



Knowledge and Attitude of Primary School Pupils Towards Menstrual Hygiene Management

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ABSTRAK

Penelitian ini dilatarbelakangi oleh rendahnya pengetahuan dan praktik manajemen higiene menstruasi (MHM) di kalangan siswa sekolah dasar, terutama di daerah pedesaan yang menghadapi keterbatasan informasi, fasilitas, dan dukungan sosial. Tujuan penelitian ini adalah untuk menganalisis tingkat pengetahuan dan sikap siswa sekolah dasar di wilayah Pemerintah Daerah Moro, Negara Bagian Kwara, Nigeria terhadap MHM serta mengidentifikasi perbedaan berdasarkan gender. Subjek penelitian ini adalah siswa sekolah dasar kelas atas di wilayah tersebut. Metode penelitian yang digunakan adalah deskriptif kuantitatif dengan pendekatan survei. Teknik pengumpulan data dilakukan melalui penyebaran kuesioner terstruktur yang berisi indikator pengetahuan dan sikap terhadap higiene menstruasi. Data yang diperoleh dianalisis menggunakan statistik deskriptif untuk menggambarkan tren umum, serta uji-t independen pada tingkat signifikansi 0,05 untuk menguji perbedaan berdasarkan gender. Hasil penelitian menunjukkan bahwa tingkat pengetahuan siswa tentang MHM masih rendah, tetapi sebagian besar memiliki sikap positif terhadap manajemen menstruasi, dan tidak terdapat perbedaan yang signifikan antara siswa laki-laki dan perempuan, baik dalam pengetahuan maupun sikap, yang menunjukkan perlunya intervensi edukatif dan kebijakan inklusif dalam pendidikan kesehatan reproduksi di sekolah dasar.

ABSTRACT

This research is motivated by the low knowledge and practice of menstrual hygiene management (MHM) among elementary school students, especially in rural areas that face limited information, facilities, and social support. The purpose of this study was to analyze the level of knowledge and attitudes of primary school students in Moro Local Government Area, Kwara State, Nigeria towards MHM as well as identify differences based on gender. The subjects of this study are upper-class elementary school students in the region. The research method used is quantitative descriptive with a survey approach. The data collection technique was carried out through the dissemination of structured questionnaires containing indicators of knowledge and attitudes towards menstrual hygiene. The data obtained were analyzed using descriptive statistics to illustrate general trends, as well as an independent t-test at a significance level of 0.05 to test differences by gender. The results showed that the level of students' knowledge of MHM was still low, but most had positive attitudes towards menstrual management, and there was no significant difference between male and female students in both knowledge and attitudes, indicating the need for educational interventions and inclusive policies in reproductive health education in primary schools.

1. INTRODUCTION

Menstruation is a normal physiological process of females occurring during their reproductive age. Menstruation is a natural and essential biological process that signifies the onset of reproductive maturity in girls, typically beginning between the ages of 11 and 14. It is a fundamental aspect of female health and development, yet it is frequently surrounded by misconceptions and social stigma, especially in conservative and rural communities (Bulto, 2021; Daniel et al., 2023). The World Health Organisation defines an adolescent as a person between the ages of 10 and 19 years. For primary school girls, this phase coincides with a critical period of psychological and physical transformation that demands accurate information, emotional support, and access to appropriate hygiene products and facilities. During this time, the body undergoes a series of physical and hormonal changes that prepare the uterus for a potential pregnancy. Girls need to understand the importance of menstruation and how to manage it properly (Andriyan et al., 2023; Kambala et al., 2020). MHM refers to the use of clean menstrual materials, access to private spaces for changing, and proper disposal mechanisms, all of which are often absent or inadequate in many primary schools. Articulate that despite menstruation's universality, it remains a stigmatised and

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marginalised aspect of girls' lives. If that is, then in rural areas, where infrastructural challenges persist, the situation is more severe. Girls face unique barriers to menstrual hygiene, including cultural taboos, limited access to sanitary materials, and lack of privacy or clean water in schools (Andriyan et al., 2023; Kambala et al., 2020).

