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Knowledge and Practices of Menstrual Hygiene among Adolescent Schoolgirls in Jordanian Badia Region: A Field Study

Yasmeen Qasass, RN, MSN [1]; Mohammed ALBashtawy, RN, PhD, MPH [2]; Khitam Ibrahem Mohammad, RN, PhD, MSN [3]; Shaher H. Hamaideh [4]; Wafa'a Ta'an, RN, PhD [5]; Ahmad Rayan, PhD [6]; Jehan Hamadneh, PhD [7]; Shereen Hamadneh, PhD [8]; Khetam AL-Awamreh, RN, PhD [9]; Ahmad Ayed, RN, PhD, MSN [10]; Abdullah Alkhawaldeh, RN, PhD, MSN [11]; Asem Abdalrahim, PhD [12]; Eman M. Harb, RN, PhD, MSN [13*]; Muna Alkharabsheh, PhD [14]; Bayan ALBashtawy, MD [15]

1 *Princess Salma Faculty of Nursing, Al al-Bayt University, Al-Mafraq, Jordan.*
2 *Professor, Department of Community and Mental Health, Princess Salma Faculty of Nursing, Al al-Bayt University, Al-Mafraq, Jordan.*
3 *Professor, Department of Midwifery, Faculty of Nursing, Jordan University of Science & Technology, Irbid, Jordan.*
4 *Community and Mental Health Nursing Department, Faculty of Nursing, The Hashemite University, Zarqa, Jordan.*
5 *Associate Professor, Community and Mental Health Nursing Department, Faculty of Nursing, Jordan University of Science and Technology, Irbid, Jordan.*
6 *Faculty of Nursing, Zarqa University, Zarqa, Jordan.*
7 *Associate Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, Jordan University of Science and Technology, Irbid, Jordan.*
8 *Associate Professor, Department of Maternal and Child Health, Princess Salma Faculty of Nursing, Al al-Bayt University, Al-Mafraq, Jordan.*
9 *Associate Professor, Department of Maternal and Child Health, Princess Salma Faculty of Nursing, Al al-Bayt University, Al-Mafraq, Jordan.*
10 *Arab American University, Faculty of Nursing, Palestine.*
11 *Associate Professor, Department of Community and Mental Health, Princess Salma Faculty of Nursing, Al al-Bayt University, Al-Mafraq, Jordan.*
12 *Assistant Professor, Department of Community and Mental Health, Princess Salma Faculty of Nursing, Al al-Bayt University, Al-Mafraq, Jordan.*
13 *Assistant Professor, Department of Community and Mental Health, Princess Salma Faculty of Nursing, Al al-Bayt University, Al-Mafraq, Jordan. * Corresponding Author. Email: dr.eman@aabu.edu*
14 *Nursing College, Al-Balqa Applied University, Jordan.*
15 *Bachelor of Medicine and Surgery, Ministry of Health, Irbid, Jordan.*

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ABSTRACT

Background: Hygiene throughout the menstrual cycle is a significant public health concern, yet it is not recognized or appropriately addressed in many parts of Jordan. ***Purpose:*** The study aims to assess the level of knowledge and practices of menstrual hygiene among adolescent schoolgirls in the Jordanian Badia region. ***Methods:*** A descriptive cross-sectional study was conducted from February to March 2022. Data was collected from a convenience sample of 550 girls aged 12 to 18 years from six schools for girls in the Badia region using a questionnaire that assessed knowledge and practices of the menstrual cycle. Descriptive statistics (mean, standard deviation, frequency, percentage) and multivariable logistic regression analysis were used to determine the predictors of the

level of knowledge and practices of the menstrual cycle. ***Results:*** The mean age of the participants was 15.5 years. About 65% of the adolescent schoolgirls have adequate level of knowledge. Regarding practices, around 58% of the adolescent schoolgirls have a poor level. The highest score was for" Schoolgirls should have a discussion with their mothers about menstruation and what to do during their periods", while the lowest score was for "If she has to, she will have to change the pads at school". In multivariable analysis; age >16 [OR = 2.10, 95% C.I (1.91–2.23)], mothers' highest level of education [OR = 2.32, 95% C.I (2.25–2.39)], and family income [OR = 1.71, 95% C.I (1.58–1.83)] were the predictors of safe knowledge and practices of the menstrual cycle. Besides, age >16 [OR = 2.21, 95% C.I (2.11–2.33)], mothers' highest level of education [OR = 2.89, 95% C.I (2.69–2.92)], and family income [OR = 2.01, 95% C.I (1.90–2.15)] were the predictors of practices of the menstrual cycle. ***Conclusion:*** Overall, the adolescent schoolgirls are reasonably knowledgeable of menstrual hygiene. On the other hand, the girls' overall level of practices was poor. So, menstrual hygiene knowledge and practices need to be improved by educating girls about menstruation and menstrual hygiene before menarche in order to protect them against Reproductive Tract Infections (RTIs). ***Implications for Nursing:*** There is a need to teach girls about the importance of personal hygiene to have confidence in themselves.

