

Knowledge And Attitude of Adolescent Girl Toward Menstrual Hygiene in Selected Government Girl Secondary School Gusau, North-Western, Nigeria.

Mohammad B. Isah^{1*}, Aminatu Y. Dan Yaya

Department Of Obstetrics and Gynecology, Ahmad Sani Yariman Bakura Specialist Hospital Gusau, Nigeria.
Department Of Midwifery Education Ummul-Khairi College of Nursing Sciences, Gusau, Zamfara, Nigeria.

ABSTRACT

Background: Menstrual Hygiene Management (MHM) remain a significant public health and educational issue affecting adolescent girls, particularly in low- and middle -income countries. **AIM:** The objectives of the study were to determine the level of knowledge of adolescent girls regarding menstrual hygiene management, assess their attitudes toward menstrual hygiene management, and identify their sources of information on menstrual hygiene. **Materials and Methods:** A descriptive cross-sectional research design was adopted. The study population consisted of 222 adolescent girls, and a structured questionnaire was used for data collection. Data were analyzed using descriptive statistics, including frequencies and percentages, and the findings were presented in tables. **Results:** The findings revealed majority of respondents (46.8%) were aged 13–15 years, indicating most participants were in early adolescence. The predominant religion was Islam (89.2%), and the Hausa tribe constituted the majority (78.4%), reflecting the demographic profile of Gusau, Zamfara State. The majority of girls experienced menarche between 13-15 years (45.9%) and 10-12 years (43.2%). More than half of the respondents (55.9%) reported that they had never received any formal education on menstrual hygiene prior to this study. The findings also revealed that the majority of the respondents had good knowledge of menstrual hygiene management, while some still had misconceptions and negative attitudes toward menstruation. Mothers, teachers, and health workers were identified as the major sources of information on menstrual hygiene. **CONCLUSION:** The study concluded that although the respondents demonstrated satisfactory knowledge, there is a need to improve menstrual health education to promote positive attitudes and healthy menstrual hygiene practices. The study recommended regular menstrual health education programs in schools, improved access to sanitary materials and WASH facilities, and increased involvement of parents and healthcare professionals in adolescent reproductive health education.

Keywords: Knowledge, Attitude, Adolescent Girls, Menstrual Hygiene Management, Secondary Schools, Gusau.

Date of Submission: 06-10-2026

Date of Acceptance: 16-10-2026

I. INTRODUCTION

Menstruation is a normal physiological process that occurs in females of reproductive age as a result of hormonal changes in the body. It involves the periodic shedding of the uterine lining (endometrium) through the vagina when pregnancy does not occur. Menstruation usually begins during adolescence, between the ages of 10 and 16 years, and continues until menopause. The first menstrual period, known as menarche, marks an important milestone in female reproductive development and signifies the onset of fertility (World Health Organization [WHO], 2022). Menstrual Hygiene Management (MHM) refers to the use of clean menstrual materials to absorb or collect menstrual blood, changing these materials as often as necessary, washing the body with soap and clean water, and having access to facilities for proper disposal of used menstrual products. Effective menstrual hygiene management also includes access to accurate information, privacy, dignity, and supportive environments that enable girls and women to manage menstruation safely and confidently (United Nations Children's Fund [UNICEF], 2019). Menstrual Hygiene Management (MHM) remain a significant public health and educational issue affecting adolescent girls, particularly in low- and middle -income countries. Recent global estimates indicate that over 1.8 billion people menstruate worldwide, yet millions lack access to adequate menstrual health information, sanitary materials, and supportive environments (United Nations Population Fund, 2022). This gap is more evident among adolescent girls, especially in developing countries where socio-cultural barriers and economic constraints limit access to menstrual hygiene resources. Good menstrual hygiene management is essential for maintaining reproductive health and preventing infections such as urinary tract infections and reproductive tract infections (Ripal N Panchale et al., 2024). Poor menstrual hygiene practices may result from

