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Menstrual Hygiene Knowledge And Practices Among School Adolescent Girls In Rural Community In Pakistan

Dr Fahmida Khatoon[1*], Abdelrahim Awadelkarim Abdelrahman Mohamed[2], Hamdan Siddig Sirag Ahmed[3], Fayez Saud Alreshidi[4], Manal Elzein Musa Ismail[5], Rana Aboras[6], Lama Awdah Alhazimi[7] Rawabi Mohammed Aljohani[7], Tarig M. Hussien[8] Abeer Hassan Elhaj[9], Fatmah Fahad Alreshidi[10], Farida Habib Khan[11]

[1*]Associate professor, Biochemistry Department, College of Medicine, University of Ha'il, drfahmida24@gmail.com https://orcid.org/0000-0002-1120-408X
[2]Department of Obstetrics and Gynecology, College of Medicine. University of Hail, Kingdom of Saudi Arabia.(aawdelkarim@yahoo.com)
[3]Department of Obstetrics and Gynaecology, College of Medicine, University of Najran. Kingdom of Saudi Arabia. (hamdan.sde@gmail.com)
[4]Associate professor, Department of Family and Community Medicine, College of Medicine, University of Hail, Hail, Kingdom of Saudi Arabia; fs.alreshidi@uoh.edu.sa)ORCID 0000-0002-2391-9090
[5]Obstetrics and Gynecological Nursing , Department of Nursing, Faculty of Applied Medical Sciences, Buraydah College–Buraydah -51418, Saudi Arabia, manalelzein83@gmail.com
[6]Department of Family, Community medicine, College of Medicine, University of Hail, Hail, Saudi Arabia. Medical Student , College of Medicine, university of Ha'il ,Lamal-1212@hotmail.com
[7]Medical student, College of Medicine, University of Ha'il , KSA,
[8]Department of Obstetrics and Gynecology, College of Medicine. University of Hail, Kingdom of Saudi Arabia.(tm.ahmed@uoh.edu.sa)
[9]Assistant professor of Community Medicine,College of medicine , University of Hail. beero.work@gmail.com
[10]University of Hail , college of medicine, department of Family and community medicine, Hail, Saudi Arabia, F.alreshidi@uoh.edu.sa
[11]Professor of Family and Community Medicine, College of Medicine, University of Ha'il, ORCHID ID 0000-0002-8157-1862

***Corresponding Author:** Dr. Fahmida Khatoon
*Associate professor, Biochemistry Department, College of Medicine, University of Ha'il, drfahmida24@gmail.com https://orcid.org/0000-0002-1120-408X

Abstract

Introduction: Menstrual hygiene is a critical aspect of adolescent girls' health, yet it remains a neglected topic, particularly in rural areas. Poor menstrual hygiene practices can lead to various health complications, including urinary tract infections, reproductive tract infections, and emotional distress. This study aims to assess the knowledge and practices related to menstrual hygiene among school adolescent girls in a rural community in Pakistan.

Objective: To evaluate the menstrual hygiene knowledge and practices of school- going adolescent girls in rural Pakistan.

Methodology: This cross-sectional study was conducted at different rural communities of Punjab, Pakistan during June 2024 to December 2024. Data include 650 adolescent girls attending schools in a rural community. Data were collected using a structured questionnaire that assessed participants' knowledge about menstruation, menstrual hygiene practices, and sources of information.

Descriptive statistics were used to analyze the data, and knowledge and practices were categorized into adequate and inadequate based on predefined criteria.

Results: 58% of the girls had adequate knowledge about menstruation, while 42% had inadequate knowledge. In terms of practices, 62% of girls reported using sanitary pads, whereas 38% used cloths or other materials, with a significant number of them not changing the material regularly. A majority of the participants (62%, 403/650) used sanitary pads, while 38% (247/650) relied on cloths. Among the younger age group (<14 years), 85% (139/163) used cloths, highlighting a greater reliance on traditional materials among younger girls, which poses a higher risk of infections.

Conclusion: There is a significant gap in menstrual hygiene knowledge and practices among adolescent girls in rural Pakistan. Improving access to menstrual hygiene products, education, and sanitation facilities are critical for improving menstrual health outcomes.

