

**STATISTICAL ANALYSIS ON MENSTRUAL AWARENESS
AND HYGIENE AMONG ADOLESCENTS.**

(A CASE STUDY OF AKUO, ARA, OKE OSE, LAJOLO AND AGBEDE)

BY

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ND/23/STA/FT/0014

**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT
OF STATISTICS**

**INSTITUTE OF APPLIED SCIENCES (IAS) KWARA STATE
POLYTECHNIC, ILORIN.**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR
THE AWARD OF NATIONAL DIPLOMA (ND) IN STATISTICS**

JULY, 2025

CERTIFICATION

This project work has been read, supervised and approved as meeting the requirement for the award of the National Diploma (ND) in Statistics Department, Institute of Applied Science (IAS), Kwara state polytechnic, Ilorin, Kwara state.

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DEDICATION

This project is dedicated to the Almighty God and to my parent (Mr. and Mrs. Abdulraheem)

ACKNOWLEDGEMENT

First and foremost, I express my profound gratitude to Almighty God for His guidance, strength, and grace throughout the duration of this project.

I would like to sincerely thank my supervisor, Ajiboye R.A, for her invaluable support, encouragement, and expert guidance throughout the course of this research. Her insightful feedback and constructive criticism were instrumental in shaping the quality of this work.

My appreciation also goes to the staff and Institute of Applied Science Statistics, Kwara State Polytechnic for providing a conducive academic environment and for the knowledge imparted during my study.

I am deeply grateful to the adolescents who participated in the survey for their openness and willingness to share their experiences, which made this study possible. I also appreciate the cooperation of schools, parents, and guardians who supported this research in various ways.

A special thanks to my family, my siblings and friends for their unwavering love, patience, and encouragement, especially during challenging moments. Your support meant the world to me.

Thank you all.

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ABSTRACT

Menstrual hygiene is a vital component of adolescent reproductive health, yet it remains a sensitive and often neglected subject, particularly in developing countries like Nigeria. This study statistically investigates the level of awareness and menstrual hygiene practices among adolescent girls in Kwara State. The objectives were to assess the knowledge, practices, and sources of information related to menstruation, as well as to identify factors influencing proper hygiene practices. A structured questionnaire was administered to a sample of secondary school students using stratified random sampling techniques. Descriptive and inferential statistics, including frequency distribution, chi-square tests, and correlation analysis, were employed to analyze the data collected. The findings revealed that while a significant proportion of adolescents were aware of menstruation before menarche (The first menstrual period in a female adolescent), gaps remain in accurate knowledge and hygienic practices. Access to sanitary materials, parental communication, and school-based health education were found to be significant factors influencing menstrual hygiene management. The study concludes that although awareness levels are moderately high, consistent and hygienic practices are still inadequate due to socio-cultural, economic, and infrastructural challenges. It recommends intensified menstrual health education programs, provision of affordable sanitary materials, and improved water, sanitation, and hygiene (WASH) facilities in schools to promote better menstrual hygiene management among adolescent girls.

Keywords: *Menstrual Hygiene, Adolescents, Awareness, Hygiene Practices, Reproductive Health, Statistical Analysis, Sanitary Pads, Health Education*

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Menstrual hygiene management (MHM) is an essential aspect of reproductive and general health, particularly for adolescent girls. Menstruation, the monthly discharge of blood and mucosal tissue from the inner lining of the uterus through the vagina, is a normal physiological process that signifies reproductive maturity. Despite its biological universality, menstruation is often treated as a taboo subject in many societies, including Nigeria, where cultural beliefs, myths, and social norms influence how menstruation is perceived and managed. This culture of silence and shame has profound implications for adolescent girls' health, education, and overall well-being.

In developing countries like Nigeria, adolescent girls often face considerable challenges in managing their menstruation safely and with dignity. These challenges include a lack of access to accurate information about menstruation, limited availability of menstrual hygiene products, inadequate sanitation facilities in schools, and a general lack of social support. These barriers are exacerbated by poverty, gender inequality, and entrenched cultural taboos. The result is a situation where many girls are unable to manage their periods hygienically and privately, which can negatively affect their health, confidence, and school performance.

Research has shown that poor menstrual hygiene can lead to a range of health problems, including reproductive tract infections (RTIs), urinary tract infections (UTIs), and even long-term reproductive health complications. Inadequate menstrual hygiene management has also been linked to increased absenteeism from school, reduced academic performance, and higher dropout rates among adolescent girls. When girls feel uncomfortable or embarrassed about managing their menstruation at school—due to inadequate facilities or fear of being teased—they are more likely

to stay at home during their periods. Over time, this can contribute to gender disparities in education, as girls miss more school days than their male counterparts.

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) have emphasized the importance of proper menstrual hygiene as a key component of the human right to water and sanitation. These organizations advocate for integrating menstrual hygiene management into health, education, and water, sanitation, and hygiene (WASH) programs. The Sustainable Development Goals (SDGs), particularly Goal 3 (Good Health and Well-being), Goal 4 (Quality Education), and Goal 6 (Clean Water and Sanitation), are all relevant to menstrual hygiene, further underscoring its importance in global development agendas.

In Nigeria, the situation is particularly challenging due to the socio-economic and cultural context. A significant proportion of the population lives below the poverty line, which limits access to affordable sanitary products. In rural areas and some urban slums, access to clean water, private sanitation facilities, and hygienic menstrual materials is often inadequate or entirely absent. Moreover, traditional beliefs and misconceptions about menstruation persist across many communities. For instance, some cultures regard menstruating women and girls as impure and impose various restrictions on them during their periods. These taboos can lead to feelings of shame and embarrassment, making it difficult for girls to ask questions, seek help, or even attend school.

The lack of education about menstruation is another critical factor. Many girls experience their first period, known as menarche, without prior knowledge of what is happening to their bodies. This lack of preparedness can result in confusion, fear, and the adoption of unhygienic practices. In many cases, mothers or female relatives are the primary source of information, but they themselves may hold inaccurate beliefs or lack the appropriate knowledge to guide young girls effectively. Schools often do not provide adequate menstrual health education, and teachers may avoid the topic due to discomfort or cultural sensitivity.

A growing body of research suggests that comprehensive menstrual health education can significantly improve girls' understanding and management of menstruation. When girls are educated about menstruation in a supportive and open environment, they are more likely to adopt hygienic practices, feel confident in managing their periods, and remain engaged in school activities. Additionally, involving boys and men in menstrual health education can help reduce stigma and foster a more supportive environment for girls.