inadequate knowledge, lack of access to sanitary products, poor sanitation facilities, cultural restrictions, and poverty. Knowledge refers to the understanding and awareness individuals possess about a particular subject. In this study, knowledge refers to adolescent girls' understanding of menstruation, its physiological basis, menstrual hygiene practices, menstrual cycle, and methods of maintaining personal hygiene during menstruation. Adequate knowledge enables adolescent girls to recognize menstruation as a normal biological process rather than a disease or curse (Rathoria R et al., 2024). Girls with sufficient knowledge are more likely to adopt healthy menstrual hygiene practices, including the regular changing of sanitary pads, proper washing of the genital area, hand hygiene, safe disposal of used menstrual materials, and seeking medical attention when abnormal menstrual symptoms occur (WHO, 2022 and Ghimire, S., et al. (2024). Several factors influence adolescents' knowledge of menstruation and menstrual hygiene. These include educational level, parental education, socioeconomic status, access to health information, school health education programs, peer influence, and media exposure. Mothers are often the primary source of menstrual information for adolescent girls, followed by teachers, health workers, friends, and social media (UNICEF, 2019., Rathoria R. et al., 2024).

Despite increasing awareness, many adolescent girls continue to have inadequate knowledge of menstruation before menarche. This lack of information often leads to fear, anxiety, misconceptions, embarrassment, and unhealthy hygiene practices. In many communities, menstruation remains a sensitive topic that is rarely discussed openly due to cultural and religious beliefs. Consequently, girls may enter puberty without adequate preparation or understanding of menstrual hygiene management (Aulia Khusnul Khotimah 2024). Studies have shown that school-based menstrual health education significantly improves adolescents' knowledge and promotes positive menstrual hygiene practices. Comprehensive reproductive health education empowers girls to understand menstruation, develop confidence, and manage their menstrual periods safely and hygienically (UNESCO, 2023). Addressing menstrual hygiene is crucial for achieving several sustainable development goals (SDGs), including health (SDG 3), education (SDG 4), gender equality (SDG 5), and water and sanitation (SDG 6) (Sommer M, et al., 2021). Ensuring adolescent girls have the knowledge, resources, and support to manage menstruation with dignity is essential for adolescent girls to ensure their empowerment. Proper MHM leads to better health outcomes, higher education attainment, and greater gender equality, all critical for sustainable development. Girls who manage their menstruation effectively are more likely to attend school regularly, participate in activities, and contribute to their communities. This increased participation will foster personal and professional development, contributing to the country's economic growth.

Attitude refers to an individual's feelings, beliefs, perceptions, and behavioral tendencies toward a particular issue. In this study, attitude refers to adolescent girls' perceptions and feelings about menstruation and menstrual hygiene management.

A positive attitude toward menstruation encourages healthy hygiene practices, confidence, school attendance, and social participation during menstruation. Girls with positive attitudes perceive menstruation as a normal physiological event and are more willing to discuss menstrual concerns with parents, teachers, or healthcare providers. (Etsay Woldu Anbesu and Dejen Kahsay Asgedom 2023).

Research indicates that positive menstrual attitudes improve when girls receive accurate menstrual health education before menarche. Schools, parents, healthcare professionals, and community leaders therefore play important roles in promoting positive attitudes and eliminating harmful myths associated with menstruation (WHO, 2022).

Sources of information refer to the various channels through which adolescent girls obtain knowledge regarding menstruation and menstrual hygiene management.

Parents, particularly mothers, remain one of the most important sources of menstrual information because they usually provide emotional support and practical guidance during menarche. Teachers also contribute significantly through health education programs conducted in schools. Aziz, A., et al. (2024).

Healthcare professionals, especially nurses and midwives, provide scientifically accurate information on menstrual physiology, hygiene practices, menstrual disorders, and reproductive health. Mass media, including television, radio, newspapers, and educational campaigns, contribute to menstrual health awareness. With increasing internet access, many adolescents also obtain menstrual information through social media platforms and health-related websites. While these platforms improve access to information, they may also expose adolescents to misinformation if the information is not obtained from reliable sources (UNESCO, 2023).

Peers also influence menstrual knowledge among adolescents. Friends often share experiences and practical advice; however, peer information may sometimes be inaccurate due to misconceptions and cultural beliefs. Religious organizations, community leaders, and non-governmental organizations also conduct menstrual health awareness programs that educate girls on proper menstrual hygiene management.

