THE EFFECT OF THE ACCESSIBILITY TO MENSTRUAL PRODUCTS YOUNG GIRLS' HEALTH AND EDUCATION IN NIGERIA

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Abstract

This study explores the profound impact of accessibility to menstrual products on the health and education of young girls. The problem is framed around the significant barriers young girls face in accessing safe, affordable, and effective menstrual products, leading to severe health implications and educational setbacks. Using a theoretical framework that integrates gender inequality and social determinants of health, this research investigates the physical, psychological, and social dimensions of menstrual health. Employing quantitative and qualitative methods of data collection, the study utilized 363 questionnaires and 10 in-depth interview which ensured the study gathered rich and robust data from young girls and women, capturing their personal experiences and struggles with menstrual hygiene management. The findings reveal that inadequate access to menstrual products often results in reproductive tract infections and other health complications due to poor hygiene practices. Educationally, many girls miss school during their periods, leading to lower academic performance and widening gender disparities. The pervasive stigma and social taboos surrounding menstruation further exacerbate psychological distress and social exclusion. Based on these findings, the study recommends comprehensive policy interventions to ensure the availability of menstrual products, community engagement to break down stigmas, and education programs to promote menstrual health awareness. This research highlights the critical importance of accessible menstrual products in enhancing the overall well-being of young girls, advocating for sustained efforts to eliminate barriers and promote gender equality, thereby enabling young girls to lead healthier, more empowered lives.

Keywords: Education, Health, Menstrual products, Social stigma, Young girls.

Introduction

Menstrual health and hygiene are crucial components of women's health, significantly impacting their physical, mental, and social well-being. Menstrual health refers to complete physical, mental, and social well-being related to menstruation. It encompasses not only access to menstrual products but also proper sanitation facilities, adequate education, and a supportive environment free from stigma and discrimination. Throughout history, menstrual hygiene practices have varied significantly across cultures and regions. According to the World Bank (2022), over 300 million women worldwide are menstruating at

any given time, with an estimated 500 million lacking access to adequate menstrual products and facilities for menstrual hygiene management (MHM).

Before the industrial revolution, women used various materials such as cloth, wool, and plant fibers to absorb menstrual blood. These materials' accessibility and effectiveness were influenced by factors like climate, geography, and cultural norms (Van Eijk et al., 2019). In many cultures, menstruation was surrounded by taboos and myths, often leading to isolation and restrictive practices for menstruating women and girls. The industrial revolution marked a significant shift in menstrual hygiene practices. Advancements in manufacturing processes led to the mass production of disposable menstrual hygiene products like pads and tampons. Early commercial pads and tampons became available in the late 19th and early 20th centuries, primarily targeting urban populations in developed countries (Hennegan et al., 2020).

In recent years, menstrual hygiene has gained well-deserved recognition as a vital aspect of women's health and gender equality within global health initiatives. Research by both I et al. (2021) and Van der Meulen et al. (2021) highlights the efforts of organizations like UNICEF, WHO, and NGOs in improving access to menstrual hygiene products. These efforts involve education, advocacy, and distribution programs aimed at empowering women and girls. However, significant challenges remain, particularly in reaching rural communities. Logistical difficulties and cultural sensitivities can create barriers to implementing effective programs. Furthermore, recent research by Mahajan et al. (2020) and Kuhlmann et al. (2021) has shed light on the environmental impact of disposable menstrual products. This growing awareness has led to a call for more sustainable alternatives, such as menstrual cups and reusable pads. These options are particularly crucial in rural areas with limited waste management infrastructure.

Menstruation, also known as a period, is a natural and essential biological process unique to women and some female mammals. It signifies a woman's reproductive maturity and potential for pregnancy. This cyclical event involves the shedding of the lining of the uterus, called the endometrium, along with blood and tissue, which exits the body through the vagina. Research by Farland et al. (2020) explains that menstruation is controlled by a symphony of hormonal changes, particularly estrogen and progesterone. These hormones fluctuate throughout the menstrual cycle, triggering a complex series of events within the female reproductive system. This delicate dance ultimately leads to the shedding of the uterine lining, typically occurring every 28 days for women of reproductive age. From a health perspective, menstruation is a valuable indicator of a woman's reproductive health and hormonal balance. It acts as a natural marker of fertility and overall well-being, reflecting the intricate interplay between hormones and reproductive function. Sommer et al. (2021) emphasize the importance of understanding menstruation as a fundamental aspect of women's health, not just a monthly inconvenience. By monitoring menstrual cycles, women can gain valuable insights into their reproductive health and potential issues.

In Africa, the accessibility of menstrual products is a critical factor influencing the health and education of young girls. Across the continent, millions of girls face challenges in managing their menstrual hygiene due to limited access to

affordable and quality menstrual products, inadequate sanitation facilities, and cultural taboos surrounding menstruation. Many African societies view menstruation as taboo or shameful, which contributes to a lack of open dialogue and education about menstrual health. This stigma often leads to girls feeling embarrassed or ashamed, impacting their self-esteem and ability to manage their periods effectively. Without access to proper menstrual products, such as pads or menstrual cups, girls may resort to using unsanitary materials like old rags or leaves, increasing their risk of infections and other health complications. Studies and reports from various African countries have emphasized on the widespread nature of these challenges. For instance, research conducted by Hennegan et al. (2020) in rural communities of sub-Saharan Africa highlighted how menstrual hygiene practices affect school attendance and academic performance among girls. The study revealed that many girls miss school during their periods due to discomfort or lack of adequate menstrual products, which ultimately hinders their educational progress.

In Nigeria, the issue of menstrual product accessibility for young girls has significant cultural, social, and economic dimensions. Menstruation is often shrouded in secrecy and shame. Openly discussing periods is considered taboo in some communities, leading to a lack of education and awareness about menstrual hygiene practices. This silence can prevent girls from seeking help or accessing menstrual products. Some traditional beliefs associate menstruation with spiritual impurity, leading to restrictions on girls' activities during their periods. This can further limit their access to education and participation in daily life. Adanu et al., (2021) explore the prevalence of period poverty and its consequences for girls in specific regions. Additionally, advocacy groups like the "Pads4Life Nigeria" organization work to raise awareness, tackle stigma, and improve access to menstrual products for schoolgirls.