Government and non-governmental organizations (NGOs) in Nigeria have launched various initiatives to improve menstrual hygiene among adolescents. These include awareness campaigns, distribution of free or subsidized sanitary products, construction of gender-sensitive sanitation facilities in schools, and integration of menstrual health into school curricula. While these efforts are commendable, challenges remain in terms of scalability, sustainability, and impact assessment. There is still a need for more data-driven approaches to understand the specific barriers adolescent girls face and to evaluate the effectiveness of current interventions.

Statistical analysis plays a crucial role in this context. By collecting and analyzing data on menstrual hygiene practices, access to facilities, availability of sanitary products, and the influence of socio-economic and demographic factors, researchers can identify key trends, gaps, and opportunities for intervention. For instance, data may reveal that girls from low-income households are less likely to use disposable sanitary pads and more likely to miss school during their periods. Such findings can inform targeted policies and programs aimed at addressing these disparities.

Moreover, a statistical investigation allows for the identification of correlations and causal relationships. For example, researchers can examine whether there is a significant relationship between mothers' education level and their daughters' menstrual hygiene practices, or whether girls attending schools with functional WASH facilities demonstrate better menstrual management behaviors than those without. These insights are invaluable for developing evidence-based strategies to improve menstrual health outcomes.

The adolescent period, defined by the World Health Organization as the age between 10 and 19 years, is a critical window for shaping lifelong health and social behaviors. It is during this time that girls begin menstruation and form habits that may affect their reproductive health for years to come. Therefore, investing in menstrual hygiene education and resources for adolescents is not only a health imperative but also a strategic investment in human capital and national development.

Despite the importance of menstrual hygiene, it remains a neglected area in public health research, particularly in Nigeria. While there are qualitative studies and anecdotal reports highlighting the challenges faced by adolescent girls, there is a lack of robust quantitative data that can be used for policy formulation and program design. This study seeks to fill this gap by employing statistical methods to assess awareness levels, hygiene practices, and the socio-economic and demographic determinants of menstrual hygiene among adolescent girls.

In conclusion, menstrual hygiene management is a multifaceted issue that intersects health, education, gender, and human rights. It is influenced by a complex interplay of cultural, economic, and infrastructural factors. Addressing these challenges requires a holistic approach that combines education, infrastructure development, policy reform, and community engagement. Through a rigorous statistical investigation, this study aims to contribute to the growing body of evidence needed to support effective interventions and ensure that all girls can manage their menstruation safely, confidently, and with dignity.

1.2 Statement of the Problem

Despite numerous advocacy efforts and awareness campaigns, a large number of adolescent girls in Nigeria still manage menstruation under substandard conditions. These issues are often rooted in ignorance, cultural taboos, poverty, and lack of support infrastructure. Consequently, many girls experience disruptions in their education, diminished academic performance, and emotional distress.

While anecdotal evidence of these challenges exists, there is insufficient statistical analysis quantifying the extent and impact of these factors on menstrual hygiene practices. This gap in

empirical data necessitates a thorough statistical investigation to inform effective policy and programmatic responses.

1.3 Objectives of the Study

The main objectives of the study are to:

- Assess the level of awareness and knowledge about menstrual hygiene among adolescent girls.
- Determine the availability and usage of menstrual hygiene products.
- Examine the influence of socio-economic and demographic factors on menstrual hygiene practices.
- Employ statistical tools to analyze findings for evidence-based policymaking.

1.4 Hypotheses

- **H₀:** There is no significant relationship between socio-economic status and menstrual hygiene practices.
- **H₁:** There is a significant relationship between socio-economic status and menstrual hygiene practices.

1.5 Significance of the Study

This study offers empirical insights into menstrual hygiene management among adolescents, providing valuable data for policymakers, educators, and health practitioners. It aims to inform the development of targeted interventions to improve menstrual health and promote equitable access to menstrual hygiene resources. Additionally, the study contributes to the growing body of literature on adolescent reproductive health and gender equity.

1.6 Scope of the Study

The research focuses on adolescent girls aged 10 to 19 years in selected schools or communities. It covers key aspects such as awareness levels, menstrual hygiene practices, and accessibility of menstrual hygiene products, as well as the influence of socio-economic and demographic factors.

1.7 Definition of Terms

- **Menstrual Hygiene:** The practice of using clean menstrual materials, maintaining personal cleanliness, and having access to water, soap, and private sanitation facilities during menstruation.
- **Adolescents:** Individuals aged between 10 and 19 years who are undergoing the transition from childhood to adulthood.
- **Menstrual Hygiene Products:** Materials such as sanitary pads, tampons, menstrual cups, or reusable cloths used to absorb or collect menstrual blood.
- **Awareness:** Knowledge and understanding about menstruation, menstrual hygiene practices, and related health information.
- **Socio-Economic Status (SES):** A measure of an individual or family's economic and social position based on income, education, and occupation.
- **Menstrual Hygiene Practices:** The behaviors and routines adopted during menstruation to maintain cleanliness and prevent infection.
- **Sanitation Facilities:** Physical structures such as toilets, washing stations, and disposal bins that support hygienic management of menstruation.

- **Cultural Beliefs and Taboos:** Traditional norms and attitudes that influence perceptions and practices related to menstruation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature on menstrual hygiene practices among adolescent girls. It explores themes such as awareness, access to hygiene products, the influence of socio-economic and cultural factors, and the impact of poor menstrual hygiene on health and education.

2.2 Related Literature

Menstrual Hygiene Knowledge among Adolescents

The level of knowledge adolescent girls possess regarding menstrual hygiene is a foundational factor in determining how well they manage their periods. Dasgupta and Sarkar (2008) conducted a landmark study in West Bengal, India, to assess awareness and practices among adolescent schoolgirls. Their findings revealed that only 32.5% of the girls had prior knowledge about menstruation before menarche. This low level of awareness was largely due to cultural taboos and the reluctance of parents and schools to provide comprehensive sexual and reproductive health education.

The study emphasized that most girls received information about menstruation from their mothers, who often lacked scientific understanding themselves and transmitted inaccurate or incomplete knowledge. As a result, girls were unprepared to deal with menstruation, leading to poor hygiene practices, fear, anxiety, and embarrassment during their first period. The lack of appropriate education left many girls vulnerable to infections, such as urinary tract infections (UTIs) and reproductive tract infections (RTIs), due to unhygienic practices like prolonged use of unclean absorbent materials.

In addition to health implications, ignorance surrounding menstruation contributes to psychological stress. Girls often experience confusion, shame, and low self-esteem due to the lack of understanding of what is happening to their bodies. This emotional burden may hinder their social interaction and participation in school activities, further exacerbating gender-based inequalities in education.

Effective menstrual hygiene education must go beyond biology to include emotional, social, and practical dimensions. Studies suggest that structured school-based education programs significantly improve menstrual knowledge and practices among adolescent girls. For example, a 2011 study by the Ministry of Human Resource Development in India found that girls who received menstrual education in school were more likely to use sanitary pads, bathe regularly during menstruation, and report less discomfort.