Current evidence suggests that adolescents who receive menstrual information from multiple reliable sources demonstrate better knowledge, healthier menstrual hygiene practices, and more positive attitudes than those who rely on a single source (WHO, 2022).

Overall, access to accurate, timely, and comprehensive menstrual health information is essential for improving menstrual hygiene management, reducing stigma, promoting school attendance, and enhancing the physical, emotional, and social well-being of adolescent girls.

II. MATERIALS AND METHODS

Study Design, Population and Area

A descriptive cross-sectional survey design was conducted among 222 adolescent girls in selected government girls' secondary school in Gusau, the capital of Zamfara State, Nigeria, and a structured questionnaire was used for data collection from 1st to 2nd week of July 2026. All consenting adolescents available at the point of data collection were considered eligible for enrollment into the study.

Sample Size Estimation, Sampling Technique and Data Collection

The sample size was statistically estimated at 222 According to Taro Yamane (1967) formula. A multi-stage sampling technique was used: **Stage 1:** Selection of Schools; A simple random sampling method (balloting) was used to select the participating secondary schools. **Stage 2:** Selection of Participants; A systematic random sampling technique was used to select adolescent girls from each school proportionately until the desired sample size was obtained. The instrument that was used for data collection was a structured self-administered questionnaire. A semi-structured interviewer-administered questionnaire was used to obtain information on the research variables based on the objectives of the study. The questionnaire was divided into four sections: **Section A:** Socio-demographic data (age, class, religion, etc.). **Section B:** Level of Knowledge of menstrual hygiene. **Section C:** Attitude toward menstrual hygiene. **Section D:** sources of information on menstrual hygiene Management. The questionnaire consists of approximately 25–30 items. The **validity** of the instrument was ensured through content and face validity. The questionnaire was reviewed by experts in public health, and research methodology. Corrections and suggestions were incorporated to ensure that the instrument accurately measures knowledge and attitudes toward menstrual hygiene. The **reliability** of the instrument was determined using the test-retest method. The questionnaire was administered to a small group of adolescent girls (about 10% of the sample) in a different but similar school. After two weeks, the same questionnaire was re-administered to the same group. The results were analyzed using Pearson's correlation coefficient. A reliability coefficient of 0.7 or above was considered acceptable.

Method of Data Collection: The data was collected using the following procedures: Permission was obtained from school authorities. The researcher visits the schools and explains the purpose of the study to participants. Questionnaires were distributed to respondents in their classrooms. Instructions were clearly given on how to fill the questionnaire. The researcher was allowed sufficient time (30–45 minutes) for completion. Completed questionnaires was collected immediately to avoid loss. The data collection process last for approximately 1–2 hours, covering all the available students.

Method of Data Analysis.

Data collected was analyzed using Statistical Package for Social Sciences (SPSS) or manual statistical methods. **Descriptive statistics:** Frequencies, percentages, mean, and standard deviation was used to summarize data. A decision rule of means 2.5 was agree and any item with a mean of less than 2.5 was regarded as disagree.

Ethical Consideration

Institutional ethical clearance was obtained from the Research and Ethical Committee. Ethical approval was granted and they were assured that all information collected will be treated with outmost confidentiality. Informed consent was also obtained from the participants before questionnaire administration.

III. RESULTS

Socio-demographic characteristics of participants

Table 4.1: Distribution of Respondents by Socio-Demographic Characteristics (N=222)

Variable	Category	Frequency	Percentage (%)
Age (Years)	10–12	48	21.6%
	13–15	104	46.8%
	16–18	58	26.1%
	Above 18 years	12	5.4%
Class	JSS1	30	13.5%
	JSS2	38	17.1%
	JSS3	42	18.9%
	SS1	45	20.3%
	SS2	40	18.0%

Religion	SS3	27	12.2%
	Islam	198	89.2%
	Christianity	22	9.9%
	Others	2	0.9%
Tribe	Hausa	174	78.4%
	Fulani	32	14.4%
	Yoruba	8	3.6%
	Igbo	4	1.8%
	Others	4	1.8%
Age at Menarche	Below 10 years	12	5.4%
	10-12 years	96	43.2%
	13-15 years	102	45.9%
	Above 15 years	12	5.4%
	Total	222	100%

The table shows that the majority of respondents (46.8%) were aged 13–15 years, indicating most participants were in early adolescence. The predominant religion was Islam (89.2%), and the Hausa tribe constituted the majority (78.4%), reflecting the demographic profile of Gusau, Zamfara State. The majority of girls experienced menarche between 13-15 years (45.9%) and 10-12 years (43.2%). More than half of the respondents (55.9%) reported that they had never received any formal education on menstrual hygiene prior to this study.