Globally, the World Health Organisation (WHO, 2023) notes that 1.8 billion people menstruate monthly, yet millions lack basic resources and understanding to manage their menstruation safely and with dignity (Muharrina et al., 2023; Permatasari & Suprayitno, 2021). This neglect has far-reaching consequences beyond individual health. Poor menstrual hygiene can lead to urinary tract infections, reproductive health issues, and mental distress (Adane et al., 2024; Kambala et al., 2020). More importantly, it contributes to school absenteeism and dropout, especially among young girls who are unprepared or unsupported. In many cases, girls choose to stay home during their periods due to embarrassment or fear of staining their uniforms, missing vital classroom instruction and falling behind academically (Hussein et al., 2022; Patel et al., 2022). This issue is not merely a health concern but a developmental challenge that intersects with gender equality, education, and human rights (Sommer et al., 2021; Tshomo et al., 2021).

Adolescents aged 10 to 19 years are particularly vulnerable during the transition from childhood to adulthood. This age group, defined by WHO (2018), undergoes significant hormonal and psychological changes, often without adequate guidance or education about their reproductive health (Indriani et al., 2023; Purwanti et al., 2022; Sekarayu & Nurwati, 2021). In many rural communities, menstruation is rarely discussed openly, and as a result, girls are often left unprepared for their first period. They experience anxiety, shame, and confusion, compounded by restrictive cultural practices and gender norms. Furthermore, the absence of pre-menarcheal training means that many girls rely on myths or misinformation from peers, resulting in harmful practices such as using unsafe absorbents or avoiding bathing during menstruation (Adane et al., 2024; Thurairasu, 2023). Gender plays a pivotal role in menstrual hygiene management. Cultural norms and social expectations often lead to the marginalisation of girls during menstruation, while boys remain uninformed or misinformed about the topic (Aucejo et al., 2022; Fialkov et al., 2021). The attitudes of boys towards menstruation significantly impact girls' experiences in school settings. Negative behaviours such as teasing or mockery can cause emotional trauma and reinforce stigma. Promoting gender-sensitive menstrual education is, therefore, essential. Educating both boys and girls fosters empathy, respect, and inclusion, creating a supportive school environment (Al-Mamun et al., 2025; Patel et al., 2022a). Knowledge and Attitude towards menstrual hygiene management encompasses the cognitive and affective aspects of menstruation that are crucial for effective menstrual hygiene practices (Asumah et al., 2022; Thurairasu, 2023). The majority of pupils at the primary school level had not received education regarding menstrual hygiene. Many girls experienced stress and anxiety at the onset of their menarche due to the lack of proper waste management systems. Challenges: Girls in rural areas face more problems due to a lack of resources, skills, and knowledge to manage their menstruation (Adane et al., 2024; Fialkov et al., 2021).

Unfortunately, many pupils, especially in rural areas, lack access to formal education on menstrual hygiene (Al-Mamun et al., 2025; Patel et al., 2022; Suryabayu et al., 2022). Most girls in primary schools had not received any instruction on how to manage menstruation hygienically, which resulted in stress, fear, and poor hygiene practices during menarche. Additionally, inadequate WASH (Water, Sanitation, and Hygiene) infrastructure in schools further aggravates the issue, making it difficult for girls to change or dispose of sanitary products privately and safely (Bakibinga & Rukuba-Ngaiza, 2021; Hammad et al., 2025). The combination of poor education and infrastructural limitations perpetuates cycles of misinformation, inequality, and health risks. There is an urgent need to integrate menstrual hygiene management into the primary school curriculum to equip young girls with knowledge and practical skills that enhance their reproductive health and educational outcomes (Mohammed & Larsen-Reindorf, 2020; Tshivule et al., 2025).