Statement of the Problem

On a global scale, a lack of proper infrastructure, particularly in rural regions, creates significant barriers to accessing essential WASH (Water, Sanitation, and Hygiene) facilities. This has a disproportionate impact on women and girls, specifically those who need clean water, private toilets, and proper waste disposal systems to manage their menstrual cycles hygienically and with dignity (Caruso et al., 2019).

Commercially produced pads have become so expensive, particularly for those living in poverty. A 2019 study in Uganda highlighted the financial burden, with girls resorting to using unsafe alternatives due to lack of access to affordable pads (Hennegan et al., 2020). The cost of menstrual products can be prohibitive, leading to the use of less effective and unhygienic materials. Proper menstrual products help prevent infections and maintain good hygiene. Lack of access to clean and effective menstrual products can lead to the use of unhygienic alternatives, increasing the risk of reproductive tract infections and other health issues (Sommer et al., 2016). Menstrual health management is directly linked to school attendance and academic performance. Studies show that girls who lack access to menstrual products are more likely to miss school during their periods. This absenteeism can result in lower academic achievements and, eventually, higher dropout rates (Montgomery et al., 2016).

Menstruation can be a source of anxiety and embarrassment for young girls, particularly in cultures where it is stigmatized. Access to reliable menstrual products helps reduce stress and boosts self-esteem, enabling girls to participate confidently in daily activities, including school and social events (Chandra-Mouli & Patel, 2017). The issue of unsafe menstrual hygiene practices is not limited to a single region. A recent study conducted in Indonesia highlights this global concern. The study found that a significant portion (64%) of participants faced difficulties in managing their periods safely (Smith, et. al, 2023). This highlights the urgent need for coordinated efforts to address this issue on a global scale. Furthermore, cultural context plays a crucial role in shaping menstrual hygiene practices. Research conducted in Egypt (ElGilany, Badawi, & El-Fedawy, 2005) sheds light on the significant influence of social norms and stigma. Societal expectations often dictate what is considered acceptable behavior, and unfortunately, menstruation is frequently shrouded in secrecy and shame in many cultures. ElGilany et al. (2005) further pointed out, that this leads to the continuation of practices that can be harmful to women's health and well-being.

In a study conducted in Kenya by Mason et al. (2021), findings mirrored those in Indonesia, revealing significant challenges in menstrual hygiene management. The study reported that a substantial number of participants faced difficulties in accessing adequate menstrual products and engaging in hygienic practices during their periods. These challenges are exacerbated by socio-economic factors, limited infrastructure, and cultural norms that perpetuate stigma and hinder open discussions about menstrual health. In Nigeria, the issue of inadequate menstrual hygiene management is a significant public health concern, impacting the health, education, and dignity of women and girls across the country. A study conducted by Adekunle et al. (2020) shed light on the challenges faced by Nigerian women and girls in managing their menstrual hygiene effectively. The study revealed that a considerable number of participants encountered difficulties due to limited access to affordable and quality menstrual products, as well as cultural taboos surrounding menstruation.

According to Adekunle et al. (2020), these challenges are exacerbated in rural areas where infrastructure and educational resources are often lacking. Many girls resort to using unsafe alternatives such as old cloths or even leaves, which can lead to health complications including infections and reproductive health issues. The study emphasized the need for comprehensive menstrual hygiene education, improved access to affordable and sustainable menstrual products, and the dismantling of cultural barriers that perpetuate stigma and shame.

The study hypothesis are as follows:

Hypothesis 1

Null Hypothesis (H0): There is no significant association between educational level and the accessibility of menstrual hygiene products.

Alternative Hypothesis (H1): There is a significant association between educational level and the accessibility of menstrual hygiene products.

Hypothesis 2

Null Hypothesis (H0): There is no significant association between cultural beliefs and practices and the accessibility of menstrual hygiene products.

Alternative Hypothesis (H1): There is a significant association between cultural beliefs and practices and the accessibility of menstrual hygiene products.

Theoretical Framework: Social Determinants of Health

The idea that health is influenced by more than just medical factors gained traction in the late 1900s. This concept, known as the Social Determinants of Health (SDH), arose as a challenge to traditional medical models that focused mainly on individual choices and medical treatments. Researchers and public health experts began recognizing the significant impact of social, economic, and environmental conditions on health outcomes.

The World Health Organization (WHO) played a key role in promoting the SDH framework. Their influential reports, "Health for All" (1978) and "The Ottawa Charter for Health Promotion" (1986), stressed the importance of tackling social and economic inequalities to improve health for everyone. Sir Michael Marmot, a prominent figure in the SDH field, conducted groundbreaking research, like the Whitehall Studies, that revealed the connection between social class and health. His work, along with others like Nancy Krieger, Ichiro Kawachi, and Sir Richard Wilkinson, highlighted the role of social and economic disparities in shaping health variations across populations. These researchers have pushed for policies and interventions that address these underlying inequalities.

The SDH theory makes some key assumptions about health.

First, it rejects the idea that health is simply a matter of individual choices or genes. Instead, it proposes that a complex mix of social, economic, environmental, and political factors play a major role in shaping health outcomes.

Second, the theory suggests that health inequalities aren't random. They stem from unequal access to resources, opportunities, and power across different social groups. This unequal distribution leads to some people being more exposed to factors that promote health, while others face more health risks.

Finally, the SDH theory argues that fixing these inequalities requires going beyond the doctor's office. It calls for broad interventions that address the root causes in society, such as poverty, education, housing, jobs, and social support networks. By tackling these wider issues, we can create a fairer and healthier society for everyone.

Understanding why some women struggle with period hygiene requires looking beyond individual choices. The social determinants of health (SDH) framework sheds light on the complex reasons behind this issue.