4.2 Knowledge of Menstruation and Menstrual Hygiene Management (Section B)

Table 4.2: Knowledge of Menstruation among Respondents (N=222)

Knowledge Item	Correct Response n (%)	Incorrect/Don't Know n (%)
Menstruation is a normal physiological process	186 (83.8%)	36 (16.2%)
Normal menstrual cycle is 21–35 days	102 (45.9%)	120 (54.1%)
Menstrual blood comes from the Uterus	164 (73.9%)	58 (26.1%)
Sanitary pads should be changed every 3–6 hours	134 (60.4%)	88 (39.6%)
Poor hygiene leads to Infection	198 (89.2%)	24 (10.8%)
Washing the genital area is important	210 (94.6%)	12 (5.4%)
Used pads should be wrapped and disposed properly	200 (90.1%)	22 (9.9%)
Hands should be washed before and after changing	178 (80.2%)	44 (19.8%)
Menstruation is caused by hormonal changes	112 (50.5%)	110 (49.5%)
Good hygiene helps prevent infections	206 (92.8%)	16 (7.2%)

The majority of respondents demonstrated good knowledge on several items, including the fact that menstruation is normal (83.8%), poor hygiene leads to infection (89.2%), and proper disposal of pads (90.1%). However, significant knowledge gaps were observed: only 45.9% correctly knew the normal menstrual cycle length (21–35 days), and only half (50.5%) knew that menstruation is caused by hormonal changes. Overall, knowledge was better on practical hygiene practices than on biological facts.

4.3 Attitude toward Menstrual Hygiene Management (Section C)

Table 4.3: Attitude of Respondents toward Menstrual Hygiene Management (N=222)

Statement	SA	A	D	SD	Mean Score	Remark
Menstruation is a normal part of growing up	142	56	18	6	3.48	Agreed
Comfortable discussing with mother/guardian	80	62	50	30	2.86	Agreed
Confident managing menstruation at school	54	68	62	38	2.62	Agreed
Girls should attend school during menstruation	120	66	24	12	3.32	Agreed
I feel ashamed when I am menstruating	48	82	58	34	2.64	Agreed
I always use clean menstrual absorbents	156	50	10	6	3.60	Agreed
Menstrual hygiene is important for good health	180	34	6	2	3.76	Agreed
Menstruation should be kept secret from everyone	30	52	78	62	2.22	Disagreed
I dispose of used materials properly	144	56	16	6	3.52	Agreed
Schools should provide education and facilities	170	40	8	4	3.69	Agreed

The vast majority (3.5%) agreed/strongly agreed that menstruation is normal and that menstrual hygiene is important for health (3.77%). However, negative attitudes persisted: 2.65% either agreed or strongly agreed that they feel ashamed during menstruation, and 2.23% believed menstruation should be kept secret. Encouragingly, 3.69% supported schools providing menstrual hygiene education and facilities.

4.4 Sources of Information on Menstrual Hygiene (Section D)

Table 4.4: Sources of Information on Menstrual Hygiene (N=222)

Item	Category	Frequency (n)	Percentage (%)
First source of information?	Mother	104	46.8%
	Father	6	2.7%
	Sister	32	14.4%
	Friend	42	18.9%
	Teacher	18	8.1%
	Health worker	8	3.6%
	Social media	10	4.5%
	Television/Radio	2	0.9%
Most useful source of information?	Mother	82	36.9%
	Teacher	44	19.8%
	Health worker	56	25.2%
	Friends	20	9.0%
	Internet/social media	18	8.1%
	Others	2	0.9%
Received MH education at school?	Yes	70	31.5%
	No	152	68.5%
Schools should organize regular education?	Yes	206	92.8%
	No	16	7.2%
Attended seminar/health talk on MH?	Yes	34	15.3%
	No	188	84.7%
Total		222	100%

The mother was the most common first source of information (46.8%), followed by friends (18.9%). However, respondents found health workers (25.2%) and teachers (19.8%) to be the most useful sources. The majority (68.5%) had never received menstrual hygiene education in school, and 84.7% had never attended any seminar or health talk on the subject. Despite this, 92.8% strongly supported the idea of schools organizing regular menstrual hygiene education.