Keywords: Knowledge, Practices, Menstrual hygiene, Adolescents, Schoolgirls.

What does this paper add?

1. There is a need to teach girls about the importance of personal hygiene to have confidence in themselves.
2. Personal hygiene is also essential because it increases an individual's ability to be healthy, active, and prosperous.

Introduction

An adolescent is any person between ages of 10 and 19 years (World Health Organization (WHO), 2014). Adolescence is a critical period in which females prepare and adjust themselves to manage their menstrual bleeding safely and cleanly (Belayneh & Mekuriaw, 2019). It is also the transitional time that females often join different environments, such as high school, and plan for their next stage in life (adulthood period) (Belayneh & Mekuriaw, 2019).

Adolescence is also a period of rising sexual feelings, and individuals must learn to regulate and direct sexual impulses. Adolescents' difficulties may be solved by addressing them before they become insurmountable. In contrast, others see adolescence as a nerve- wracking phase in which adolescents suffer from several psychological problems (Bhattacharya et al., 2019).

The menstrual cycle is associated with physiological changes during the female life cycle (Bhattacharya et al., 2019; Redman et al., 2003). It involves changes in a girl's body, which aim to prepare the body to be pregnant every month (Adkisson et al., 2010; Walpurger et al., 2004).

Girls must maintain their menstrual hygiene during the menstrual cycle, because the term "hygiene" involves "cleanliness," which means the method of different hygiene behaviors, which have a significant role in maintaining public health and limiting the transmission of diseases (Bhattacharya et al., 2019). Personal hygiene is one of the essential themes in keeping people's general health and a tool for the individual's and group's cultural and social development in many societies (Balogun, 2015). It supports a healthy, disease-free existence and is achieved by applying effective procedures and strategies based on solid healthcare principles (Bhattacharya et al., 2019). Hygiene is maintained throughout the cycle, including sanitary pads and other discharge and laundry items. Before girls reach puberty, it is necessary to properly dispose of worn, soiled sanitary items in order to prevent infections and other health effects (Balogun, 2015; Bhattacharya et al., 2019). Although menstruation is a female physiological process, many social and intellectual taboos surround it (Belayneh & Mekuriaw, 2019); for example, it is considered unclean and dirty. These taboos lead to inaccurate and unsafe health practices and increased risks of girls contracting gynecological diseases and infection, which could affect the quality of their social and academic life (Liu et al., 2004).

Literature Review

In developing countries, sociocultural restrictions associated with the cycle affect changing the approach to correct practices and private hygiene strategies

throughout the menstrual cycle (Belayneh & Mekuriaw, 2019). Girls are at risk of infection due to a lack of knowledge about basic menstrual hygiene practices (Alharbi et al., 2018). It can also adversely affect students' academic performance, leading them to drop out of school (Davis et al., 2018). Most underdeveloped countries have a lax attitude to menstrual hygiene management, which has a substantial impact on girls (United Nations Population Fund, 2019).

Hygiene throughout the menstrual cycle is a significant public health concern, yet it is not recognized or appropriately addressed in many parts of Jordan (Jordanian Department of Statistics JDOS, 2021). As a result, this study was carried out to evaluate the level of knowledge and practices of menstrual hygiene among adolescent schoolgirls aged 12 to 18 years in the Badia region of Al-Mafraq, Jordan.

The need to be clean and tidy may be instilled in children from an early age, although the benefits of doing so can only be realized as a person grows older (Albashtawy & Hasna, 2012; Paliwal et al., 2014). Marvan and Molina-Abolnik (2012) studied Mexican adolescents' experience of menarche and attitudes toward menstruation. They found that menarche is also a significant event in the critical stage of emotional development for adolescent girls dealing with issues such as self-image, identity, and peer pressure. By 18, an estimated 11% of teenagers suffer from depression, with females being twice as likely as males to experience it. In addition, during their periods, many adolescent females report feeling depressed, anxious, and unable to focus (Fernandez Castelao et al., 2013).