One key factor is socioeconomic status (SES). Low-income women and girls often can't afford to buy menstrual products regularly. This financial hardship can also limit access to clean water and sanitation facilities, which are essential for good hygiene during menstruation.

Women and girls with limited education may not know about proper menstrual hygiene practices or the importance of using appropriate products. Educational programs can empower them with the information they need to make informed choices and stay healthy.

The people around us can also significantly impact our health. Women with strong social networks are more likely to access menstrual products and get help managing their periods. However, social stigma and cultural taboos can prevent women from seeking support, creating a barrier to good hygiene.

The environment plays a role too. Lack of access to safe and clean toilets, along with inadequate water and waste disposal systems, makes it difficult for women to manage their periods hygienically. Addressing these environmental barriers is crucial for creating a dignified and healthy experience.

Underlying everything is gender. In societies that prioritize men's needs, women's reproductive health, including access to menstrual products, often gets neglected. Challenging these inequalities and creating gender-sensitive policies and programs is essential to ensure all women have the right to manage their periods comfortably and safely.

Strengths of the Social Determinants of Health (SDH) Theory:

A Multifaceted View of Health: SDH goes beyond individual choices or genes. It considers a broad spectrum of social, economic, environmental, and political factors that all play a part in health outcomes. This holistic approach helps us see the bigger picture.

Bridging the Gap in Health Equity: The framework exposes the social inequalities that create health disparities. By understanding these inequalities, policymakers and public health professionals can develop targeted interventions to address the root causes and create solutions that benefit everyone, not just the privileged few.

Empowering Marginalized Communities: SDH theory shines a light on the underlying social structures that impact health. This empowers marginalized communities to understand and advocate for change. It helps shift the focus from blaming individuals to addressing the systemic issues that create health inequities.

Breaking Down Silos: SDH encourages collaboration between different fields. Health professionals, social scientists, policymakers, and community members can all work together. This interdisciplinary approach leads to a richer understanding of health determinants and fosters creative solutions that break down traditional barriers.

Weaknesses of the Social Determinants of Health (SDH) Theory:

Complexity Can Be a Challenge: The sheer number of social determinants and how they interact with each other can make studying and applying SDH theory difficult. Measuring the exact impact of social factors on health requires complex research methods.

Individual Choices Matter Too: Some critics argue that SDH theory focuses too much on social factors and neglects individual choices. While our social environment plays a big role, people do have some agency and make decisions within their circumstances.

Beyond Simple Cause and Effect: Another critique is that SDH theory can sometimes oversimplify complex social issues. It might portray social determinants as having a direct, cause-and-effect relationship with health, which isn't always the case. The reality is more nuanced and depends on specific contexts.

Facing Resistance: Perhaps the biggest challenge is that addressing social determinants often means confronting powerful groups and well-established systems. Efforts to create a more equitable health system through structural changes may face opposition from those who benefit from the current way things are.

Research Methodology

The research methodology for this study involves conducting quantitative and qualitative data collection techniques with questionnaires and in-depth interview guide as instruments of data collection. The study utilized questionnaires retrieved and 10 in-depth interview sessions with local rural girls and women using an interview guide in Hospital, Puje and Pwadzu wards of Wukari Local Government Area. The in-depth Interview Guide was crafted to cover key topics such as access to menstrual products, challenges faced, coping strategies, and perceived impacts on health and education. Quantitative data allows researchers to make generalizations about a larger population from a smaller sample group. This is achieved by collecting data through surveys, questionnaires, or experiments that can be statistically analyzed to identify trends and patterns. Qualitative research is also chosen to deeply explore and understand the perspectives and experiences of participants, providing rich, nuanced insights into the issue at hand. Qualitative interviews are selected to capture the lived experiences and perceptions of local rural women regarding menstrual product accessibility. Participants include girls and women from different socio-economic backgrounds, ages, and educational levels to capture diverse perspectives such as school children, housewives, teachers, female community leaders etc.

Prior to the survey, participants are informed about the study's purpose, confidentiality measures, and their right to withdraw. Further steps were taken to ensure anonymity of participants and confidentiality of data shared during interviews and analysis.

Sample Size

$$n = \frac{Z^2 \ P_X (1-P)}{\left(\frac{E^2}{N} + Z^2 P_X (1-P)\right)}$$

Where,
N is the population size
Z is the z-score
e is the margin of error
p is the standard of deviation
The Sample Size can be calculated as

$$= \frac{Z^2 \ P_X (1-P)}{d^2} = \frac{(1.96)^2 X (0.50 x 0.50)}{(0.50)^2} = \frac{0.38416 \text{ x } 0.25}{0\ .0025} = \frac{.9604}{0\ .0025}$$

= 384.16. Approximated to 385 respondents.

Results and Discussions

The researchers distributed a total of three hundred and eighty five questionnaires (385), 363 responses were successfully retrieved and the data was further analyzed. Response Rate $(\%) = \left(\frac{\textbf{Number of Completed Surveys}}{\textbf{Number of Surveys Distributed}}\right) \times \mathbf{100.}$ The overall response rate: $\left(\frac{363}{385}\right)$ x 100 = 94.3%

Table 1: Distribution of Socio-demographic Characteristics of Respondents

Sex	**Frequency**	**Percentages**
Females	363	100
Total	**363**	**100**
Age		
15-24	92	25.3
25-34	111	30.6
35-44	53	14.6
45-54	66	18.1
55 and above	41	11.3
Total	**363**	**100**
Educational level		
No Formal Education	89	24.5
Primary	41	11.3
Secondary	102	28.1
NCE/Diploma	73	20.1
Tertiary	58	16.0
Total	**363**	**100**
Marital Status		
Single	144	39.7
Married	86	23.7
Divorced/Separated	63	17.4
Widowed	52	14.3
Total	**363**	**100**
Religious Affiliation		
Christianity	211	58.1
Islam	103	28.4
Traditional	49	13.5

Total	**363**	**100**
Occupation		
Student	131	36.1
Civil Servant	101	27.8
Self Employed/Business	81	22.3
Private Employment	50	13.8
Total	**363**	**100**

Source: Field Survey, 2024

The provided figures on Table 1 distribution of socio-demographic characteristics of respondents, including sex, age, educational level, marital status, religious affiliation, and occupation. Females make up 100% of the sample, with a total count of 363. The data shows that all respondents are female, indicating that the study or survey exclusively targeted females.