IV. DISCUSSION

This study assessed the knowledge and attitude of adolescent girl toward menstrual hygiene in selected government girl's secondary in school Gusau, Zamfara state, Nigeria. Menstruation is a normal physiological process that occurs in females of reproductive age as a result of hormonal changes in the body. It involves the periodic shedding of the uterine lining (endometrium) through the vagina when pregnancy does not occur. Menstruation usually begins during adolescence, between the ages of 10 and 16 years, and continues until menopause. The first menstrual period, known as menarche, marks an important milestone in female reproductive development and signifies the onset of fertility. Menstrual Hygiene Management (MHM) refers to the use of clean menstrual materials to absorb or collect menstrual blood, changing these materials as often as necessary, washing the body with soap and clean water, and having access to facilities for proper disposal of used menstrual products. Effective menstrual hygiene management also includes access to accurate information, privacy, dignity, and supportive environments that enable girls and women to manage menstruation safely and confidently, Anne S, Vijayalakshmi K (2024). Good menstrual hygiene management is essential for maintaining reproductive health and preventing infections such as urinary tract infections and reproductive tract infections Ruspita et a., (2022). Poor menstrual hygiene practices may result from inadequate knowledge, lack of access to sanitary products, poor sanitation facilities, cultural restrictions, and poverty (Ripal N Panchal et al., 2024).

In many developing countries, including Nigeria, adolescent girls often face challenges in managing menstruation because of limited access to menstrual hygiene education and essential facilities.

The study revealed that a majority of respondents demonstrated good knowledge on several items, including the fact that menstruation is normal (83.8%), poor hygiene leads to infection (89.2%), and proper disposal of pads (90.1%). However, significant knowledge gaps were observed: only 45.9% correctly knew the normal menstrual cycle length (21–35 days), and only half (50.5%) knew that menstruation is caused by hormonal changes. Overall, knowledge was better on practical hygiene practices than on biological facts. Most of these findings were similar to what was reported by Niki Shrestha et al (2020) review. The finding of this study also corroborates Hang (2018) work evident that a significantly high number of girls had good knowledge of menstrual hygiene.

The vast majority (3.5%) agreed/strongly agreed that menstruation is normal and that menstrual hygiene is important for health (3.77%). However, negative attitudes persisted: 2.65% either agreed or strongly agreed that they feel ashamed during menstruation, and 2.23% believed menstruation should be kept secret. Encouragingly, 3.69% supported schools providing menstrual hygiene education and facilities. This was similar to report of Kunaedi, I. T., et al (2023). Similar finding reported by Ghimire, S., et al. (2024) showed significant improvement in the knowledge and practice level of adolescent girls on menstrual hygiene after health education intervention.

Belayneh, Z., & Mekuriaw, B. (2019) in their study reported 68.3% had poor knowledge of menstruation. About 48.1% of school girls used absorbent materials, and 69.5% clean their external genitalia. Generally, 60.3% of girls had poor menstrual hygienic practice Age less than 15 years.