Menstruation is a taboo in some cultures, even among close relatives and friends (Belayneh & Mekuriaw, 2019). In these societies, discussing menstruation is considered shameful. Therefore, menarche is associated with various negative emotions, including humiliation, embarrassment, and shame (Mutaqin, 2019; Vashisht et al., 2018). In addition, lack of menstrual preparation, loss of childhood, low self-esteem, and lack of support and understanding can lead to negative feelings about menarche (Kaur et al., 2018; Michael et al., 2020; Mutaqin, 2019).

According to the Jordanian Department of Statistics (JDOS, 2021), community attitudes toward menarche and menstruation may aid in the healthy transition from childhood to womanhood (women aged 18-39). An accurate understanding of the natural process of menstruation is necessary to accept it as a typical element of being both a mother and a woman. In various cultures, girls' preparation for menarche has long been considered essential to a happy, stable, and productive life (Kaur et al., 2018; Michael et al., 2020).

Deshpande et al. (2018) conducted a study to analyze teenage girls' knowledge and views regarding menstruation and their sources of information and personal cleanliness. The researchers employed a cross-sectional design and implemented the study in India. Pre-tested questionnaires were used to collect the information needed for the study. A total of 100 participants completed the survey. The results showed that menstrual hygiene in adolescent girls was deficient, recommending educating them on the fundamentals of menstruation and good hygiene practices. In another study conducted by Kumari et al. (2021) to assess adolescent females' menstruation knowledge and practices in India, 150 girls were included in the study's sample. The results showed that only 48.67% of the participants were aware of menstruation before menarche; their friends (53.33%) were the most important source of information about menstruation, followed by mothers. This implies that adolescent girls have less knowledge of menstruation (Kumari et al., 2021). Srivastava et al. (2016) conducted a cross-sectional study among 750 school-aged adolescent females from rural and urban areas in India. The average age of menarche was 14.33 years, and the girls learned about the menstrual cycle from a variety of sources, including their mothers (34.6%), friends (19.4%), and sisters (16.8%). Most adolescent girls reported menstrual problems (61.25%). Periods are challenging for women, since they affect both their physical and mental health. During the premenstrual period, hormonal variations activate multiple brain pathways that induce somatic (e.g. pain and swelling) and psychological (e.g. negative affect and mood) symptoms. Muscle stiffness, cramps, painful breasts, food cravings, mood swings, irritability, weariness, headache, and swelling are all symptoms of blood loss (Rohatgi & Dash, 2023; World Bank, 2022).

Research Aim

The study aimed to assess the level of knowledge and practices of menstrual hygiene among adolescent schoolgirls aged 12 to 18 years in the Jordanian Badia region.

Methods

Design

A descriptive cross-sectional study was conducted in the Badia region of Al-Mafraq among young girls between 12–18 years of age.

Setting and Population

The sample was made up of girl students from grades seven to twelve; their age range was between 12 and 18 years. This study was conducted in six randomly selected public schools among adolescent schoolgirls in the Badia region of Al-Mafraq, Jordan. The Jordan Badia region extends from north to south in the eastern part of the country and covers 72,660 km^2, equivalent to 81.3% of Jordan's total area (89,400 km^2). The region is divided into three geographical areas: northern Badia, which constitutes 35.7% (25,930 km^2) of the total Badia area; central Badia, which constitutes 13.3% (9634 km^2); and southern Badia, which constitutes 51.0% (37,096 km^2) (The Ministry of Interior, 2022).

Exclusion Criteria

Female students who (a) do not fall within the 12–18 age range, (b) decline to participate in this study, (c) have not obtained signed parental consent, and (d) have any acute or chronic condition that would limit the ability of the student to participate in the study were excluded from participation.

Sample Size

The sample size was estimated using the formula of Thomson KS. This formula requires a minimum sample size of 380 students (Thompson, 2012). The principals of the six schools were contacted, to facilitate the procedures for collecting data and distributing the questionnaires to the students. Participants had one opportunity to receive the questionnaire, and they were asked to return it the next day. Of the 991 females from six public schools in the Jordanian Badia area, 725 females have accepted to fill out the questionnaires, with a response rate of 73.2%.