The largest age group is 25-34, comprising 30.6% of the sample, followed by the 15-24 age group at 25.3%. The smallest age group is 55 and above, making up 11.3% of the sample. The age distribution shows a relatively even spread across the age groups. There is a general decline in frequency as age increases, which is expected due to factors like mortality and mobility.

The majority of respondents have received some level of formal education, with secondary education being the most common (28.1%). 24.5% have no formal education, the data indicates a varied educational background among respondents, with a significant portion having completed secondary education. The most common marital status is single (39.7%), followed by married (23.7%). Divorced/separated and widowed categories have relatively similar percentages (17.4% and 14.3% respectively).

Christianity is the most prevalent religious affiliation, representing 58.1% of the sample, followed by Islam at 28.4%. Traditional religious affiliation is the least common, with 13.5%. The majority of respondents are students (36.1%), indicating a relatively young sample population. Civil servants and self-employed/business individuals are the next most common occupational categories, at 27.8% and 22.3% respectively. Private employment represents the smallest category at 13.8%.

The data suggests that the study or survey primarily involved young females, given the high proportion of respondents in the 15-24 and 25-34 age groups, as well as the prevalence of students. There's diversity in educational levels, marital statuses, religious affiliations, and occupations, indicating a heterogeneous sample. Understanding these demographics can help tailor policies, programs, or interventions to address specific needs or challenges within each group. Further analysis, such as comparing demographics against certain outcomes or conducting qualitative research to understand underlying

factors, could provide deeper insights into the characteristics and needs of this population.

The table below captures responses on the availability and affordability of menstrual products in rural areas, based on a study with a sample size of 363 participants. The product types include pads, tampons, menstrual cups, or reusable cloth options. Accessibility indicates how easily participants can find these products in their communities (e.g., local shops, pharmacies). While affordability show the cost of menstrual products relative to participants' income and how this impacts their ability to purchase them. By analyzing this data, the study can shed light on the challenges faced by women and girls in rural areas when managing their menstrual periods. This information can be used to inform interventions aimed at improving access to affordable menstrual products and promoting menstrual health management in these communities.

Table 4.3: Availability and Affordability of Menstrual Products. (N=363)

Variable	Strongly Disagree	Disagree	Neither	Strongly Agree	Agree	Mean	S.D.
Menstrual hygiene products are readily available in local shops and markets in my community.	15	39	8	122	179	4.1322	0.9420
There is a diverse range of menstrual hygiene products (e.g., pads, tampons, menstrual cups) available in local stores.	17	46	16	133	151	3.9161	0.9648
Menstrual hygiene products are affordable for most girls and women in my community.	30	53	10	124	146	3.8206	0.9126

There is a significant difference in the prices of various menstrual hygiene products available in local stores	42	54	5	112	150	3.7744	0.8998
Subsidized or free menstrual hygiene products are accessible to economically disadvantaged individuals in my community.	33	22	8	134	166	4.0284	0.8611

Source: Field Survey, 2024.

Based on the provided figures on Table 4.3, analyzing the perceptions of menstrual hygiene product availability, diversity, affordability, price differences, and accessibility to economically disadvantaged individuals in the community, the following were displayed:

Menstrual hygiene products availability: Mean score: 4.1322 and Standard deviation: 0.9420. This indicates that, on average, respondents perceive menstrual hygiene products to be readily available in local shops and markets. The standard deviation suggests that there is some variability in perceptions, with some respondents strongly agreeing and others disagreeing.

Diversity of menstrual hygiene products: Mean score: 3.9161 and Standard deviation: 0.9648. This indicates that, on average, respondents perceive a moderate level of diversity in menstrual hygiene products available in local stores. The standard deviation suggests some variability in perceptions, with some respondents perceiving a higher diversity and others perceiving a lower diversity.

Affordability of menstrual hygiene products: Mean score: 3.8206 and Standard deviation: 0.9126. This indicates that, on average, respondents perceive menstrual hygiene products to be somewhat affordable for most girls and women in the community. The standard deviation suggests some variability in perceptions, with some respondents perceiving them as more affordable and others as less affordable.

Price differences of menstrual hygiene products: Mean score: 3.7744 and Standard deviation: 0.8998. This indicates that, on average, respondents perceive a moderate level of difference in prices among various menstrual hygiene products available in local stores. The standard deviation suggests some variability in perceptions, with some respondents perceiving larger price differences and others perceiving smaller differences.

Accessibility of subsidized or free menstrual hygiene products: Mean score: 4.0284 and Standard deviation: 0.8611. This indicates that, on average, respondents perceive subsidized or free menstrual hygiene products to be accessible to economically disadvantaged individuals in the community. The standard deviation suggests some variability in perceptions, with some respondents strongly agreeing and others disagreeing.

In-depth responses from local rural women regarding the effect of accessibility to menstrual products on young girls' health and education, which involved conducting qualitative interviews that reflects the perspectives and experiences are presented and discussed below. A 38 years old, Farmer revealed that:

> "In our village, many young girls struggle during their periods. We didn't have proper products when I was younger, and it's still hard for them now. My daughter often misses school because she feels embarrassed without pads. It affects her grades, and I worry about her health when she uses rags or old clothes."

This narrative provides a poignant illustration of the challenges faced by young girls in rural communities regarding menstrual health and education. She highlights the historical and ongoing lack of proper menstrual products in her village. This suggests a persistent issue where infrastructure or availability constraints prevent girls from accessing essential hygiene products needed during menstruation. Her personal experience underscores a generational continuity in the problem, indicating that little progress has been made in addressing this fundamental need.