Given the pivotal role of knowledge, it is crucial that menstrual health education be included in the formal school curriculum and delivered by trained educators. Health workers and peer-led initiatives can also be employed to reach out-of-school girls and those in remote areas. Governments and NGOs must work together to dismantle taboos and create an enabling environment for open conversations about menstruation.

In summary, improving adolescent girls' knowledge about menstruation and hygiene practices is an essential step toward safeguarding their health, emotional well-being, and educational outcomes. Addressing this knowledge gap through targeted interventions will empower girls to manage menstruation with dignity and confidence.

Access to sanitary products and proper hygiene facilities is fundamental to effective menstrual hygiene management (MHM). A widely cited study by Sommer et al. (2015) underscored the challenges faced by adolescent girls in low-income and developing countries in accessing menstrual hygiene products. The research, which focused on sub-Saharan Africa, revealed that many girls were unable to afford commercial sanitary pads and resorted to using unhygienic alternatives such as old cloths, newspapers, leaves, and even mud. These practices not only

compromise comfort but also pose serious health risks including urinary tract infections (UTIs) and reproductive tract infections (RTIs).

The lack of accessible hygiene facilities in schools and public areas compounds the problem. Many schools lack gender-segregated toilets, clean water, soap, and waste disposal bins, making it difficult for girls to change pads or wash during the school day. In Nigeria and other parts of Africa, this lack of facilities contributes to school absenteeism, especially during menstruation. Studies estimate that girls miss up to 20% of the school year due to menstruation-related issues, significantly affecting their academic performance and increasing their likelihood of dropping out.

Furthermore, a study by WaterAid (2014) emphasized that the lack of menstrual-friendly toilets in schools discourages attendance and limits girls' participation in sports and social activities. Where facilities do exist, cultural taboos and the absence of privacy may still prevent their optimal use. Girls may feel embarrassed or fear stigma if seen carrying sanitary products or spending too much time in restrooms, leading them to avoid school or social interactions altogether.

In recent years, several interventions have aimed at addressing these challenges. Some governments and NGOs have begun distributing free or subsidized sanitary pads to schoolgirls, while others have initiated campaigns to build menstruation-friendly toilets in schools. For example, in Kenya, a government policy introduced in 2017 mandates the free distribution of sanitary towels to public schoolgirls, helping reduce absenteeism and improve hygiene.

Despite these efforts, supply chain issues, insufficient funding, and lack of awareness continue to hinder sustainable access. Many girls are still unaware of reusable options like menstrual cups or washable pads, which could be more cost-effective in the long run.

In conclusion, ensuring access to affordable and hygienic menstrual products, along with supportive infrastructure, is essential for promoting menstrual hygiene among adolescents. Governments, NGOs, and communities must collaborate to remove barriers, improve infrastructure, and promote menstrual equity, particularly in school environments.

Cultural Taboos and Social Norms

Cultural taboos and social norms surrounding menstruation significantly influence how adolescent girls perceive and manage their menstrual health. In many societies, especially within Africa and Asia, menstruation is enveloped in secrecy, misinformation, and shame. According to House, Mahon, and Cavill (2012), menstruation is often regarded as unclean, resulting in harmful practices and social restrictions. These cultural beliefs discourage open discussion, perpetuate stigma, and prevent young girls from acquiring accurate information about their menstrual health.

In Nigeria, for instance, menstruating girls are frequently excluded from religious and cultural activities. Some communities even consider menstruating girls unfit to cook or enter certain areas of the household. These beliefs can cause girls to internalize shame and embarrassment, leading to low self-esteem and social withdrawal. As a result, many girls manage their periods in silence, using unhygienic materials due to fear of judgment or ridicule. This cultural silence directly hinders access to accurate knowledge and safe hygiene practices.

The study by House et al. (2012) also emphasizes that cultural attitudes often influence the willingness of parents, teachers, and health workers to discuss menstruation openly. In many cases, girls receive no formal education about menstruation before menarche, and when they do, the information is often incomplete or inaccurate. This lack of proper orientation can cause confusion, fear, and anxiety during their first menstruation, and often shapes how they manage it thereafter.

Furthermore, the taboo surrounding menstruation has implications for menstrual product access and use. In some cultures, purchasing sanitary pads is considered shameful, and girls may feel embarrassed to be seen with them. This may discourage them from buying or carrying menstrual products, even when they are available. These societal pressures can force girls to resort to less effective and unsafe materials, increasing their vulnerability to infections.

To address these deep-rooted cultural barriers, community-based education is crucial. Programs that engage parents, religious leaders, and community influencers have shown promise in changing attitudes and promoting positive behavioral change. For example, initiatives in India and Nepal that involved male family members and local leaders led to increased support for girls' menstrual needs and reduced stigma.

In conclusion, cultural taboos and social norms continue to shape menstrual hygiene management in ways that hinder adolescent girls' health and development. Addressing these issues requires a multi-pronged approach that includes education, open dialogue, and the active involvement of communities to normalize menstruation and promote dignity for all girls.

Impact of Menstrual Hygiene on School Attendance and Academic Performance

Menstrual hygiene plays a critical role in determining the educational experience of adolescent girls. Several studies have found a direct correlation between poor menstrual hygiene management (MHM) and reduced school attendance, concentration, and academic performance. According to a report by UNESCO (2014), one in ten girls in sub-Saharan Africa misses school during menstruation, which amounts to roughly 20% of the academic year. This absenteeism is often linked to lack of sanitary products, inadequate facilities, pain, and the fear of leakage or embarrassment in class.

In Nigeria, a study by Abioye-Kuteyi (2000) on menstrual practices among schoolgirls revealed that girls often stay away from school during their menstrual periods due to the fear of being mocked by classmates, especially in cases of stains. The lack of safe and private toilets, clean water, and sanitary products in schools only aggravates the issue. As a result, many girls fall behind in their studies, struggle with low self-esteem, and are more likely to drop out of school altogether.

Menstrual discomfort and dysmenorrhea (painful menstruation) also contribute to absenteeism. Girls who experience severe cramps may be unable to focus or participate in class activities. Without proper pain management or understanding of their condition, these girls are left to silently endure pain, which negatively impacts their academic engagement. Furthermore, emotional stress

and anxiety associated with menstruation may limit their class participation and peer interaction, further isolating them.

Efforts to improve menstrual hygiene infrastructure have shown significant educational benefits. In a study conducted by Montgomery et al. (2016) in Uganda, the introduction of menstrual cups and sanitary pads, coupled with health education, resulted in a 17% decrease in school absenteeism among girls. Schools that provide safe toilets, disposal facilities, and access to hygiene products create an enabling environment that encourages girls to attend regularly and participate confidently in school activities.