REFERENCES

- [1]. Anne S, Vijayalakshmi K (2024). Menstrual hygiene and its awareness among adolescent girls-a study from an urban area. *Int J Reprod Contracept Obstet Gynecol*; 13:2869-74.
- [2]. Aulia Khusnul Khotimah (2024). The relationship between adolescents' knowledge and personal hygiene during menstruation: A literature review. *World Journal of Advanced Research and Reviews*; 24(03): 252–262.
- [3]. Aziz, A., Memon, S., Aziz, F., Memon, F., Khowaja, B. M. H., & Naeem Zafar, S (2024). A comparative study of the knowledge and practices related to menstrual hygiene among adolescent girls in urban and rural areas of Sindh, Pakistan: A cross-sectional study. *Women's Health*, 2024 20.
- [4]. Belayneh, Z., & Mekuriaw, B (2019). Knowledge and menstrual hygiene practice among adolescent school girls in southern Ethiopia: A cross-sectional study. *BMC Public Health*, 19(1): 1–8.
- [5]. Etsay Woldu Anbesu and Dejen Kahsay Asgedom (2023). Menstrual hygiene practice and associated factors among adolescent girls in sub-Saharan Africa: a systematic review and meta-analysis. Anbesu and Asgedom *BMC Public Health* 23:33. <https://doi.org/10.1186/s12889-022-14942-8>.
- [6]. Ghimire, S., Gahatraj, N. R., Shrestha, N., Manandhar, S., & Dhital, S. R (2024). Effects of health education intervention on menstrual hygiene knowledge and practices among the adolescent girls of Pokhara Metropolitan, Nepal. *PLoS ONE*, Sep19, 1–19.
- [7]. Hang, M. B. (2018). Adolescent girls, single-parent fathers, and menarche. *Holistic Nursing Practice*, 17(1), 36–40.
- [8]. Kpe-Nobana, Ch. L., Premier, A. F (2023). Knowledge, Attitude and Practice of Menstrual Hygiene Among Adolescent Girls in Public Secondary Schools in Sagbama Local Government Area, Bayelsa State, Nigeria. *International Journal of Medical Evaluation and Physical Report*; 7(4): pg98-108.
- [9]. Kunaedi, I. T., Faozi, B. F., & Afriani, D (2023). The Relationship between Level of Knowledge and Attitude with Menstrual Hygiene Behavior in Adolescent Girls at SMK Negeri Buahdua. *Journal of Nursing Science Sebelas; (JIKSA)*, 5(1): 26–34.
- [10]. Niki Shrestha, Ganesh Dangal, Gayatri Khanal, Tulsi Ram Bhandari (2020). Knowledge of menstrual hygiene management among adolescent girls: what does evidence show? *Nep J Obstet Gynecol*; 15(30):9-17.
- [11]. Rathoria R. Rathoria E. Bansal U. Singh V. Agarwal P (2024). Knowledge, attitude and practices regarding menstrual hygiene among adolescent school girls. *Sudanese Journal of Paediatrics*; Vol XX, Issue No. XX:1-11.
- [12]. Ripal N Panchal, Shivangi V Rajput, Jaydeepkumar A Ghevariya, Mitesh K Patel (2024). Knowledge, attitude and practices regarding menstrual hygiene among adolescent girls and young adult women in Ahmedabad city - A community based cross sectional study. *Int J Health Sci Res.*; 14(8):322-329. DOI: 10.52403/ijhsr.20240837
- [13]. Ruspita, R., Wati, Y. S., & Fitriani, F (2022). The Relationship between Knowledge and Personal Hygiene Behavior During Menstruation in Adolescent Girls. *Journal of Health Sciences. Des*; 12(4): 310–318.
- [14]. Sommer M, Torondel B, Hennegan A (2021). How addressing menstrual health and hygiene may enable progress across the sustainable development goals. *Global health action.*; 14(1): 920315.
- [15]. UNICEF. Guidance on menstrual health and hygiene. New York: UNICEF, 2019. <https://www.unicef.org/wash/files/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf>
- [16]. UNICEF (2019). Guidance on menstrual health and hygiene. Available at: <https://www.unicef.org/media/91341/file/UNICEF.Guidance-menstrual-health-hygiene>. Accessed on 17th March 2024.
- [17]. UNESCO (2023). Menstrual health and hygiene management: a module for gender empowerment; Last update:25 September 2023.
- [18]. WHO 2022. [WHO statement on menstrual health and rights](#).
- [19]. World Menstrual Hygiene Day 2022: Theme, History, Significance and Quotes n.d. <https://www.news18.com/news/lifestyle/world-menstrual-hygiene-day-2022-all-you-need-to-know-and-quotes-5254093.html> (accessed July 21, 2022).