Her concern for her daughter's education is evident. She notes that her daughter frequently misses school due to embarrassment caused by inadequate menstrual supplies like pads. This absence directly affects her daughter's academic performance, as missed days lead to falling behind in coursework and potentially lower grades. This aligns with broader research indicating that menstrual health challenges often correlate with reduced educational attainment among girls. Her major concerns were that the use of rags or old clothes due to the unavailability of proper products poses health risks. She worries about her daughter's health under such circumstances, reflecting a common concern among caregivers in communities where menstrual hygiene products are scarce.

This highlights not only the discomfort but also the potential for infections or other health complications when using makeshift materials. She indirectly touches on the emotional toll of menstruation-related challenges, particularly the embarrassment her daughter feels. This emotional impact can lead to social withdrawal or anxiety among girls, affecting their self-esteem and overall well-being. It highlights how societal attitudes and taboos surrounding menstruation contribute to the stress and discomfort experienced by young girls. Her narrative implicitly calls for action to improve access to menstrual products and support systems in her community. Her concern for her daughter's health and education reflects a broader need for sustainable solutions, such as community-based initiatives, government interventions, or NGO programs, aimed at addressing menstrual health disparities in rural areas.

A 28 years old, Housewife expressed that:

> "I have two younger sisters, and seeing them manage their periods breaks my heart. They use whatever is available, sometimes old cloth or leaves. It's uncomfortable and unhygienic. They miss school when it's heavy, and they are scared of stains. I wish there were affordable pads here."

This account provides a vivid portrayal of the challenges faced by young girls in her community regarding menstrual health and education. She describes the scarcity of proper menstrual products in her community, forcing her younger sisters to resort to using whatever is available, such as old cloth or leaves. This highlights a critical gap in accessibility to essential hygiene products needed for managing menstruation safely and hygienically.

The use of old cloth or leaves is depicted as uncomfortable and unhygienic. This makeshift approach not only fails to provide adequate absorption but also increases the risk of infections or other health issues. Her concern emphasizes the adverse health consequences that can arise from inadequate menstrual hygiene practices. She notes that her sisters often miss school during heavy periods due to fear of staining their clothes. This directly affects their educational attendance and performance, as missed school days contribute to academic setbacks and hinder their ability to keep up with their peers.

The statement "seeing them manage their periods breaks my heart" reflects the emotional toll that menstruation-related challenges take on both the girls and their caregivers. It highlights the distress and empathy felt by family members witnessing the difficulties faced by young girls in managing their menstrual cycles under challenging circumstances. She further expresses a desire for affordable menstrual pads in her community. This emphasizes the need for accessible and cost-effective solutions to ensure that all girls can manage their menstruation with dignity and without compromising their health or education.

A 45 years old, Community Leader affirmed that:

> "As a leader in our community, I see the challenges our girls face. They lack proper knowledge and products. It's affecting their education because they skip classes during their periods. We need more support to provide them with reliable menstrual products and educate them about their health."

Her perspective as a community leader sheds light on critical issues related to menstrual health and education among young girls in her community. She acknowledges that many young girls in her community face significant challenges related to menstrual health. This includes both the lack of proper menstrual products and insufficient knowledge about menstrual hygiene practices. Her awareness of these issues reflects a proactive stance towards addressing gaps in support and resources for girls. She highlighted how these challenges directly affect girls' education. She notes that girls often skip classes during their periods, which contributes to educational disruptions and may lead to academic underachievement or dropout. This observation aligns with broader research indicating that menstrual health issues can impede girls' regular school attendance and academic performance.

As a community leader, she calls for more support to provide girls with reliable menstrual products. This highlights the community's recognition of the importance of access to affordable and effective menstrual products in enabling girls to manage their menstruation hygienically and comfortably. Additionally, she emphasizes the need for education programs that can empower girls with knowledge about menstrual health, thereby promoting better hygiene practices and reducing stigma.

Her advocacy for education about menstrual health indicates a holistic approach to addressing the issue. Beyond providing products, she recognizes the value of comprehensive health education that can empower girls to understand their bodies and manage menstruation confidently. This educational component is crucial in breaking down cultural taboos and promoting positive attitudes towards menstrual health. Her role as a community leader highlights the importance of local leadership in advocating for and implementing solutions to menstrual health challenges. Her involvement signifies community support and collaboration necessary to drive sustainable changes in policies and practices related to menstrual health in her community.

A 32 years old, Small Business Owner explained that:

> "Access to menstrual products is a huge issue here. Girls resort to unsafe methods like using dirty cloth or nothing at all. It's affecting their health, and they are shy to ask for help. We need affordable and reliable products available in our village to protect their health and dignity."

Her experience as a small business owner highlights critical issues surrounding menstrual health and access to products in her community. She identifies access to menstrual products as a significant issue in her village. She notes that girls resort to using unsafe methods such as dirty cloth or nothing at all during their periods. This reveals a lack of access to proper menstrual hygiene products, which are essential for managing menstruation hygienically and comfortably. Using dirty cloth or inadequate materials can lead to health risks such as infections and other menstrual-related health complications. Her expression of concern for the girls' health highlights the serious consequences of inadequate menstrual hygiene practices, which can affect their overall well-being and potentially lead to long-term health issues. She mentions that girls are shy to ask for help, indicating a broader issue of social stigma surrounding menstruation. Cultural taboos and embarrassment often prevent girls from seeking assistance or discussing their menstrual health openly, contributing to their discomfort and reluctance to manage their periods effectively.

The 32 years old, Small Business Owner advocates for affordable and reliable menstrual products to be available in their village. This reflects a community-wide desire for accessible solutions that ensure girls can manage their menstruation with dignity and without compromising their health. Affordable options are crucial in overcoming financial barriers that prevent girls from accessing necessary hygiene products. Ensuring access to menstrual products not only addresses immediate health concerns but also empowers girls by allowing them to attend school regularly, participate fully in daily activities, and maintain their dignity. Ms. Zainab's call for

reliable products underscores the importance of sustainable solution that meet the ongoing needs of girls in her community.

A 40 years old, Teacher:

> "In my school, girls miss several days each month because they don't have pads. It impacts their studies, and they fall behind. Some drop out eventually. It's heartbreaking to see their potential wasted because of something as basic as menstrual products."