The psychological dimension cannot be overlooked. Adolescents who manage menstruation effectively tend to exhibit higher self-confidence and engagement in school. They are more likely to concentrate on their studies and interact positively with peers and teachers. Therefore, investment in menstrual health not only supports girls' physical well-being but also enhances their educational outcomes.

In conclusion, addressing menstrual hygiene challenges is essential for promoting gender equality in education. Improving access to sanitary products, school facilities, and menstrual education can significantly reduce absenteeism, enhance academic performance, and help girls reach their full potential in school settings.

Government and NGO Interventions on Menstrual Hygiene Management

Over the years, governments and non-governmental organizations (NGOs) have increasingly recognized the importance of menstrual hygiene management (MHM) as a public health and educational issue. Their interventions aim to address the physical, educational, and psychological barriers that poor menstrual hygiene creates for adolescent girls. These efforts include policy advocacy, product distribution, infrastructure development, and public awareness campaigns.

In Nigeria, government involvement in menstrual hygiene is relatively recent but growing. One notable intervention was the Federal Ministry of Women Affairs' collaboration with local partners

to promote menstrual hygiene awareness in schools through national campaigns such as the “Menstrual Hygiene Day” celebrated annually on May 28. These initiatives aim to educate girls about their menstrual cycles, proper hygiene practices, and the use of sanitary products. However, despite such efforts, implementation remains uneven due to limited funding, inadequate infrastructure, and insufficient training for teachers.

Non-governmental organizations have played a particularly critical role in filling the gap left by limited government action. NGOs like WaterAid Nigeria, Sanitary Aid Initiative, and Action Health Incorporated have launched successful programs focused on menstrual hygiene education and pad distribution to underprivileged girls. For instance, Sanitary Aid for Nigerian Girls has donated thousands of sanitary pads to girls in rural areas and educated them about safe practices through workshops and school visits. These efforts help dispel myths and foster open conversations about menstruation.

International NGOs and agencies, including UNICEF and UNESCO, have also partnered with Nigerian institutions to promote WASH (Water, Sanitation, and Hygiene) programs in schools. These include the construction of gender-sensitive toilets and the provision of menstrual hygiene materials. A report by UNICEF (2019) highlighted the success of its Girls’ Hygiene Friendly Schools Program, which significantly improved the attendance and confidence of adolescent girls in pilot schools across northern Nigeria.

However, challenges persist. Many interventions are not sustained long-term due to lack of consistent funding, political will, or community ownership. Some programs are restricted to urban or peri-urban schools, neglecting rural communities where the need is often greatest. Moreover, cultural barriers still hinder the effectiveness of educational campaigns in conservative areas, where menstruation is rarely discussed openly.

To maximize impact, experts recommend integrating menstrual hygiene into national education policies and curricula, ensuring that MHM is not treated as an occasional or external topic. Also,

partnerships between governments, civil society, and communities are essential to create sustainable change.

In conclusion, while government and NGO interventions have made commendable progress in menstrual hygiene management, sustained political commitment and community-based approaches are necessary to address the remaining gaps and ensure no girl is left behind.

Access to Sanitary Products and Economic Barriers

Access to affordable and safe sanitary products remains one of the most significant challenges in menstrual hygiene management, especially among adolescents in low- and middle-income countries. In Nigeria and many parts of Africa, the high cost of sanitary pads often prevents adolescent girls from maintaining proper hygiene during menstruation. Economic barriers, combined with a lack of awareness, compel many girls to use unhygienic alternatives such as rags, old clothes, newspapers, or even leaves, which can lead to infections and long-term health complications.

A study by PATH (2015) found that affordability is a critical barrier to consistent use of sanitary products. Many families living below the poverty line prioritize other basic needs, leaving adolescent girls to manage menstruation with inadequate resources. In Nigeria, where the majority of the population lives on less than \$2 a day, sanitary pads priced between ₦200 and ₦500 can be unaffordable for low-income households. This financial constraint disproportionately affects girls in rural areas who may also face supply chain limitations, making sanitary pads unavailable even when they can afford them.

The stigma surrounding menstruation also plays a role in limiting access. Girls often feel ashamed to ask for money to buy pads or fear being judged when seen purchasing them. As a result, they may suffer silently, skipping school or using unsafe alternatives. This cycle of silence and deprivation further isolates them and affects their health, confidence, and academic participation.

Efforts have been made to reduce these economic barriers. Some NGOs and local startups in Nigeria have developed reusable pads and menstrual cups as cost-effective and sustainable alternatives. Reusable products, if properly maintained, can serve girls for months or even years, significantly reducing long-term costs. However, challenges such as access to clean water for washing and social acceptance of these alternatives still persist.

Government policies can also influence accessibility. In several countries, including Kenya and India, governments have removed taxes on sanitary products or subsidized their distribution in schools. Nigeria still imposes value-added tax (VAT) on sanitary pads, which critics argue reinforces menstrual inequity. Advocacy groups continue to campaign for the removal of VAT and increased government funding for free sanitary product distribution in schools.

In conclusion, economic limitations significantly hinder adolescent girls' access to menstrual hygiene products in Nigeria. Addressing this issue requires a multifaceted approach involving product innovation, public education, tax reforms, and targeted government subsidies. Ensuring that sanitary products are affordable and accessible is a fundamental step toward safeguarding girls' health, dignity, and right to education.

Cultural Beliefs and Societal Attitudes Toward Menstruation

Cultural beliefs and societal attitudes play a significant role in shaping menstrual hygiene practices among adolescent girls, particularly in developing countries like Nigeria. Menstruation is often regarded as a taboo topic, and discussions around it are shrouded in secrecy and shame. These socio-cultural barriers contribute to misinformation, silence, and unhealthy practices that endanger the well-being of young girls.

In many Nigerian communities, menstruation is seen as impure or dirty. This perception results in harmful restrictions placed on menstruating girls, such as exclusion from religious activities, kitchens, and social gatherings. These taboos discourage open discussions between parents and daughters, teachers and students, and among peers, leading to a widespread lack of accurate

knowledge about menstrual health. Girls are often left to navigate menstruation alone, relying on hearsay or trial-and-error methods, which can result in anxiety and improper hygiene management.

Research by House et al. (2012) revealed that societal norms heavily influence how girls perceive and manage menstruation. In communities where menstruation is highly stigmatized, girls report feeling ashamed, scared, or embarrassed, especially when they experience their first period. Such negative emotions are compounded by the lack of support systems and information, which can have long-lasting effects on their mental and emotional well-being.