Menstrual hygiene management (MHM) is a vital aspect of girls' health and education, yet remains inadequately addressed among primary school pupils in many rural Nigerian communities, where many girls face significant challenges in managing menstruation due to limited knowledge, lack of sanitary products, and inadequate access to clean water and private facilities (Al-Mamun et al., 2025; Bakibinga & Rukuba-Ngaiza, 2021). Although previous studies have highlighted the barriers adolescent girls encounter during menstruation, most of this research has focused on urban settings, leaving a knowledge gap concerning the experiences, knowledge, and attitudes of pupils in rural communities (Smith & Reimer, 2024; Tshivule et al., 2025). This gap hampers the development of effective, context-specific interventions and policies aimed at promoting safe and dignified menstrual practices. Without adequate attention to these issues, affected girls may suffer from health complications, school absenteeism, and diminished self-esteem (Smith & Reimer, 2024; Uwadia et al., 2022). This study is innovative in that it highlights the knowledge and attitudes of primary school students in rural areas towards menstrual hygiene management (MHM), an aspect that is still rarely researched compared to the general focus on secondary school students in urban

areas (Andani, 2020; Deriba et al., 2022). Rural conditions with limited WASH facilities, strong cultural norms, and lack of reproductive education make this study important to provide contextual understanding and evidence-based solutions (Eriksson et al., 2020; Fialkov et al., 2021). The purpose of this study is to analyze the level of knowledge and attitudes of primary school students in Moro Local Government Area, Kwara State, towards MHM and identify differences based on gender to support the development of inclusive education and policy programs in the management of healthy and dignified menstruation (Dündar & Özsoy, 2020; Pednekar et al., 2022).

This study has novelty because it focuses on elementary school students in rural areas, a group that is rarely the focus of MHM studies that generally research adolescents in urban areas. Rural conditions with limited WASH facilities, strong cultural norms, and lack of reproductive education make this study important to provide a contextual understanding of children's knowledge and attitudes towards menstruation. The purpose of this study is to analyze the level of knowledge and attitudes of primary school students in the Moro Local Government Area, Kwara State, towards menstrual hygiene management and identify gender-based differences to support the development of inclusive and gender-equitable education and health policies.

2. METHOD

The phenomena or variable were researched in a natural setting, The study uses a descriptive research design to investigate the knowledge and attitudes of primary school pupils towards menstrual hygiene management. Without manipulating any variables, survey research allows the researcher to make inferences about the population based on the samples studies. The survey entails the selection of the respondents in order to determine and report their level of knowledge and attitudes. The population of this study comprises 16,525 primary school pupils in Moro Local Government Area of Kwara State. (Kwara State Ministry of Education School Census report 2013-2014). Simple Random Sampling Technique was used to determine the sample size for this study, which comprises 375 Primary school pupils in the Moro Local Government Area of Kwara State, as suggested by the Research Advisor (2006 at 95% confidence and 5.0% margin of error employed. Two researcher designed instruments were used for the study titled: Knowledge of Primary School Pupils towards Menstrual Hygiene Management Test (KPSPTMHMT) and Questionnaire on Primary School Pupils' Attitude towards Menstrual Hygiene Management (QPSPATMHM). Section A contain demographic information of the respondents and Section B consisted of questions items from 1 – 15 with options A to D provided for the respondents to make their response to the test. The second instrument, which is the questionnaire, comprises Section A: Demographic information of the respondents, while Section B comprises a four-point modified Likert scale of Never, Rarely, Sometimes, Always, provided for the respondents to make their response to the questionnaire. The instruments were subjected to both face and content validity by an expert in Early Childhood and Primary Education, Test, Measurement and Evaluation, while the reliability of the instruments were established through the test-retest method using Pearson product-moment correlation (PPMC) to determine the reliability index, which yielded 785 and .891, respectively. Research questions were answered using descriptive statistics of mean and standard deviation, while the hypotheses were analysed using an independent sample t-test at a 0.05 level of significance.

3. RESULT AND DISCUSSION

Result

Data analysis and the study's results on the knowledge and attitudes of primary school pupils towards menstrual hygiene management in Moro Local Government Area of Kwara State. Demographic data of the participants were presented using frequency counts and percentages.