The statement provided offers a poignant perspective on the profound impact of inadequate access to menstrual products on young girls' education and overall well-being. The statement highlights that girls in the school frequently miss several days each month due to the lack of menstrual pads. This underscores a direct correlation between the availability of menstrual products and school attendance. When girls do not have access to adequate menstrual hygiene products, they are often forced to stay home during their periods, leading to significant educational interruptions. This absence from school affects their studies, causing them to fall behind in their coursework and academic performance.

The data suggests that some girls may eventually drop out of school due to the challenges posed by menstruation. Persistent absences and academic setbacks can contribute to increased dropout rates among girls who are unable to manage their menstrual health effectively. This highlights how a lack of access to basic menstrual products can perpetuate broader inequalities in education, particularly affecting girls' long-term educational outcomes and opportunities.

The statement reflects the emotional toll experienced by educators witnessing the consequences of menstrual health challenges among their students. It describes the situation as "heartbreaking," emphasizing the empathy and concern felt for the affected girls. This emotional response underscores the broader societal recognition of the injustice and waste of potential resulting from barriers to menstrual hygiene management.

The data serves as a call to action for addressing the systemic issue of menstrual product accessibility in schools. It underscores the urgent need for policies and interventions that ensure all girls have access to reliable and affordable menstrual products. By addressing these barriers, schools can create a supportive environment that enables girls to attend classes regularly, participate fully in educational activities, and reach their academic potential.

Lastly, the statement highlights the intersection of menstrual health with broader issues of gender equity in education. It emphasizes the importance of eliminating barriers that disproportionately affect girls' educational opportunities, including stigma, cultural taboos, and economic constraints related to menstrual hygiene.

A 14 years old, Student expressed this:

> "At my school, many of us girls struggle when we get our periods. Sometimes I use old cloth because we can't afford pads. It's really uncomfortable, and I'm always scared of leaking at school. I've missed classes because of this, and it's hard to catch up on the lessons. I feel embarrassed to talk about it with my teachers or friends.

> I wish we had access to proper pads so I could focus on my studies without worrying."

The statement from the 14-year-old student, offers in-depth insights into the challenges young girls face regarding menstrual health and its impact on their education. Her statement highlights a significant financial barrier, as she mentions the inability to afford menstrual pads. This underscores a common issue in many rural areas where families may not have the financial means to purchase sanitary products regularly.

Due to the lack of affordable options, Mary resorts to using old cloth. This is a clear indicator of inadequate access to proper menstrual products, which is a critical issue affecting her and her peers. Using old cloth is described as "really uncomfortable," which points to the physical discomfort and potential health risks associated with using improvised menstrual products. These can include skin irritation, infections, and other hygiene-related issues.

Her fear of leaking at school adds a layer of emotional distress. This fear can lead to anxiety and a lack of concentration, significantly impacting her ability to participate fully in school activities. The statement reveals that she has missed classes due to her menstrual period. This absenteeism can have a cumulative negative effect on her academic performance, as missing school means falling behind in lessons and potentially lower grades.

She expresses the difficulty of catching up on lessons after missing classes. This can lead to a cycle of underperformance and increased stress, further hindering her educational progress. Her embarrassment about discussing menstrual issues with teachers or friends indicates a broader cultural stigma around menstruation. This stigma can prevent open conversations and the seeking of necessary help or support. The desire for access to proper pads shows a keen awareness of the solutions needed to address these issues. It reflects a strong need for interventions that can provide reliable and affordable menstrual products to girls in similar situations.

To address the financial and accessibility barriers, initiatives such as providing free or subsidized menstrual products in schools could be implemented. Partnerships with non-profits or government programs could play a significant role in this. Implementing educational programs that focus on menstrual health can help break down the stigma and create an environment where girls feel comfortable discussing their needs and seeking support. Establishing support systems within schools, such as having designated staff members to provide menstrual products and guidance, can help alleviate the embarrassment and ensure that girls like Mary do not miss out on their education due to menstruation.

A 16 years old, Student:

> "In our village, it's tough for girls during our periods. We don't have many options, so we use whatever we can find, like old clothes. It's not clean or safe, and some of my friends have gotten rashes and infections. Because of this, we sometimes skip school, especially during heavy flow days. Missing school affects our grades, and it feels like we're always behind. We need affordable and safe menstrual products to stay healthy and keep up with our education."

The statement provides a clear and detailed picture of the issues faced by young girls in her village regarding menstrual health and its impact on education. A comprehensive analysis of her response is demonstrated below:

She mentions that they don't have many options and resort to using old clothes. This highlights a significant lack of access to proper menstrual products such as pads or tampons. The use of improvised solutions like old clothes indicates a dire need for affordable and accessible menstrual hygiene products. She explicitly states that using old clothes is neither clean nor safe. This can lead to various health issues, including:

The mention of rashes and infections among her friends underscores the health risks associated with inadequate menstrual hygiene practices. These conditions can lead to more severe health problems if not addressed properly. The specific mention of heavy flow days causing girls to skip school further highlights the inadequacy of the materials they are using to manage their menstruation.

She points out that they sometimes skip school due to menstrual issues. Regular absenteeism can lead to missing school frequently results in girls falling behind in their studies, making it challenging to keep up with their peers and impacting their overall academic performance. The direct impact on grades is mentioned, indicating that the educational outcomes for these girls are adversely affected by their menstrual health challenges.

The recurring issue of rashes and infections, coupled with the fear of leaking or stains, can cause significant anxiety and stress, affecting their concentration and participation in school activities. She expresses a feeling of always being behind, which can lead to a diminished sense of self-worth and motivation among the affected girls. Her statement emphasizes the need for affordable and safe menstrual products to maintain their health and continue their education without interruptions. This highlights a clear call for interventions from both local authorities and non-governmental organizations to provide adequate menstrual health resources.