Furthermore, mothers—who are often the primary source of menstrual education—may also lack proper information due to generational silence and cultural myths. This results in the transmission of incomplete or inaccurate knowledge. For example, some girls are taught to avoid certain foods, physical activities, or interactions during menstruation, not based on medical advice, but on tradition or superstition. These beliefs can foster fear and reinforce harmful stereotypes about menstruation being a form of impurity or weakness.

Community attitudes also influence infrastructure and resource allocation. In places where menstruation is not openly discussed, schools and public institutions may neglect to provide gender-sensitive facilities such as private toilets, disposal bins, and access to sanitary products. This institutional neglect perpetuates the idea that menstruation is not a priority, further marginalizing girls and compromising their health and education.

Efforts to challenge and change cultural narratives around menstruation are gaining ground through advocacy, education, and community-based programs. Organizations like Days for Girls and Sanitary Aid Nigeria have launched culturally sensitive awareness campaigns that encourage open dialogue and normalize menstruation. These programs work with local leaders, teachers, and parents to dismantle myths and build supportive environments for girls.

In summary, cultural beliefs and societal attitudes significantly affect how adolescent girls experience menstruation. Breaking the cycle of stigma requires community education, inclusive

dialogue, and culturally informed interventions that promote dignity, health, and equality for all girls.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology adopted to conduct a statistical investigation of awareness and menstrual hygiene practices among adolescents in Ara, Lajolo, Elekoyangan, and Oyun communities. It outlines the research design, population and sample, sampling technique, data collection instruments, and the statistical techniques used in analyzing the data.

3.2 Statistical Techniques

The analysis was performed using the Statistical Package for the Social Sciences (SPSS), and it involved both descriptive and inferential statistics. The following statistical techniques were employed:

i. Descriptive Statistics

Descriptive statistics help summarize the basic features of the data and provide a simple overview of the sample and measures. In this study, descriptive analysis was conducted for key variables:

- **Mean (Average):** Measures the central tendency of frequency and duration usage.
- **Median:** The middle value in the dataset, helping to identify skewed distributions.
- **Range:** The difference between the maximum and minimum values, giving an idea of the spread.
- **Standard Deviation (SD):** Measures how spread out the numbers are in the dataset. A higher SD indicates more variability among respondents.

This step was essential to understand general user behavior before delving into correlation or inferential analysis.

Crosstabulation (Cross-tab Analysis)

Crosstabs were used to explore the relationships between two categorical variables. This analysis helped to visualize how variables such as awareness levels and menstrual hygiene practices are distributed across different groups (e.g., communities or age categories).

No specific formula is used in SPSS for crosstabulation since it is a tabular display of frequencies; however, it forms the basis for the Chi-square test.

Chi-Square Test of Independence (χ^2)

To test for statistical association between awareness and proper hygiene practices, the Chi-square test of independence was applied.

Steps in Conducting the Chi-Square Test

1. **Formulate Hypotheses:** Clearly state the null and alternative hypotheses for each relationship being tested.
2. **Set Significance Level:** Typically, a significance level of 0.05 is used ($\alpha = 0.05$). If the p-value obtained from the chi-square test is less than 0.05, the null hypothesis will be rejected.
3. **Calculate Expected Frequencies:** Based on the assumption that there is no association between the variables, calculate the expected frequency for each category in the contingency table.
4. **Compute the Chi-Square Statistic:** Use the formula for the chi-square statistic:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

- Where:
 - O is the observed frequency
 - E is the expected frequency

Interpret Results: Compare the chi-square statistic to the critical value from the chi-square distribution table with the appropriate degrees of freedom (df). If the computed chi-square statistic is greater than the critical value, the null hypothesis is rejected, indicating a significant association.

3.3 Data Source

The data used in this research work is primary data (Questionnaire) and administered in the Ara, Lajolo, Eleko-yangan and Oyun Community.

3.4 Data presentation

The data used in this research work is primary data (Questionnaire) and administered in the Ara, Lajolo, Eleko-yangan and Oyun Community. And can be view in Appendix I

CHAPTER FOUR

DATA ANALYSIS

4.1 DATA ANALYSIS

This study aims to examine the menstrual hygiene practices among adolescents and identify the key factors influencing their behaviors. It also seeks to evaluate the extent of menstrual hygiene education, barriers faced in practicing proper hygiene, and the role of peer education in promoting safe practices. The findings offer valuable insights into the current menstrual hygiene status among adolescents in Kwara State and provide evidence for designing effective interventions to support adolescent girls in managing menstruation with dignity and safety.

Table 1: Social Demographic Characteristics

Variable	Frequency	Percentage
Age		
14 years	38	7.7
15 years	62	12.6
16 years	69	14.1
17 years	74	15.1
18 years	170	34.6
19 years	78	15.9
Age At Menarche		
10 years	2	0.4
11 years	12	2.4
12 years	59	12.0
13 years	122	24.8
14 years	131	26.7

15 years	107	21.8
16 years	35	7.1
17 years	15	3.1
18 years	8	1.6

The age distribution of the respondents revealed that the majority were 18 years old (34.6%), followed by those aged 19 years (15.9%), 17 years (15.1%), and 16 years (14.1%). The youngest group, aged 14 years, represented only 7.7% of the sample. This suggests that the sample largely consisted of older adolescents, which is important for understanding the maturity and menstrual experiences of the participants. Regarding the age at menarche, the majority of respondents reported experiencing their first menstruation between 13 and 14 years, accounting for 24.8% and 26.7%, respectively. Very few experienced menarche at 10 years (0.4%) or as late as 18 years (1.6%). This indicates that the onset of menstruation among the respondents generally falls within the typical age range expected in adolescent girls.

Table 2: Menstrual Cycle Characteristics

Variable	Frequency	Percentage
Menstrual Cycle Length		
18 days	1	0.2
21 days	5	1.0
22 days	1	0.2
23 days	78	15.9
24 days	107	21.8
25 days	192	39.1
26 days	32	6.5
27 days	26	5.3
28 days	33	6.7
29 days	11	2.2
30 days	3	0.6
31 days	1	0.2
35 days	1	0.2
Menstrual Period duration		
2 days	1	0.2
3 days	90	18.3

4 days	141	28.7
5 days	180	36.7
6 days	56	11.4
7 days	17	3.5
8 days	5	1.0
9 days	1	0.2

In terms of menstrual cycle length, the findings show that most respondents had a cycle of 25 days (39.1%), followed by those with 24-day (21.8%) and 23-day (15.9%) cycles. Very few reported unusually short or long cycles, with minimal percentages for 18, 22, 30, 31, and 35 days. This suggests that the majority of the respondents had menstrual cycles within the normal range (21–35 days) as defined medically. Regarding menstrual period duration, most participants reported menstruating for 5 days (36.7%) and 4 days (28.7%), which is considered normal. A smaller group reported periods lasting 6 days (11.4%) or longer (7–9 days), while only 0.2% reported very short periods of 2 days. Overall, the menstrual duration data indicate that most girls experience a normal menstrual flow length, with a few exceptions requiring further attention for possible menstrual health concerns.