Ethical Considerations

Approval to conduct this study was obtained from the Institutional Review Board (IRB) at Al al-Bayt University (23/141/2021, 28.1.2021). To maintain confidentiality, the questionnaire did not include personal information about the student, such as name, phone number, and other details. Access to the data collected is available only to the researchers.

Data Collection

The data was collected using a questionnaire consisting of three parts: Part one (demographic data) included general information about the participants, such as age, grade, father's and mother's work, education level, and the total family's monthly income. Part two (knowledge related to hygiene during the menstrual cycle) utilized a tool developed by Michael et al., (2020) with eight items: What is menstruation? What is the cause of menstruation? From which organ does the menstrual blood discharge? At what age do you think girls usually get their first period? Do you know how to use a sanitary pad? Do you know that girls should have a more nutritious diet during their periods? What is the average duration of girls' menstruation flow, and do you think that the menstrual blood is unhygienic? These items were measured on a yes/no scale or multiple choice. A team of formal translation specialists translated the instrument from English into Arabic, and then another team with expertise in the same area analyzed it. Moreover, face validity and content validity were established; the questionnaire was declared reliable with an acceptable (0.8) Cronbach's alpha value (Michael et al., 2020). Part three (participants' practices of personal hygiene) consisted of ten questions, with responses measured on a five-point Likert scale from 1 to 5, representing the following: 1: strongly disagree, 2: disagree, 3: uncertain, 4: agree, and 5: strongly agree. The questionnaire was developed and modified based on the related literature (Al Mutairi & Jahan, 2021; Michael et al., 2020; Yadav et al., 2017). Face validity and content validity were established by seven professors working in the field of community health, adolescence, and child healthcare; their opinions were taken into consideration before the pilot study.

Piloting

The pilot study was conducted with 30 participants from two schools. The results of the pilot study were not included in the final study. The objective of the pilot program was to identify any problems or obstacles to the data collection procedure, confirm the appropriateness of the items in the questionnaire, and enable quality improvement. This step assisted the researchers in assessing and ensuring clarity and knowledge of the

questions' wording and phrases from the participants' perspectives. The feedback showed that the items were clear, comprehensive, appropriate, and easy to complete.

The six school principals were first contacted as part of the data collection process. The researchers provided the students with questionnaires and detailed the data-gathering processes to make the process easier. After their parents signed the consent forms, the participants were asked to complete the questionnaires, which they had the chance to return the following day.

Statistical Analysis

The Statistical Package for Social Sciences (SPSS), version 26, was adopted, and the data was entered and analyzed. Data entry was checked twice to prevent errors. The data was then scanned for any outliers or missing data, with the trend, minimum, maximum, and frequency measures. Finally, descriptive statistics and multivariable logistic regression analysis were used to determine the predictors of the level of knowledge and practices of the menstrual cycle.

Results

991 females were invited to engage in this study. 725 females have accepted to fill out the questionnaires; 550 questionnaires were valid and completed to be analyzed, and 175 were excluded, because they did not include answers to all items of the questionnaire. The socio-demographic characteristics of the study respondents are represented in Table 1. The mean age of the respondents was 15.5 years (SD ±1.87). The age distribution has included three categories: females younger than 14 years old (18%), 14-16 years' females (19%), and females older than 16 years (63%). Regarding the education level of girls' mothers, the majority of mothers (n = 295, 54%) were illiterates, 162 (29%) of mothers have an elementary or secondary level of education, and 93 (17%) have higher than secondary education.

Table 1. Characteristics of the sample (n = 550)

General information and socio- demographic data	Indicator	Total N	%
Number of female students in schools from the seventh to the twelfth classes		1201	100%
Number of invited female students who have a consent form from their parents and are interested in participating	Out of 1201	991	83%
Number of printed and distributed questionnaires		991	100%
Number of questionnaires answered and received	Out of 991	725	73%
Number of invalid questionnaires	Out of 725	175	24%
Number of questionnaires to be analyzed	Out of 725	550	76%
Age mean (years)	15.5		
Age std. deviation	1.87		
Age groups	< 14 years	101	18%
	14-16 years	102	19%
	>16 years	347	63%
Mother's level of education	Illiteracy	295	54%
	Secondary and lower	162	29%
	More than secondary	93	17%
Father's occupation	Employed	410	75%
	Unemployed	140	25.4%
Mother's occupation	Employed	303	55%
	Unemployed	247	45%
Family monthly income	Sufficient for the basic needs of the family	303	55%
	Insufficient for the basic needs of the family	200	36%
	Sufficient for the basic needs with savings	47	9%

Furthermore, results found that 75% (n = 410) of the girls' fathers currently have work, while 25% (140) of them have no work. Meanwhile, the results revealed that 55% (n = 303) of girls' mothers were employed, and

45% (n = 247) were unemployed (homemakers).