Demographic Description of Respondents

This section describes the demographic characteristics of the respondents using frequency counts and percentages. Frequency and Percentage Distribution of Gender of Respondents can be seen at [Table 1](#). [Table 1](#) presents the gender distribution of the respondents involved in the study. Out of 375 participants, 174 respondents (46.4%) were male, while 201 respondents (53.6%) were female. The data imply that the study captured a diverse representation in terms of gender, with both male and female perspectives adequately included, though females formed the majority. It was revealed that female respondents slightly outnumbered male respondents within the sample of the study.

Table 1. Frequency and Percentage Distribution of Gender of Respondents

	Frequency	Percentage (%)	Valid Percent
Male	174	46.4%	46.4
Female	201	53.6%	53.6
Total	375	100.0%	100.0

To decide on the level of primary school pupils' knowledge of menstrual hygiene management in Moro Local Government area of Kwara State, the total score which each respondent is 100 (5 Marks for each of the 20 questions), having a minimum of 0 and a maximum of 100. This was categorised into three levels: high level of knowledge, moderate level of knowledge, and low level of knowledge of menstrual hygiene management in the Moro Local Government area of Kwara State. These three levels of categories of high, moderate, and low were determined by scores were arranged in the following categories to determine a low level of knowledge (0 – 35), moderate level of knowledge (36 – 69), and high level of knowledge of menstrual hygiene management in Moro Local Government area of Kwara State (70 – 100). The result is presented can be seen at [Table 2](#).

Table 2. Level of Knowledge of Primary School Pupils on Menstrual Hygiene Management

	Frequency	Percentage (%)	Valid Percent
Low	162	43.2%	43.2
Moderate	104	27.7%	27.7
High	109	29.1%	29.1
Total	375	100.0	100.0

Decision rule: 0 - 35 = Low; 36 - 69 = Moderate; 70 - 100 = High

From the findings presented in [Table 2](#), it was observed that 162 pupils, representing 43.2%, demonstrated a low level of knowledge of menstrual hygiene management. Additionally, 104 pupils, accounting for 27.7%, exhibited a moderate level of knowledge, while only 109 pupils, representing 29.1%, showed a high level of understanding. These results indicate that the majority, 162 (43.2%), of the primary school pupils in Moro Local Government demonstrate low menstrual hygiene management. To answer this research question, the data gathered from the respondents on the items' attitude of primary school pupils towards menstrual hygiene management in the Moro Local Government Area of Kwara State were analysed using descriptive statistics. The result of the analysis can be seen at [Table 3](#).

Table 3. Attitude of Primary School Pupils Towards Menstrual Hygiene Management

S/N	Items	N	X	SD	Rank	Remarks
1.	How often do you believe menstruation is a normal part of growing up?	375	2.99	0.95	9 th	Moderate
2.	Do you think periods are something to be ashamed of?	375	2.88	1.06	15 th	Low
3.	Do you offer to help someone who needs help during menstruation?	375	2.98	0.96	10 th	Moderate
4.	Do you include friends who are having their period in games and activities?	375	2.91	1.02	14 th	Moderate
5.	How often do you think that menstruation affects one's ability to learn and how they feel?	375	2.96	0.99	12 th	Moderate
6.	Do you think schools should teach about menstruation and menstrual hygiene management?	375	3.25	0.91	1 st	High
7.	How frequently do you think boys should be involved in discussions about menstruation?	375	3.14	0.88	5 th	Moderate
8.	How often do you think menstruation affects female daily activities (e.g., school, sports)?	375	3.23	0.84	2 nd	High
9.	How often do you believe that girls who menstruate are unclean or impure?	375	3.00	0.98	8 th	Moderate
10.	How often do you believe that menstruation is a sign of womanhood?	375	3.06	0.91	6 th	Moderate

S/N	Items	N	X	SD	Rank	Remarks
11.	Do you think learning about periods is important?	375	3.22	0.78	3 rd	High
12.	Do you think talking about periods openly can help reduce stigma?	375	3.05	0.83	7 th	Moderate
13.	How often do you think it's crucial to include someone who is having their period in activities?	375	2.98	0.96	10 th	Moderate
14.	How often do you think menstruation is a disease?	375	2.92	1.05	13 th	Moderate
15.	How often do you think learning about periods is important?	375	3.18	0.92	4 th	High