Table 3: Menstrual Hygiene Management Practices

What type of menstrual product do you use		
disposable sanitary pads	369	75.2
menstrual cups	10	2.0
Other	1	.2
Reusable cloth pads	100	20.4
Tampons	11	2.2
disposable sanitary pads	369	75.2
How often do you change your menstrual product during the day		
Can't Say	5	1.0
every 2-4hours	280	57.0
every 4-6 hours	134	27.3

more than 6 hours	72	14.7
Enough Menstrual Materials to change as often as you wanted		
No	82	16.7
Yes	409	83.3
I wash my hands before and after changing menstrual		
No	6	1.2
Sometimes	81	16.5
yes, always	404	82.3
How do you clean your genital area during menstruation		
Other	4	.8
soap and water	258	52.5
water only	213	43.4
Wipes	16	3.3
How do you dispose your used menstrual Product		
burying them	107	21.8
flushing them down the toilet	205	41.8
In a bin	97	19.8
Other	82	16.7
burying them	107	21.8

The use of menstrual products among respondents showed that disposable sanitary pads were the most popular choice, used by 75.2% of participants. Reusable cloth pads were used by 20.4%, while the use of tampons (2.2%) and menstrual cups (2.0%) remained very low. This reflects a strong preference for disposable sanitary pads, possibly due to ease of use, accessibility, and cultural acceptance. On the frequency of changing menstrual products, 57.0% of respondents changed every 2–4 hours, which aligns with recommended hygienic practices. However, 14.7% changed their products only after more than 6 hours, which may increase the risk of infections. The majority (83.3%) reported having enough menstrual materials to change as needed, but 16.7%

still experienced shortages, highlighting a significant issue regarding access to menstrual products. In terms of hand hygiene, 82.3% always washed their hands before and after changing, while 16.5% did so sometimes, and 1.2% did not, pointing to the need for improved emphasis on hygiene practices during menstruation.

Table 4 : Menstrual Hygiene Safety and Privacy

Do you feel safe while changing your menstrual materials		
No	20	4.1
Yes	471	95.9
Do you change your menstrual materials clean and private?		
No	3	.6
Sometimes	53	10.8
yes,always	435	88.6

The analysis of menstrual hygiene safety showed that an overwhelming 95.9% of respondents felt safe while changing their menstrual materials, with only 4.1% reporting feeling unsafe. This suggests that most adolescents have access to relatively secure environments during menstruation. Similarly, when asked about the cleanliness and privacy of the places where they change their menstrual materials, 88.6% reported that they always used clean and private spaces, 10.8% sometimes, and only 0.6% never had access to such spaces. Although the majority had positive experiences, the small group who did not consistently have clean and private spaces deserves attention, as this may impact their menstrual hygiene practices and comfort.

Table 5: Menstrual Hygiene Knowledge and Barriers

Have you received any education about menstrual hygiene		
No	87	17.7

Yes	404	82.3
What barrier do you face regarding menstrual hygiene		
lack of access to products	266	54.2
lack of knowlwdge about proper hygiene practices	69	14.1
lack of privacy in changing areas	138	28.1
Others	18	3.7

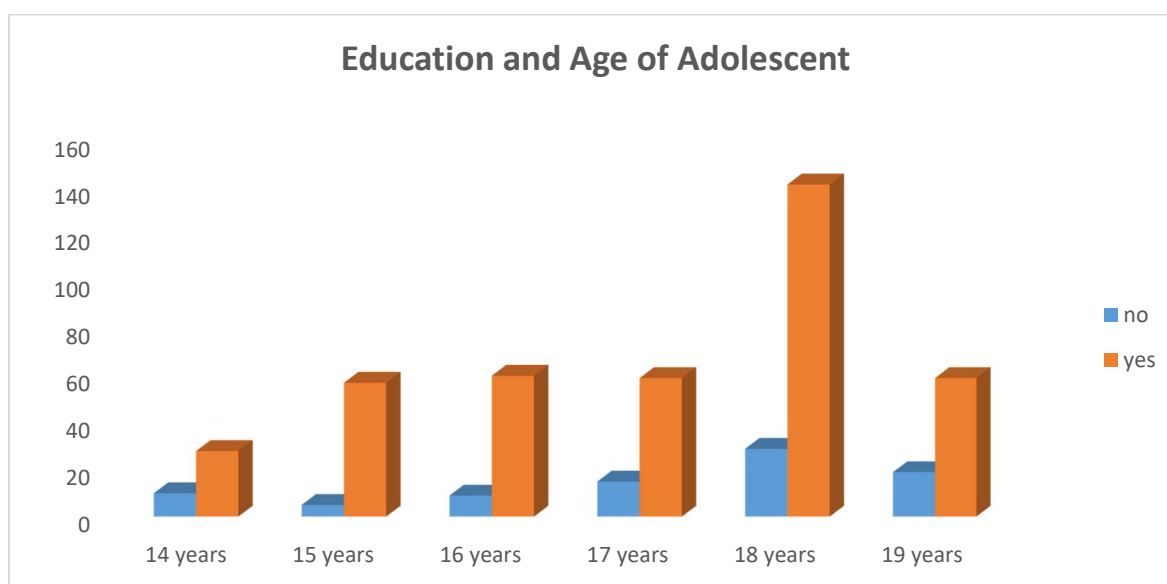
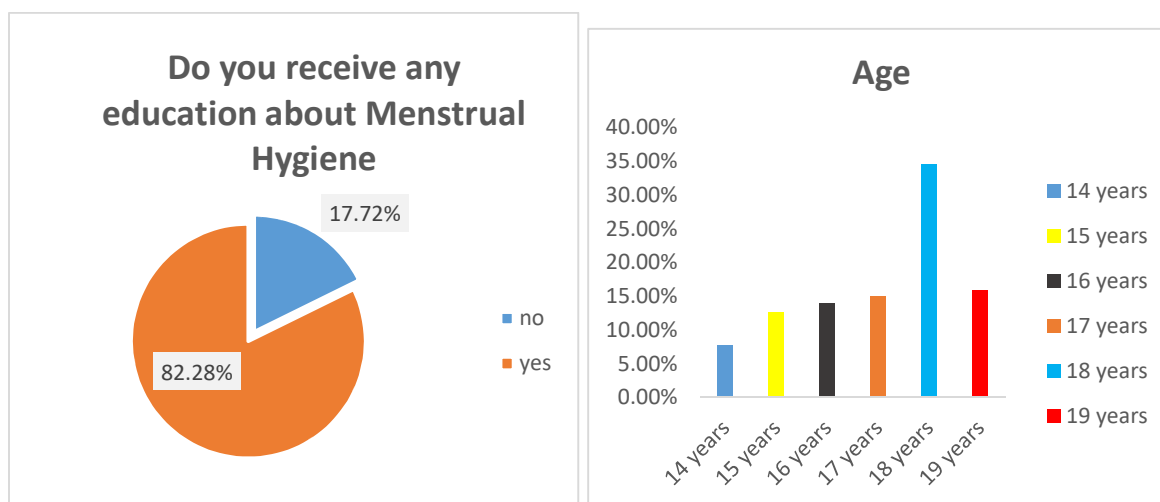
When asked about menstrual hygiene education, 82.3% of respondents indicated that they had received education on the subject, while 17.7% had not. This highlights the relatively strong presence of menstrual health education but also points to the need for further expansion, particularly targeting the minority without adequate information. Regarding barriers to practicing good menstrual hygiene, the most common barrier identified was the lack of access to menstrual products (54.2%), followed by lack of privacy in changing areas (28.1%) and lack of knowledge about proper hygiene practices (14.1%). A small percentage (3.7%) identified other barriers. These findings emphasize the multifaceted challenges adolescents face in managing their menstruation, and they underline the importance of comprehensive interventions that address product access, education, and the creation of private facilities.