Regarding the financial status, more than a half of the participants (n =303, 55%) reported that their total monthly income is insufficient for the family's basic needs, whereas 200 (36%) reported income sufficiency for the basic needs of the family. Only 47 (9%) reported that their income is sufficient for their basic needs with savings.

Table 2 shows that an overall percentage of 65% corresponds to adequate level of knowledge of menstrual hygiene. Table 3 entered ten practice indicators to assess the level of major menstrual hygiene practices. Multivariable logistic regression analysis of knowledge and practices shows that the age groups of more than 16 years, mothers' highest level of education, and sufficient family income, were the predictors of safe knowledge and practices of the menstrual hygiene (Table 4).

Table 2. The level of knowledge for adolescent schoolgirls in the Badia region

Question	Answers	Number	%	*Level of knowledge
1- What is menstruation?	Physiological process	350	63.6%	Adequate
	A disease	20	3.6%	
	Curse of God	49	8.9%	
	Other	131	23.8%	
2- What is the cause of menstruation?	Hormones	359	65.2%	Adequate
	Curse of God	53	9.6%	
	A disease	26	4.7%	
	Other	112	20.3%	
3- From which organ does the menstrual blood discharge?	Uterus	347	63%	Adequate
	Vagina	87	15.8%	
	Bladder	19	3.4%	
	Abdomen	97	17.6%	
4- At what age do you think girls usually get their first period?	10 - 12	5	0.9%	Adequate
	>12 - 14	357	64.9%	
	>14 - 18	188	34.1%	
5- Do you know how to use a sanitary pad?	Yes	367	66.7%	Adequate
	No	183	33.2%	
6- Do you know that girls should take a more nutritious diet during their periods?	Yes	367	33.2 %	Poor
	No	183	66.7%	
7-What is the average duration of menstruation flow at the female (per day)?	4-6 (days)	353	64.1%	Adequate
	>6-8(days)	96	17.4%	
	>8-10(days)	101	18.3%	
8-Do you think the menstrual blood is unhygienic?	Yes	362	65.8%	Adequate
	No	188	34.1%	

* The level of knowledge is assessed as; poor <60%, adequate 60% - 80%, good >80%.

Discussion

This study demonstrates that the mean age at menarche of the participants was 15 years, which is similar to the study of Deo and Ghattargi who emphasized that the age of menarche in their study ranged between 12 and 17 years with the maximum number of participants between 13 and 15 years of age (Deo & Ghattargi, 2005), while in rural north Karnataka region, a study conducted among girls indicated that the mean age of menarche was 13.45 years (Patil & Udgiri, 2016).

A higher prevalence of 65% about knowledge about menstruation before menarche was found in the current study. Similarly, a higher prevalence of 64%, and 60.53%, regarding knowledge about menstruation before menarche was found in past studies (Dhingra &

Kumar, 2009; Hagawane et al., 2021).

The analysis revealed that the chosen age group was primarily related to the presence of the menstrual cycle, despite rejection by some sample members that was attributed to feelings of shame and social factors (JDOS, 2021; Kumari et al., 2021). Most participants were from families where the mother was illiterate. Moreover, their tendency to do household chores could be related to one of the Badia social community values of education, since, in the Badia regions, the vast majority of the community tends to instruct girls to work at home instead of receiving education (JDOS, 2021). Furthermore, parental limited awareness, knowledge, education, and training can negatively affect their ability to describe and communicate correct information about personal hygiene for their daughters, including menstrual hygiene (Assefa & Kumie, 2014; Buda et al., 2018; Lazakis, 2021).