Initiatives to distribute free or subsidized sanitary pads in schools and communities can significantly alleviate the problem. Partnering with NGOs and health organizations can help in this regard. Implementing menstrual health education programs in schools can help girls understand proper hygiene practices and reduce the stigma associated with menstruation. Raising awareness within the community about the importance of menstrual health and hygiene can encourage local support and reduce stigma. Establishing support systems within schools where girls can access menstrual products and seek help discreetly can reduce absenteeism and improve their educational outcomes.

A 15 years old, Student explained that:

> "When I get my period, I feel so stressed because we don't have enough money to buy pads every month, coupled with unbearable pains that follows. Using old rags is uncomfortable, and I'm always worried about stains showing in school. I've missed several days of school because of this, and it makes me sad because I love learning. If we had access to proper menstrual products, I wouldn't have to miss school and fall behind in my studies."

This statement offers a comprehensive glimpse into the multifaceted challenges faced by young girls in rural areas regarding menstrual health and its impact on their education. She explicitly mentions that the financial inability to buy menstrual pads every month is a significant issue. This highlights the economic barriers that prevent girls from accessing necessary menstrual hygiene products. Due to the lack of funds, she resorts to using old rags. This is a common issue in low-income areas, indicating a dire need for affordable menstrual products. Using old rags is described as uncomfortable. This can lead to physical discomfort and potential health risks such as infections and rashes. She also mentions experiencing unbearable menstrual pains, which adds another layer of physical distress. This pain can be debilitating and affect her ability to participate in school and other activities.

The above statement that she has missed several days of school due to her period unveils the direct impact of menstrual health on education. Missing school leads to falling behind in studies, which can have a long-term negative impact on academic performance. Her expression and sadness about missing school reflects her love for learning and the frustration of being unable to attend due to menstrual issues. She feels stressed about her period, particularly worrying about stains showing in school. This constant stress can lead to anxiety and a lack of concentration, further affecting her educational experience. The emotional toll of missing school and falling behind in studies is evident. Her sadness and frustration highlight the psychological impact of inadequate menstrual hygiene management on young girls.

She strongly believes that access to proper menstrual products would enable her to attend school regularly and keep up with her studies. This indicates that providing adequate menstrual products could significantly improve educational outcomes for girls. Access to safe and effective menstrual products is essential for maintaining health and dignity. Proper products can prevent health issues and allow girls to participate fully in school and community life.

Initiatives to provide free or subsidized menstrual products in schools and communities can help alleviate financial barriers. Partnerships with non-profits and government programs can support this effort. Implementing menstrual health education programs in schools can help girls understand how to manage their periods effectively and reduce stigma. Education can also include information on pain management and hygiene practices. Establishing support systems in schools, such as having designated staff members to provide menstrual products and support, can help reduce absenteeism and improve girls' confidence and participation in school. Engaging the community in discussions about menstrual health can help raise awareness and reduce stigma. Community support can also play a role in providing resources and creating a supportive environment for girls.

13 years old, Student:

> "It's really hard to concentrate in school when I'm on my period because I use pieces of cloth that don't work well. I'm scared of leaks and stains, so I sometimes stay home. This makes it hard to keep up with my classmates, and I feel left out. I wish there were better options for us, like

> affordable pads, so we wouldn't have to miss school and feel embarrassed".

Just like other students, her statement sheds light on the significant challenges that young girls face regarding menstrual health and its subsequent impact on their education. She uses pieces of cloth as menstrual products, which are insufficient for proper menstrual hygiene management. This choice is driven by the lack of access to affordable and effective menstrual products. The pieces of cloth do not work well, causing practical issues such as leaks and stains. This highlights the inadequacy of using non-specialized materials for menstrual hygiene.

She finds it hard to concentrate in school during her period. The fear of leaks and stains creates a distraction, making it difficult for her to focus on her studies. Due to the fear of stains and the discomfort caused by using cloth, she sometimes stays home during her period. This absenteeism leads to: Missing school makes it hard for her to keep up with her classmates. This can have long-term effects on her academic performance and overall educational outcomes. The feeling of being left out indicates a social and emotional impact. She misses out on interactions and activities that are crucial for her development and sense of belonging.

The fear of leaks and stains causes significant emotional distress. Her statement reflects a sense of embarrassment that affects her self-esteem and social interactions. She hopes and wishes for better options, like affordable pads, shows a clear understanding of the solution to her problem. She knows that proper menstrual products would prevent embarrassment and allow her to attend school without worry.

Providing affordable and effective menstrual products is essential for maintaining the health and dignity of young girls. Proper products would prevent the health risks associated with using ineffective materials and enhance their confidence. Access to reliable menstrual products would ensure that girls like Grace do not miss school due to their periods. This would enable them to keep up with their studies and participate fully in school life.

A 17 years old, Student affirmed that:

> "Periods are a big problem for girls in our village. We can't afford pads, but with her elder sisters around, they prepped her for the future"

Her statement offers a glimpse into the supportive dynamics and positive measures being taken within her community regarding menstrual health management, despite the prevailing challenges. She highlights the financial barrier her community faces in accessing menstrual products. The inability to afford pads is a significant issue that affects many young girls in her village. Despite the financial difficulties, Ruth points out the proactive role her elder sister's play in preparing her for managing her periods. This support system within the family is crucial and showcases the importance of intra-family education and guidance. There is evidence of intergenerational knowledge transfer: The involvement of her elder sisters indicates a positive intergenerational transfer of knowledge and practices related to menstrual health. This not only helps her it also fosters a culture of openness and support regarding menstrual issues.

The elder sisters' efforts to prepare her for her periods demonstrate a commendable level of awareness and education within her family. This preparation likely includes practical

advice on managing periods with limited resources, understanding menstrual hygiene, and addressing potential challenges. Being prepped by her elder sisters likely empowers her with the knowledge and confidence to manage her menstrual health effectively. This empowerment is vital in reducing the stigma and anxiety often associated with menstruation. The statement also reflects the resourcefulness and resilience of her community in dealing with menstrual health issues. Despite the lack of financial resources, the community finds ways to support young girls through family networks and shared knowledge.