Assessment of the level of knowledge about menstrual hygiene among adolescents in rural and urban areas of Kwara State

Hypothesis Testing

Null Hypothesis: There is no significant association between the age of adolescents and their access to menstrual hygiene education.

Alternative Hypothesis: There is no significant association between the age of adolescents and their access to menstrual hygiene education.



		Do you receive any education about menstrual hygiene		Total
		No	yes	
age	14 years	10	28	38

	15 years	5	57	62
	16 years	9	60	69
	17 years	15	59	74
	18 years	29	141	170
	19 years	19	59	78
Total		87	404	491

Chi-Square Test

Chi-Square Value	Df	P-value
9.665	5	0.085

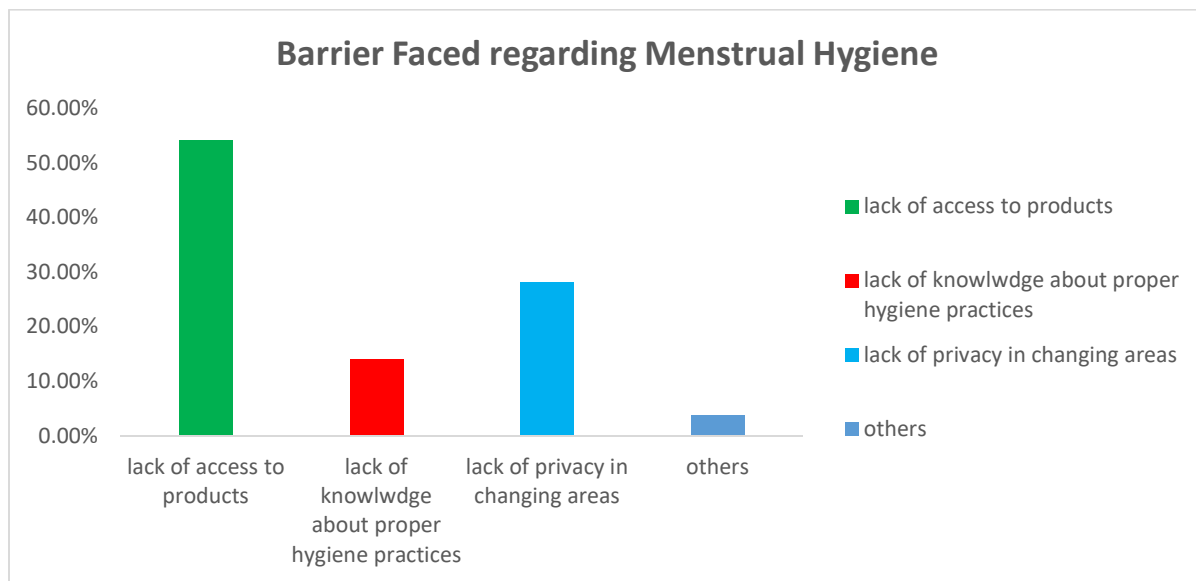
The analysis of the respondents' knowledge about menstrual hygiene shows that a large majority (82.3%) reported having received education about menstrual hygiene, while only 17.7% indicated they had not received any form of education. This finding suggests a generally high level of awareness and exposure to menstrual hygiene information among adolescents in Kwara State. It highlights that menstrual hygiene education programs whether through schools, health centers, or other means have reached a significant portion of the adolescent population.

Further analysis using the Chi-square test examined whether there was an association between adolescents' age and their access to menstrual hygiene education. The test produced a Chi-square value of 9.665 with 5 degrees of freedom and a p-value of 0.085. Since the p-value is greater than the standard significance level of 0.05, we fail to reject the null hypothesis, suggesting that age is not significantly associated with whether an adolescent has received menstrual hygiene education. In other words, this means that the high level of knowledge observed is consistent across different age groups, implying that educational efforts may have been evenly distributed among adolescents regardless of their age.

Overall, the findings point to a positive outcome in menstrual hygiene education initiatives in Kwara State, though the small proportion of adolescents who have not received such education (17.7%) still warrants attention to ensure full coverage and equity, particularly when expanding to rural and harder-to-reach areas

Assessment of the barrier faced by adolescents in practicing good menstrual hygiene

Understanding the barriers that adolescents face in maintaining good menstrual hygiene is crucial for developing effective interventions. The data from this study reveal several challenges encountered by adolescent girls in Kwara State.



The most commonly reported barrier was lack of access to menstrual hygiene products, cited by 54.2% of respondents. This indicates that more than half of the adolescents experience difficulty in obtaining essential menstrual materials such as sanitary pads, tampons, or menstrual cups. The limited availability or affordability of these products may significantly hinder their ability to practice good hygiene during menstruation.

Another major barrier identified was the lack of privacy in changing areas, reported by 28.1% of the respondents. This finding suggests that a considerable number of adolescents do not have access to safe, clean, and private spaces to change their menstrual materials, which could lead to feelings of insecurity, discomfort, and increased risk of infections.

Additionally, 14.1% of adolescents reported a lack of knowledge about proper hygiene practices as a barrier. This highlights the gap in menstrual health education for a section of the population, emphasizing the need for continuous and targeted education campaigns to improve awareness about safe menstrual hygiene practices.

A small proportion (3.7%) of respondents indicated other barriers, which may include cultural taboos, stigma, or individual-specific challenges not captured in the main categories.