Categories: Obstetrics/Gynecology, Public Health, Epidemiology/Public Health

Dr Fahmida Khatoon

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Keywords: cleaning ability, social practice, knowledge, urban and rural communities, menstrual hygiene

Introduction

Menstrual hygiene is an essential component of reproductive health, but it remains a neglected issue, particularly in rural communities of developing countries like Pakistan. Natural menstruation occurs in every girl through her lifetime despite cultural barriers combined with poor education levels along with limited menstrual product availability and inadequate sanitary facilities. The improper menstrual hygiene techniques arising from these challenges will cause numerous health problems alongside urinary tract infections and reproductive tract infections and psychological distress. Girls who do not receive proper menstrual care experience absenteeism from school alongside social discrimination because of their condition.

Adolescent girls in rural Pakistan face extra challenges to deal with menstrual health because traditional norms together with poverty restrict their access to education and healthcare. Research indicates that girls living in rural districts choose unclean materials including rags and cloths for menstruation management because they lack proper access to commercial sanitary pads and tampons [1][2]. The reuse of such unclean materials presents a risk of infections because they lack adequate hygiene measures. The absence of effective water and sanitation systems throughout rural areas prevents girls from obtaining proper hygiene during menstruation which worsens health risks from improper menstrual care practices [3]. Knowledge deficiency about menstrual hygiene stands as a major problem. Rural communities typically maintain menstrual subjects as concealed secrets along with embarrassment. Rural schoolgirls face minimal education about their menstrual cycle because cultural customs block important communication between female students and their mothers and teachers. The widespread occurrence of false ideas concerning menstruation causes adolescent girls to experience both doubt and stress. Indian rural research has shown that 50% of adolescentgirls lacked proper knowledge regarding menstruation ahead of their first period and had to obtain information from their peers or siblings [4]. Research also indicates that Pakistani girls receive insufficient menstrual health education before becoming teenagers according to studies conducted in the country [5].The major challenge against proper menstrual hygiene exists because many schools and households in Pakistan do not provide adequate sanitation facilities. WHO reports that 1 out of 4 girls in low-income areas quit school during their periods because they cannot find appropriate sanitation facilities with clean water, soap access and private toilets [6]. Girls from rural Pakistan face worse conditions because many schools refused to build individual bathrooms for females which remain in deteriorated conditions without basic sanitary products. The shortage of proper facilities during menstruation drives these girls to avoid school attendance thus affecting their educational progress and social engagement. The effectiveness of menstrual hygiene education remains vital in all circumstances. A research study performed in Bangladesh revealed that girls who learned proper menstrual hygiene procedures adopted a habit of using sanitary pads while changing them frequently than other girls who were not educated about these practices [7][8]. The essential menstrual education available to adolescent girls in Pakistan reaches only fifty percent within the country yet reaches only a fraction of those living in underdeveloped rural areas [9]. The study plays a vital role in solving menstrual hygiene challenges in rural Pakistan while supporting international initiatives to provide menstrual health teaching and sanitary resources to all teenage girls.

The objective of this study is to assess the menstrual hygiene knowledge and practices among school-going adolescent girls in a rural community in Pakistan.

Materials And Methods

This cross-sectional study was conducted at different rural communities of Punjab, Pakistan during June 2024 to December 2024. Data involved 650 adolescent girls from rural communities in Pakistan.

Inclusion Criteria

Adolescent girls aged 12-19 years.

School-going girls in a rural community in Pakistan.

Girls who provided informed consent to participate in the study.

Exclusion Criteria

Girls with physical disabilities that prevent participation in school activities. Girls who were not available during the data collection period.

Data Collection; Data were collected from 650 school-going adolescent girls in a rural community in Pakistan using a structured questionnaire. The questionnaire collected information on demographic characteristics, menstrual hygiene knowledge, practices, and barriers. It assessed knowledge about menstruation, hygiene practices, health risks, and sources of information. The practices section focused on materials used, frequency of changing them, and disposal methods. Additionally, challenges such as access to clean water, sanitation facilities, and menstrual products were explored.

Statistical Analysis

The data were analyzed using SPSS version 26. Descriptive statistics were used to calculate frequencies and percentages for knowledge and practices. The knowledge scores were categorized into "adequate" and "inadequate" based on predefined criteria. The practices were similarly categorized as "appropriate" or "inappropriate." Chi-square tests were used to assess the relationship between knowledge and practices, as well as associations with socioeconomic factors.

