, K., Singh, M., Rajiva, & Singh, S. (2024). Menstrual hygiene management and menstrual problems among adolescent girls in an urban area in North India: A cross-sectional study. Journal of Family Medicine and Primary Care, 13(3), 1012-1019. doi: 10.4103/jfmpc.jfmpc_1329_23

Arunachalam, S., Shetty, A., Devi, S., Karthick Murugesan, K., & Rajendran, S., (2020): Knowledge and Practice on menstrual hygiene among specially abled (Deaf & Dumb) adolescent Girls at selected centres in Bhubaneswar, Odisha State -A Pilot Project. European Journal of Molecular & Clinical Medicine Vol.(07), No.(03)

Boakye-Yiadom, A., Aladago, D. A., Beweleyir, J., Mohammed, H. B., Salifu, M. F., & Asaarik, M. (2018). Assessing the knowledge, attitude and practice of menstrual hygiene management among junior high schools adolescent females in the Yendi municipality in the northern region of Ghana. European Scientific Journal ESJ, 14(36).doi:10.19044/esj.2018.v14n36p467

Enoch, A., Nadutey, A., Afful, B., &

Anokye, R. (2020). Menstrual hygiene management: Challenges and coping strategies for adolescents with disabilities in the Kumasi metro of Ghana. Disability, CBR & Inclusive Development, 31(2), 77. doi:10.47985/dcidj.364

Fatima, G., Majeed, R., & Shahzadi, A. (2023). Knowledge, attitude and practice regarding menstrual hygiene among adolescent girls of rural community in Lahore. NURSEARCHER (Journal of Nursing & Midwifery Sciences), 62-66. doi:10.54393/nrs. v3i02.64

Ghimire, S., Gahatraj, R., Shrestha, N., Manandhar, S., & Dhital, R. (2024). Effects of health education intervention on menstrual hygiene knowledge and practices among the adolescent girls of Pokhara metropolitan, Nepal. PLOS ONE, 19(9), e0291884. doi: 10.1371/journal.pone.0291884

Mahazam, A., El Magrabi, N., & Ahmed, R. (2023). Knowledge and reported practice of visually impaired el-nour school female students about menstrual hygiene at Sohag Governorate. Assiut Scientific Nursing Journal, 0(0), 0-0. doi:10.21608/asnj.2023.229615.1656

Mahmoud, S., & Ibrahim, M. (2020). Effectiveness of educational sessions on reproductive health among blind and deaf students at Zagazig city. American Journal of Nursing Research, 7(2), 245-253. doi:10.12691/ajnr-8-2-13

Mahmoud, S., & Sabbour, M. (2021). Educational program regarding reproductive health for handicapped adolescents in Sharkia Governorate. Egyptian Journal of Health Care, 12(3), 456-470. doi:10.21608/ejhc.2021.191615

Onubogu, U., Umeh, M., Mbachu, N., Nwazor, C., Ofiaeli, C., Nwagbara, E., & Ajator, C. (2024). Menstrual hygiene practices of adolescent secondary school girls in rural Anambra communities. Women's Health, 20. doi:10.1177/17455057241228204

Parasuraman, G., Vijay, V., Balaji, S., Nisha, B., Dutta, R., Jain, T., & Eshwar, A. (2022). Impact of health education intervention on menstruation and its hygiene among urban school-going adolescent girls in Thiruvallur, Tamilnadu. Journal of Family Medicine and Primary Care, 11(9), 5271-5276. doi: 10.4103/jfmpc.jfmpc_46_22

Sharma, M., Sharma, K., Pandey Bista, A., Subedi, S., & Lamichhane, S. (2020). Knowledge on menstruation and

menstrual hygiene practices among adolescents girls of selected schools, chitwan. Journal of Chitwan Medical College, 10(1), 69-73. doi:10.54530/jcmc.151

Soliman, F., Essa, H., & Elbialy, A. (2022). The effect of premenstrual syndrome among adolescent nursing female students on their quality of life. Tanta Scientific Nursing Journal, 24(1), 252-273. doi:10.21608/tsnj.2022.221605

Soliman, S., Shenouda, M., & El Shair, E., (2021): Effect Of Assistive Technology On Knowledge And Practices Of Hearing- Impaired Adolescents Regarding Reproductive Health. Webology (ISSN: 1735-188X) Volume 18, Number 6