Weighted Mean = 3.05; Disagreed < 2.5; Agreed > 2.5

The [Table 3](#) above revealed that the item with the highest mean score (Mean = 3.25) was the belief that schools should teach about menstruation and menstrual hygiene management, indicating a strong positive attitude toward structured menstrual health education among the pupils. Conversely, the lowest mean score (Mean = 2.88) was recorded for the belief that periods are something to be ashamed of, while the overall, the weighted mean of 3.05 reflects a generally high and leaning-positive attitude among the pupils towards menstrual hygiene management. Hence, to decide on the attitude of primary school pupils towards menstrual hygiene management in Moro Local Government Area of Kwara State, the total response of each respondent in continuous data was converted to discrete data and summed up, having a minimum of 15, a maximum of 60 and a range of 45. This was categorised into two attitudes: positive attitude of primary school pupils towards menstrual hygiene management and negative attitude of primary school pupils towards menstrual hygiene management. Therefore, the scores were arranged in the following categories to determine a negative attitude of primary school pupils towards menstrual hygiene management (15 – 37.5), and a positive attitude of primary school pupils towards menstrual hygiene management (37.6 – 60). The result can be seen at [Table 4](#).

Table 4. Positive and Negative Attitudes Of Primary School Pupils Towards Menstrual Hygiene Management

	Frequency	Percentage (%)	Valid Percent
Negative	47	12.5%	12.5
Positive	328	87.5%	87.5
Total	375	100.0%	100.0

Decision rule: 15 – 37.5 = Negative Attitude; 37.6 – 60 = Positive Attitude

The above [Table 4](#) revealed that out of 375 respondents, 47 pupils (12.5%) displayed a negative attitude, while the overwhelming majority, 328 pupils (87.5%), exhibited a positive attitude. This indicates that a significant proportion of pupils in the area have a favourable view of menstrual hygiene management. Hence, the finding of the study revealed that it was revealed that the majority, 328 (87.5%), of primary school pupils in Moro Local Government Area of Kwara State exhibit a positive attitude towards menstrual hygiene management. To examine whether gender plays a role in influencing the knowledge of primary school pupils regarding menstrual hygiene management in Moro Local Government Area of Kwara State, an inferential statistical analysis was conducted. The hypothesis sought to determine if there exists any statistically significant difference in the mean knowledge scores between male and female pupils. Since gender consists of two independent groups (male and female), and the knowledge scores are measured on a continuous scale, the Independent Samples t-test was employed as the appropriate statistical tool to test this hypothesis at a 0.05 level of significance. Table of t-test analysis showing the difference between male and female knowledge of primary school pupils regarding menstrual hygiene management can be seen at [Table 5](#).

Table 5. Table of t-test Analysis Showing the Difference Between Male and Female Knowledge of Primary School Pupils Regarding Menstrual Hygiene Management

	Gender	N	Mean	SD	df	t _{value}	Sig.	Decision
Assessment	Male	174	50.75	24.13	373	-0.47	0.64	*Not Significant
	Female	201	51.92	23.87				

Decision rule: p-value < 0.05 = significant; p-value > 0.05 = not significant

The results in [Table 5](#) above indicate that male pupils ($n = 174$) had a mean score of 50.75 with a standard deviation of 24.13, while female pupils ($n = 201$) had a slightly higher mean score of 51.92 with a standard deviation of 23.87. Since $p\text{-value} (0.638) > 0.05$, the null hypothesis, which stated that there is no significant difference between male and female knowledge regarding menstrual hygiene, is retained. Hence, it was revealed that there is no significant difference between male and female knowledge of primary school pupils regarding menstrual hygiene management in Moro Local Government Area of Kwara State. Research Hypothesis Two: There is no significant difference in the attitude of primary school pupils towards menstrual hygiene management in Moro Local Government Area based on gender. Research hypothesis two seeks to examine whether there is a significant difference in the attitudes of primary school pupils towards menstrual hygiene management in Moro Local Government Area, based on gender. Since gender consists of two independent groups (male and female), the attitudes measured are summed, and the Independent Samples t-test was employed as the appropriate statistical tool to test this hypothesis at a 0.05 level of significance. Table of t-test analysis showing the differences between male and female attitudes of primary school pupils regarding menstrual hygiene management can be seen at [Table 6](#).