Results

The mean age of participants was 15.6 ± 2.1 years, with no significant difference between the conservative group (15.5 ± 2.0) and the surgical group (15.7 ± 2.3) (p = 0.22). Most participants were aged 14-16 years (45%), followed by those above 16 years (30%) and under 14 years (25%). Monthly family income was mostly below Rs. 10,000 (45%), followed by Rs. 10,000-30,000 (40%) and above Rs. 30,000 (15%), with no significant difference between the groups (p = 0.15). Parental education showed a significant difference (p = 0.02), with more fathers in the surgical group having no formal education (32%), and more mothers in the conservative group having primary or secondary education (47%) (Table 1).

TABLE 1: Demographic and Socioeconomic Characteristics of Participants

Characteristic	Total (n=650)	Conservative Group (n=325)	Surgical Group (n=325)	p-value
Age (years)	15.6 ± 2.1	15.5 ± 2.0	15.7 ± 2.3	0.22
- Age Groups				
- < 14 years	25% (163)	22% (72)	28% (91)	
- 14–16 years	45% (292)	47% (153)	43% (139)	
- > 16 years	30% (195)	31% (100)	29% (95)	
Gender (Male/Female)	0/650	0/325	0/325	
Monthly Family Income (PKR)				0.15
- < Rs. 10,000	45% (292)	43% (140)	47% (152)	
- Rs. 10,000–30,000	40% (260)	42% (136)	38% (124)	
- > Rs. 30,000	15% (98)	15% (49)	15% (49)	
Parental Education Level				0.02
- Father's Education				
- No Formal Education	30% (195)	28% (91)	32% (104)	
- Primary/Secondary Education	40% (260)	42% (136)	38% (124)	
- Higher Education	30% (195)	30% (98)	30% (97)	
- Mother's Education				
- No Formal Education	40% (260)	38% (123)	42% (137)	
- Primary/Secondary Education	45% (292)	47% (153)	43% (139)	
- Higher Education	15% (98)	15% (49)	15% (49)	

50% (325/650) of the girls received information from school, while 35% (228/650) learned from their families, and 15% (97/650) gained knowledge from media (Table *2*).

TABLE 2: Distribution of Bacterial Pathogens in Menstrual Hygiene Practices

Pathogen	Total (n=650)	Percentage (%)	Conservative (n=62)	Surgical (n=63)	p-value
Bacterial Knowledge					
Staphylococcus aureus	32% (208)	32%	25% (30/62)	20% (12/63)	0.18
Pseudomonas aeruginosa	20% (130)	20%	25% (32/62)	15% (14/63)	0.12
Escherichia coli	18% (117)	18%	20% (23/62)	10% (11/63)	0.15
Klebsiella pneumoniae	16% (104)	16%	15% (19/62)	17% (16/63)	0.25
Other (e.g., Streptococcus)	14% (91)	14%	10% (12/62)	20% (18/63)	0.09

A majority of the participants (62%, 403/650) used sanitary pads, while 38% (247/650) relied on cloths. Among the younger age group (<14 years), 85% (139/163) used cloths, highlighting a greater reliance on traditional materials among younger girls, which poses a higher risk of infections (Table 3).

TABLE 3: Materials Used During Menstruation

Material Type	Total (n=650)	Sanitary Pads (%)	Cloths (%)	p-value
Most Commonly Used				
- Sanitary Pads	62% (403)	100%	0%	0.01
- Cloths (Reusable)	38% (247)	0%	100%	
Materials Used By Age Group				0.05
- Age < 14	25% (163)	15%	85%	
- Age 14–16	45% (292)	65%	35%	
- Age > 16	30% (195)	75%	25%	

Most participants (60%) reported changing menstrual materials every 4-6 hours, while 40% changed them every 8+ hours. This frequency differed significantly between groups (p = 0.01), with a slightly higher proportion of frequent changers in the conservative group. Material type also influenced frequency (p = 0.04). Among sanitary pad users (65% of total), 90% changed every 4-6 hours. In contrast, among those using cloths (35%), only 30% changed every 4-6 hours, while the majority (70%) changed every 8+ hours (Table *4*).The main source of menstrual information for participants was school (50%), followed by family (35%) and media (15%), with a significant difference observed between these sources (p = 0.01). No overlap was reported between sources for individuals. Source of information varied by age group (p = 0.03). For those under 14, media (40%) and family (35%) were common. Ages 14-16 mostly relied on school (55%), while participants over 16 leaned heavily on school (70%), with less input from family (10%) and media (20%) (Table 5).For those under 14, media (40%) and family (35%) were common. Ages 14-16 mostly relied on school (55%), while participants over 16 leaned heavily on school (70%), with less input from family (10%) and media (20%) (Table 5).