Overall, the results point to accessibility of products, adequate privacy, and hygiene education as critical areas that require attention. Addressing these barriers is essential for empowering adolescent girls to manage their menstruation safely and with dignity.

CHAPTER FIVE

SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATION

5.1 Summary of Findings

This study investigated the level of awareness and menstrual hygiene practices among adolescents in Kwara State. Data were collected through structured questionnaires and analyzed using descriptive statistics and chi-square tests.

The findings are summarized as follows:

1. **Awareness Level:** A significant proportion (82.3%) of adolescents reported having received education on menstrual hygiene, mostly from schools and health campaigns. However, gaps in comprehensive knowledge still exist.
2. **Age of Menarche:** The average age of menarche was between 13 and 14 years, which is consistent with national and global trends. Most respondents started menstruating within this age range.
3. **Menstrual Cycle and Duration:** The majority of respondents had menstrual cycles within the normal range of 21 to 35 days and reported an average flow duration of 4 to 5 days.
4. **Hygiene Practices:** Most adolescents used disposable sanitary pads, washed their hands regularly during menstruation, and had access to soap and water. However, a small proportion still used less hygienic materials like cloths or tissue paper.
5. **Barriers to Hygiene:** The key challenges faced by adolescents in managing menstruation included lack of access to sanitary products (54.2%), lack of privacy (28.1%), and insufficient knowledge (14.1%).

6. **Statistical Analysis:** The chi-square test revealed no significant relationship between age and access to menstrual hygiene education ($p = 0.085$), indicating relatively equal educational access across age groups.

5.2 Conclusion

The study reveals that while awareness of menstrual hygiene is relatively high among adolescents in Kwara State, significant challenges still hinder effective menstrual management. The predominant use of sanitary pads and good hygiene practices among the majority is encouraging, but issues like affordability of sanitary products, lack of private spaces, and knowledge gaps remain persistent barriers.

Addressing menstrual hygiene management is crucial not only for promoting the health and well-being of adolescent girls but also for enhancing school attendance, reducing menstrual-related stigma, and promoting gender equity. The results of this study underscore the need for coordinated efforts from policymakers, schools, health institutions, and communities to improve menstrual health outcomes for adolescents.

5.3 Recommendations

Based on the findings of this research, the following recommendations are proposed:

1. **Subsidized or Free Menstrual Products:** The government and NGOs should collaborate to provide free or subsidized sanitary products to adolescents, especially in public schools and low-income communities.
2. **Comprehensive Menstrual Education:** Menstrual hygiene education should be integrated into school curricula at an early stage and delivered with accurate, age-appropriate, and culturally sensitive content.
3. **Improved Sanitation Facilities:** Schools should ensure the availability of clean, private, and well-equipped toilet facilities with water and soap to support menstrual hygiene management.

4. **Community Engagement:** Parents, teachers, and community leaders should be sensitized to reduce menstrual stigma and promote open discussions on menstrual health.
5. **Healthcare Support:** Local health centers should provide counseling and medical support for adolescents experiencing menstrual difficulties, including irregular cycles or infections.
6. **Further Research:** More in-depth, large-scale studies should be conducted to explore menstrual hygiene practices across different regions, including rural versus urban settings.

By implementing these recommendations, stakeholders can significantly improve the menstrual health and overall well-being of adolescents in Kwara State.

REFERENCES

- Adika, V. O., Yabefa, J. A., & Apiyanteide, F. A. (2011). Perception and behavior on use of sanitary pads during menstruation among adolescent school girls in Bayelsa State, Nigeria. *Advances in Applied Science Research*, 2(6), 9–15.
- Ahmed, H. M., Ali, A. A. A., & Mohamed, E. S. (2020). Menstrual hygiene practices and associated factors among secondary school girls in Khartoum, Sudan. *BMC Women's Health*, 20(1), 49. <https://doi.org/10.1186/s12905-020-00914-4>
- Akanle, O., & Olutayo, A. O. (2013). Managing menstruation in Nigerian secondary schools: The roles of mothers, teachers, and peers. *Gender and Behaviour*, 11(2), 5457–5473.
- Babatunde, O. A., & Olaoye, E. A. (2017). Menstrual hygiene practices among school girls in Osun State, Nigeria: Implications for school health programmes. *Nigerian Journal of Medicine*, 26(3), 227–232.
- Dasgupta, A., & Sarkar, M. (2008). Menstrual hygiene: How hygienic is the adolescent girl? *Indian Journal of Community Medicine*, 33(2), 77–80. <https://doi.org/10.4103/0970-0218.40872>
- El-Gilany, A. H., Badawi, K., & El-Fedawy, S. (2005). Menstrual hygiene among adolescent schoolgirls in Mansoura, Egypt. *Reproductive Health Matters*, 13(26), 147–152. [https://doi.org/10.1016/S0968-8080\(05\)26191-8](https://doi.org/10.1016/S0968-8080(05)26191-8)
- Federal Ministry of Health. (2015). *National Guidelines for School Health Programme*. Abuja:

Government of Nigeria.

House, S., Mahon, T., & Cavill, S. (2012). *Menstrual hygiene matters: A resource for improving menstrual hygiene around the world.* WaterAid.
<https://washmatters.wateraid.org/publications/menstrual-hygiene-matters>

Iliyasu, Z., Galadanci, H. S., Abubakar, I. S., & Aliyu, M. H. (2012). Menstrual hygiene among adolescent girls in Kano, Nigeria. *Nigerian Journal of Clinical Practice*, 15(1), 64–68.

Mahon, T., & Fernandes, M. (2010). Menstrual hygiene in South Asia: A neglected issue for WASH (water, sanitation and hygiene) programmes. *Gender & Development*, 18(1), 99–113. <https://doi.org/10.1080/13552071003600083>

Oche, M. O., Umar, A. S., & Gana, G. J. (2012). Menstrual health: The unmet needs of adolescent girls in Sokoto, Nigeria. *Scientific Research and Essays*, 7(3), 410–418.

Omuemu, V. O., Adamu, H., & Omuemu, C. E. (2006). Knowledge, attitude and practice of adolescent school girls towards menstrual hygiene in rural communities. *Nigerian Journal of Community Medicine and Primary Health Care*, 18(1), 8–13.

Orij, V. K., Omietimi, J. E., & Adetoye, D. (2010). Menstrual pattern among adolescent school girls in Port Harcourt, Nigeria. *Nigerian Journal of Medicine*, 19(4), 419–423.

UNICEF. (2019). *Guidance on menstrual health and hygiene.*
<https://www.unicef.org/documents/guidance-menstrual-health-and-hygiene>

World Health Organization. (2018). *Adolescent health: Menstrual hygiene management.*
https://www.who.int/maternal_child_adolescent/adolescence/menstrual-hygiene/en/