Table 3. Level of practices among schoolgirls in the Badia region (n=550)

Factor	Answer					* Level of practices
	Strongly agree N (%)	Agree N (%)	Uncertain N (%)	Disagree N (%)	Strongly disagree N (%)	
1-Sanitary pads sold in stores should be used during menstruation instead of cloth.	245 (44.5%)	208 (37.8%)	11 (2%)	55 (10%)	31 (5.6%)	Adequate
2- Failure to clean the external genitalia during menstruation increases the chance of diseases.	87 (15.8%)	72 (13%)	24 (4.3%)	359 (65.2%)	8 (1.4%)	Adequate
3- An antiseptic should be used to clean the external genitalia, not just water.	36 (6.5%)	48 (8.7%)	97 (17.6%)	175 (31.8%)	194 (35.2%)	Adequate
4- Sanitary pads absorb blood and secretions during menstruation better than other routine clothes.	335 (60.9%)	77 (14%)	26 (4.7%)	84 (15.2%)	28 (5%)	Adequate
5- If she has to, she will have to change the pads at school.	139 (25.2%)	145 (26.3%)	109 (19.8%)	41 (7.4%)	116 (21%)	Poor
6-Schoolgirls should have a discussion with their mothers about menstruation and what to do during their periods.	342 (62.1%)	124 (22.5%)	4 (0.7%)	75 (13.6%)	5 (9%)	Good
7- Schoolgirls have to talk to their sisters and friends about their periods and what to do when they come.	273 (49.6%)	124 (22.5%)	32 (6.5%)	22 (4%)	99 (18%)	Adequate

8- One of the mother's responsibilities is to teach her daughters all the details of the menstrual cycle and the methods of cleaning and sterilization that must be done.	300 (54.5%)	69 (%12.5)	23 (4.1%)	87 (15.8%)	71 (12.9%)	Adequate
9-Schoolgirls should be educated about menstruation, cleaning, and disinfection practices that should be performed.	298 (54.1%)	71 (12.9%)	28 (5%)	82 (14.9%)	71 (12.9%)	Adequate
10- Schoolgirls will be educating their future daughters about the menstrual cycle and the cleaning and disinfection practices that should be followed.	206 (37.5%)	247 (44.9%)	8 (1.5%)	49 (8.9%)	40 (7.3%)	Good

***** The level of practices is assessed as; poor <60%, adequate 60% - 80%, good >80%.

Table 4. Multivariable logistic regression analysis of knowledge and practices of the menstrual cycle

Variable	Knowledge Odd ratio (Confidence interval)	Practices Odd ratio (Confidence interval)
Age groups (years)		
< 14 years	1.00	1.00
14-16	1.56 (1.43-1.67)	1.80(1.70-1.91)
>16	2.10(1.91-2.23)	2.21(2.11-2.33)
Mother's level of education		
Illiteracy	1.00	1.00
Secondary and lower More than secondary	1.22(1.12-1.38)	1.62(1.55-1.68)
	2.32(2.25-2.39)	2.89(2.69-2.92)
Family income (monthly)		
Sufficient for the basic needs of the family Insufficient	1.00	1.00
for the basic needs of the family Sufficient for the basic	1.44(1.29-1.51)	1.93(1.84-2.11)
needs with savings	1.71(1.58-1.83)	2.01(1.90-2.15)

Regarding the family income variable, the results showed that it was insufficient to meet the basic needs of about two-thirds of the families. This constitutes an obstacle to providing essential things and supplies related to personal hygiene. Researchers attribute the reason to the fact that fewer job opportunities exist in these areas (Egeonu et al., 2018). These findings are similar to those of Lazakis (2021), who focused on personal hygiene and its causes, and Kaur et al. (2018), who found that hygiene practices correlate with the family's income.

Because the study sample had a basic understanding of the menstrual cycle and its causes as a female, the vast majority of the answers to questions about the idea of menstruation tended to lead to the fact that menstruation is a physical and physiological activity (Assefa & Kumie, 2014; Buda et al., 2018). The majority of the sample responses indicate that the reasons are hormonal, and we find that there is an agreement in a part of the study sample upon that the menstrual cycle is a curse from God (Hançer Aydemir, 2020). In the sample's answers to the question" From which organ does menstruation come?" and the age of menstruation, the answers came with a high percentage of participants understanding the concept of time and signs of puberty. These results are attributed to the existence of basic materials taught in schools that give students an accepted awareness of this result, which is consistent with findings of previous studies (Kaur et al., 2018). In the question of the best use of sanitary napkins, the

results were positive in a high percentage, with about two-thirds of the respondents answering "yes," and this result is attributed to the knowledge that they have in these matters because of their social lives or from school (Egeonu et al., 2018).