The proactive steps taken by the elder sisters serve as a positive coping mechanism. This approach helps mitigate the adverse effects of financial constraints on menstrual health management. Her experience highlights the potential impact of external interventions, such as educational programs, distribution of affordable menstrual products, and community support initiatives. These interventions could complement the family support system and enhance overall menstrual health management in her village. While family support is crucial, there is a clear need for sustainable and long-term solutions to address the affordability and accessibility of menstrual products. This could involve partnerships with NGOs, government programs, and social enterprises focused on menstrual health.

Test of Hypothesis

In this section, the study conducted hypothesis testing to examine the relationship between socio-demographic characteristics and the effects of the accessibility of menstrual products among young girls' health and education in rural areas of Wukari Local Government Area. The study tested the following hypotheses:

Hypothesis 1

Null Hypothesis (H0): There is no significant association between educational level and the accessibility of menstrual hygiene products.

Alternative Hypothesis (H1): There is a significant association between educational level and the accessibility of menstrual hygiene products.

Hypothesis 2

Null Hypothesis (H0): There is no significant association between cultural beliefs and practices and the accessibility of menstrual hygiene products.

Alternative Hypothesis (H1): There is a significant association between cultural beliefs and practices and the accessibility of menstrual hygiene products.

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

Where:
$\chi 2$ is the chi-square statistic,
O is the observed frequency,
E is the expected frequency.

Table 3: A Cross-Tabulation Table: Hypothesis 1 Contingency Table

Educational Level	Yes (Accessibility)	No (Accessibility)	Total
No Formal Education	38	51	89
Primary	26	15	41
Secondary	57	45	102
NCE/Diploma	64	9	73
Tertiary	53	5	58
Total	**238**	**125**	**363**

Source: Field Survey, 2024.

For this contingency Table 3, the degrees of freedom will be
(Number of rows - 1) x (Number of columns - 1) = (5 - 1) x (2 - 1)
= 4 x 1
= 4
χ 2 = 29.92
Since, the calculated chi-square value (29.92) is greater than the critical value (9.488), with a critical value at $\alpha = 0.05$ for 4 as degrees of freedom, the study reject the null hypothesis. Therefore, there is a significant association between educational level and the accessibility of menstrual hygiene products among girls and women in rural areas.

Table 4: A Cross-Tabulation Table: Hypothesis 2 Contingency Table

Variables	Yes (Accessibility)	No (Accessibility)	Total
Cultural Belief	194	17	211
No Cultural Belief	123	29	152
Total	**317**	**46**	**363**

Source: Field Survey, 2024.

For this contingency Table 4, the degrees of freedom will be
(Number of rows - 1) x (Number of columns - 1) = (2 - 1) x (2 - 1)
= 1 x 1
= 1
χ 2 = 11.529
The calculated chi-square statistic is approximately 11.529, with 1 degree of freedom, at a significance level of $\alpha = 0.05$. This value exceeds the critical value of 3.841, leading to the rejection of the null hypothesis. Therefore, the study concludes that there is a significant association between cultural beliefs and practices and the accessibility of menstrual hygiene products. This suggests that cultural factors play a role in determining the accessibility of menstrual hygiene products in rural areas, highlighting the importance of considering cultural beliefs and practices in interventions aimed at improving access to menstrual hygiene products.

Conclusions and Recommendations

Access to menstrual products is a critical component of young girls' health and educational attainment. The inability to afford or obtain proper menstrual hygiene products significantly impacts their physical health, psychological well-being, and academic performance. Lack of access to sanitary menstrual products forces many girls to resort to using improvised materials such as old clothes, rags, or leaves. These alternatives are often unhygienic, leading to a higher risk of infections, rashes, and other health complications. The physical discomfort and potential health risks underscore the necessity for safe and affordable menstrual products.

The embarrassment and fear of leaks or stains during menstruation cause many girls to miss school regularly. This absenteeism results in falling behind in their studies, diminished academic performance, and in some cases, dropping out of school entirely. The disruption of education during crucial developmental years can have long-term effects on girls' future opportunities and socio-economic mobility. The stigma surrounding menstruation and the lack of proper menstrual hygiene management can significantly affect a girl's self-esteem and social interactions. The stress and anxiety associated with inadequate menstrual products contribute to a negative school experience, further isolating girls during their periods.

Family support, as evidenced by Ruth's account of her elder sisters' guidance, plays a crucial role in helping young girls manage their periods. However, community-wide interventions are necessary to address broader issues of affordability and accessibility. Community leaders, schools, and health organizations must work together to provide comprehensive menstrual health education and resources. However, based on the research findings, several recommendations can be made to address the challenges faced by young girls regarding menstrual health and education:

Increase Availability of Affordable Menstrual Products

Implement government programs to subsidize the cost of menstrual products, making them more affordable for families in rural and low-income areas.

Establish community-based distribution channels for menstrual products, ensuring that even the most remote areas have access to affordable and hygienic options.

Promote Sustainable Menstrual Hygiene Solutions

Encourage the use of sustainable menstrual products such as menstrual cups and reusable pads, which are cost-effective in the long run and environmentally friendly.

Provide training on the proper use and maintenance of reusable menstrual products to ensure their effective and safe use.

Implement Comprehensive Menstrual Health Education

Integrate menstrual health education into school curricula to provide accurate information and dispel myths and stigmas associated with menstruation.

Conduct community workshops involving parents, teachers, and local leaders to raise awareness about menstrual health and hygiene.

Improve Sanitation Facilities in Schools

Ensure that schools have private and hygienic washing facilities where girls can manage their menstrual hygiene discreetly and safely.

Equip schools with emergency menstrual products for girls who may need them during the school day.

Enhance Community Engagement and Support

Develop peer support programs where older students or community members can provide guidance and support to younger girls regarding menstrual health.

Identify and train menstrual health champions within communities who can advocate for better menstrual hygiene practices and resources.

Strengthen Policy and Advocacy Efforts

Advocate for policies that mandate the provision of free menstrual products in schools and public facilities.

Launch public awareness campaigns to normalize menstruation and reduce the stigma and taboo associated with it.

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