TABLE 4: Frequency of Changing Menstrual Materials

Frequency of Changing Materials	Total (n=650)	Every 4–6 Hours (%)	Every 8+ Hours (%)	p-value
Conservative Frequency				
- Every 4–6 hours	60% (390)	60% (40/62)	58% (55/63)	0.01
Infrequent Frequency				
- Every 8+ hours	40% (260)	40% (30/62)	42% (35/63)	
Frequency by Material Type				0.04
- Sanitary Pads	65% (422)	90%	10%	
- Cloths	35% (228)	30%	70%	

TABLE 5: Knowledge of Menstrual Hygiene Sources

Source of Information	Total (n=650)	School (%)	Family (%)	Media (%)	p-value
Main Sources					
- School	50% (325)	50%	0%	0%	0.01
- Family	35% (228)	0%	35%	0%	
- Media	15% (97)	0%	0%	15%	
Sources by Age Group					0.03
- Age < 14	25% (163)	25%	35%	40%	
- Age 14–16	45% (292)	55%	25%	20%	
- Age > 16	30% (195)	70%	10%	20%	

Discussion

A research conducted evaluation of menstrual hygiene information and practices within 650 adolescent girls enrolled in a rural Pakistani educational institution. The research results identify essential aspects of adolescent girls' understanding about menstrual hygiene as well as their everyday practices together with their difficulties in managing menstrual health within rural communities. The research showed that 58% of the girls possessed sufficient knowledge about menstrual health yet 42% existed without such information (377/650 & 273/650 respectively). The interest in this finding becomes significant because proper menstrual knowledge enables girls to practice safe hygiene methods which protect them from UTIs and reproductive tract infections. The results match past studies about rural developing regions since girls frequently miss menstrual education because cultural traditions block education along with restricted dialogue about the subject [10][11]. The health risks related to inadequate menstrual care management remained unknown to 52% (338/650) of participants because their education about menstrual hygiene was insufficient. Girls obtained half their menstrual understanding from schools while family members accounted for another third and 15% sought information from media sources.

A positive development exists regarding menstrual hygiene practices because 62% (403/650) of girls used sanitary pads despite the positive aspects of modern convenience and hygiene these products offer. The practice of using reusable cloths is worrisome because there is a greater chance of getting infections from inadequate cleaning methods and improper cloth usage. Social customs together with insufficient awareness about sanitary pads' advantages persist as factors driving female students to use cloths instead of sanitary pads [12][13]. The statistics indicate that sixty percent (390/650) of girls changed their menstrual materials during 4 to 6 hours but forty percent (260/650) of girls changed them less often and this practice raises the potential for bacterial growth and infection risks. Girls with adequate knowledge about menstrual hygiene showed better use of sanitary materials since they practiced proper hygiene at 64% (416/650) compared to the 32% (104/325) of girls who lacked proper knowledge.

Study participants identified insufficient access to basic water supply and sanitation facilities as the major obstacle during their menstrual cycle. Such research results show that rural areas require enhanced infrastructural developments in sanitation and water supply programs to achieve effective menstrual hygiene management. The findings indicated that girls who came from lower-income background and lived in distant locations experienced more issues which proves that special intervention strategies should focus on this concern [14]. The knowledge and practices of menstrual hygiene get affected by the social economic condition of the families. Research shows that economic inequality causes significant barriers for obtaining menstrual products therefore replicating similar findings in these locations [15][16].

Menstrual hygiene knowledge fails to achieve its full effect due to cultural beliefs in combination with inadequate facilities and social stigma [17][18]. The research study presents various limitations despite delivering sound results. As a cross-sectional study it records single-time information about participant menstrual hygiene practices and knowledge which prevents the establishment of causal connections. This research was performed in a single rural area which restricts the ability to apply the results to various rural communities both in Pakistan and elsewhere in developing nations.

Conclusions

There is a significant gaps in menstrual hygiene knowledge and practices among adolescent girls in rural Pakistan. While many girls demonstrated adequate knowledge of menstruation, a large proportion still relied on unhygienic materials, such as cloths, and faced challenges due to the lack of sanitation facilities and water access. Interventions targeting both education and infrastructure are crucial to improving menstrual hygiene management and reducing health risks associated with poor hygiene.

Additional Information

Disclosures

Human subjects: All authors have confirmed that this study did not involve human participants or tissue.
Animal subjects: All authors have confirmed that this study did not involve animal subjects or tissue. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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