Losing an amount of blood during menstruation affects health, and the respondents had a straightforward answer about the period and duration of menstruation. The answer was attributed to the average age, which could be the reason for knowledge (Hançer Aydemir, 2020). Choosing the yes answer for that menstrual blood is unhygienic reinforces the importance of studying personal hygiene and lays the groundwork for discovering ways to maintain general hygiene during menstruation (Buda et al., 2018; Egeonu et al., 2018).

The participants had adequate knowledge of the unacceptability of using disinfectants. They preferred to clean with water rather than with disinfectants. This result can be explained by water being the best general disinfectant in terms of general health, as they learned from their peer groups and parents (ALBashtawy, 2012).

The participants' tendency to answer that sanitary napkins absorb blood and secretions during menstruation better than other routine clothes comes from the vast majority of the study sample, and the majority rejected the principle of change in school. The answer was explained by the possibility of the unavailability of pads, and the majority felt that it was a shame that this was done in schools (Egeonu et al., 2018).

Relating answers to whether girls talk to their parents during menstruation, whether they inquire from their mothers about menstruation, and what a girl does during her period, the majority of the answers said that girls accept advice from their mothers. This result is attributed to the fact that girls can progress and ask for any information that they need concerning menstruation (Egeonu et al., 2018).

As for the girls' tendency to talk about matters of life with their friends and sisters, the vast majority of them were in the positive direction in the answer (Kaur et al., 2018; Michael et al., 2020). The participants answered that the primary responsibility is on the mother in matters of knowledge about menstruation and the menstrual cycle. However, there is a category of answers, constituting a much smaller part, that believes the responsibility not to be on the mother. This result is attributed to the knowledge that the participants saw fit to gain from individuals who have experiences with and expertise in menstruation, and here they turned to the mother (Egeonu et al., 2018).

There must be prior knowledge about personal hygiene, especially before menstruation. This was confirmed by the girls' answers to the need to educate the students about the practices of menstruation and hygiene that must be carried out, which are based primarily on maintaining public hygiene (Pérez Pico et al., 2022). Furthermore, the sample tended to have future education by mothers for their daughters, and this indicates that health awareness is primarily inherited, which is gained through periods and future advice through personal experience. These answers are attributed to the fact that there is a tendency among the respondents to receive knowledge about matters of personal hygiene from their schools and communities (Coast et al., 2019; DeMaria et al., 2019; Paphitis & Kelland, 2018).

The study revealed that most menstrual hygiene safety practices are not well followed. It indicates weakness in some aspects.

The present study found that age group of more than 16 years, mothers' highest level of education, and sufficient family income factors have an association with safe knowledge and practices of the menstrual hygiene. A recent study indicated that factors significantly associated with girls' knowledge of the menstrual hygiene included age, grade level, residence, learning on menstrual hygiene, and knowledge of sanitary pads (Shumie & Mengie, 2022).

Limitations

This study was conducted among a sample of girls from northern Badia in Jordan. Further studies are encouraged to be conducted in other regions. The study used a cross-sectional descriptive design that would limit the generation of any causal inferences. In this study, the results are subject to self- report bias as the data was collected *via* a self-administered questionnaire.

Implications for Nursing

The results of the current study have important implications for community nursing practice: (a) There is a need to teach girls about the importance of personal hygiene to have confidence in themselves. (b) Because a clean person in a stable psychological state is often more attractive than an unclean and neglected person,

the female's psychological state may be reflected in her appearance. (c) Personal hygiene is also essential, because it increases an individual's ability to be healthy, active, and prosperous.

Conclusions

We conclude that the girls in the study sample learned about personal hygiene during the menstrual cycle from their mothers and that their mothers strengthened their knowledge experiences. Moreover, schoolgirls will be educating their future daughters about the menstrual cycle and the cleaning and disinfection practices that should be followed. On the other hand, the sample responses showed that the vast majority do not know that failure to clean the external genitalia during menstruation increases the chance of diseases.

Overall, the adolescent schoolgirls are knowledgeable. Additionally, the girls' overall level of practices was poor, and menstrual hygiene knowledge and practices need to be improved.

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Conflict of Interest

The authors have no conflict of interest to declare.

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