Table 6: Table of t-Test Analysis Showing the Differences Between Male and Female Attitudes of Primary School Pupils Regarding Menstrual Hygiene Management

	Gender	N	Mean	SD	df	t value	Sig.	Decision
Attitude	Male	174	45.33	6.54	373	-1.126	0.261	*Retained
	Female	201	46.11	6.84				

Decision rule: $p\text{-value} < 0.05 = \text{rejected}$; $p\text{-value} > 0.05 = \text{retained}$

Based on the results of the t-test, the $p\text{-value}$ is 0.261, which is greater than the significance level of 0.05. Therefore, we retain the null hypothesis. This indicates that there is no significant difference in the attitudes of male and female primary school pupils towards menstrual hygiene management in Moro Local Government Area.

Discussion

The low level of knowledge and gap in understanding of menstrual hygiene management among primary school students in the Moro Local Government Area is most likely due to the lack of comprehensive reproductive education at the primary level ([Kambala et al., 2020](#); [Patel et al., 2022](#)). In many cases, teachers feel awkward or do not have adequate training to discuss the topic of menstruation openly in class. In addition, the culture of silence that is still strong in rural communities causes this topic to be considered taboo to talk about, both at home and at school ([Muharrina et al., 2023](#); [Permatasari & Suprayitno, 2021](#)). Limited access to information media such as health books, the internet, and public campaigns also limit children's opportunities, especially women, to gain correct knowledge about menstruation. Economic factors also aggravate the situation, because low-income families prioritize basic needs over the purchase of menstrual hygiene products or relevant learning resources ([Bulto, 2021](#); [Daniel et al., 2023](#)). Meanwhile, the positive attitude shown by most students can be explained by the increasing exposure to modern information through social media, television, and school or community-based health counseling programs that are beginning to integrate the topics of personal hygiene and puberty ([Bakibinga & Rukuba-Ngaiza, 2021](#); [Hammad et al., 2025](#)). Although knowledge is still limited, social experience and high curiosity encourage acceptance of menstruation as a natural thing. Peer roles and extracurricular activities can also be informal mediums for information sharing that help reduce shame and stigma ([Hammad et al., 2025](#); [Tshivule et al., 2025](#)).

The absence of significant differences between the knowledge and attitudes of male and female students can occur due to the presence of intense social interaction in primary schools, where children acquire information together without gender differentiation ([Aucejo et al., 2022](#); [Fialkov et al., 2021](#)). Non-gender-specific general health education programs, as well as students' learning habits in mixed groups, help to equalize their perceptions. In addition, the growing openness of gender equality discourse in education in Nigeria and the efforts of local NGOs promoting community-based reproductive health education have contributed to creating a collective awareness of the importance of understanding and respecting women's biological processes ([Daniel et al., 2023](#); [Kambala et al., 2020](#)).

The finding from this study revealed that primary school pupils in Moro Local Government Area demonstrated low menstrual hygiene management reflects a critical gap in knowledge, resources, and supportive structures for effective menstrual care. This outcome indicates that many girls in the area may be managing their menstruation with limited information and unsafe practices, which could negatively affect their health, school attendance, and self-esteem. This aligns with the findings that reported that girls had good knowledge of menstrual hygiene. Similarly, aligning with earlier studies poor knowledge and

negative cultural attitudes as barriers to safe menstrual hygiene management (Bulto, 2021; Daniel et al., 2023). Though all these findings contrast that reported better menstrual hygiene management knowledge in urban areas, highlighting rural-urban disparities, which showed the disparity between the rural and urban knowledge of menstrual hygiene management (Kambala et al., 2020; Tshomo et al., 2021). The finding revealed that majority, of primary school pupils in Moro Local Government Area of Kwara State exhibit a positive attitude towards menstrual hygiene management is both encouraging and significant, as it reflects growing awareness and acceptance of menstruation as a natural and manageable aspect of female health. This positive attitudinal disposition suggests that, despite challenges related to infrastructure and access to menstrual products, pupils are increasingly willing to engage with the topic constructively. This finding aligns with another research who observed that a large proportion of adolescents in urban Nigeria demonstrated good attitudes towards menstrual hygiene, largely influenced by early exposure to menstrual education and maternal support (Abdulkareem et al., 2024; Uwadia et al., 2022). It also supports the that who highlighted that although socio-cultural factors pose challenges, sustained sensitisation efforts can gradually reshape perceptions and promote healthier attitudes among young girls (Fialkov et al., 2021; Tshivule et al., 2025).

The finding also revealed that there is no significant difference between male and female primary school pupils' knowledge of menstrual hygiene management in Moro Local Government Area of Kwara State, suggests that awareness about menstruation and its management is relatively uniform across genders in this context. This could be indicative of increased general exposure to menstrual health education, possibly through school programs or community initiatives that target all pupils regardless of gender. This result is consistent with the observations who noted that knowledge of menstrual hygiene can be widespread among adolescents, though practices may vary. Similarly, another research highlighted that while knowledge levels about menstrual hygiene can be limited, the attitudes and cultural beliefs surrounding menstruation affect both males and females, reflecting a shared socio-cultural environment (Fialkov et al., 2021; Tshivule et al., 2025). The absence of a significant gender difference emphasises the potential for inclusive education strategies that involve both boys and girls, which could reduce stigma and promote supportive attitudes towards menstrual hygiene management in Nigerian schools.

This study has several limitations, including the limited coverage of one rural area (Moro Local Government Area) so that the results cannot be generalized to urban contexts or other areas with different social characteristics. In addition, the use of questionnaires as the main instrument has the potential to cause response bias because it depends on the honesty and understanding of students. However, the advantage of this study lies in its rarely conducted focus, namely examining the knowledge and attitudes of elementary school students in rural areas towards menstrual hygiene management (MHM), thus making a new empirical contribution to the MHM literature that generally focuses on urban adolescents. As for the implications, the results of this research can serve as a basis for policymakers and schools to integrate reproductive health and menstrual hygiene education into the basic curriculum and encourage gender-inclusive education programs to create a healthy, safe, and equal learning environment for all students.

Since the findings revealed a low level of menstrual hygiene management among primary school pupils, schools should implement and strengthen menstrual hygiene education programs to improve pupils' knowledge and practices: As the study revealed a high level of positive attitude towards menstrual hygiene management among pupils, schools should continue to foster and build on this attitude by integrating menstrual hygiene topics into the school curriculum and extracurricular activities, ensuring sustained awareness and acceptance: Schools should adopt inclusive menstrual hygiene education that involves both male and female pupils, as the findings showed no significant difference in knowledge between genders: Stakeholders such as teachers, parents, community leaders, and health workers should be engaged in developing gender-sensitive awareness campaigns and peer education programs, since there was no significant difference in attitudes towards menstrual hygiene management between male and female pupils.

4. CONCLUSION

This study highlights a complex picture of menstrual hygiene management among primary school pupils in Moro Local Government Area. While knowledge levels remain generally low, reflecting significant gaps in education, resources, and cultural barriers, there is a notably positive attitude toward menstrual hygiene, suggesting openness to learning and change. The lack of significant gender differences in both knowledge and attitudes underscores the importance of inclusive education programs that engage all pupils to dismantle stigma and foster supportive environments. These findings reinforce the need for targeted interventions addressing both informational and infrastructural challenges, especially in rural settings, to

improve menstrual health outcomes and promote the well-being and school participation of adolescent girls.

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