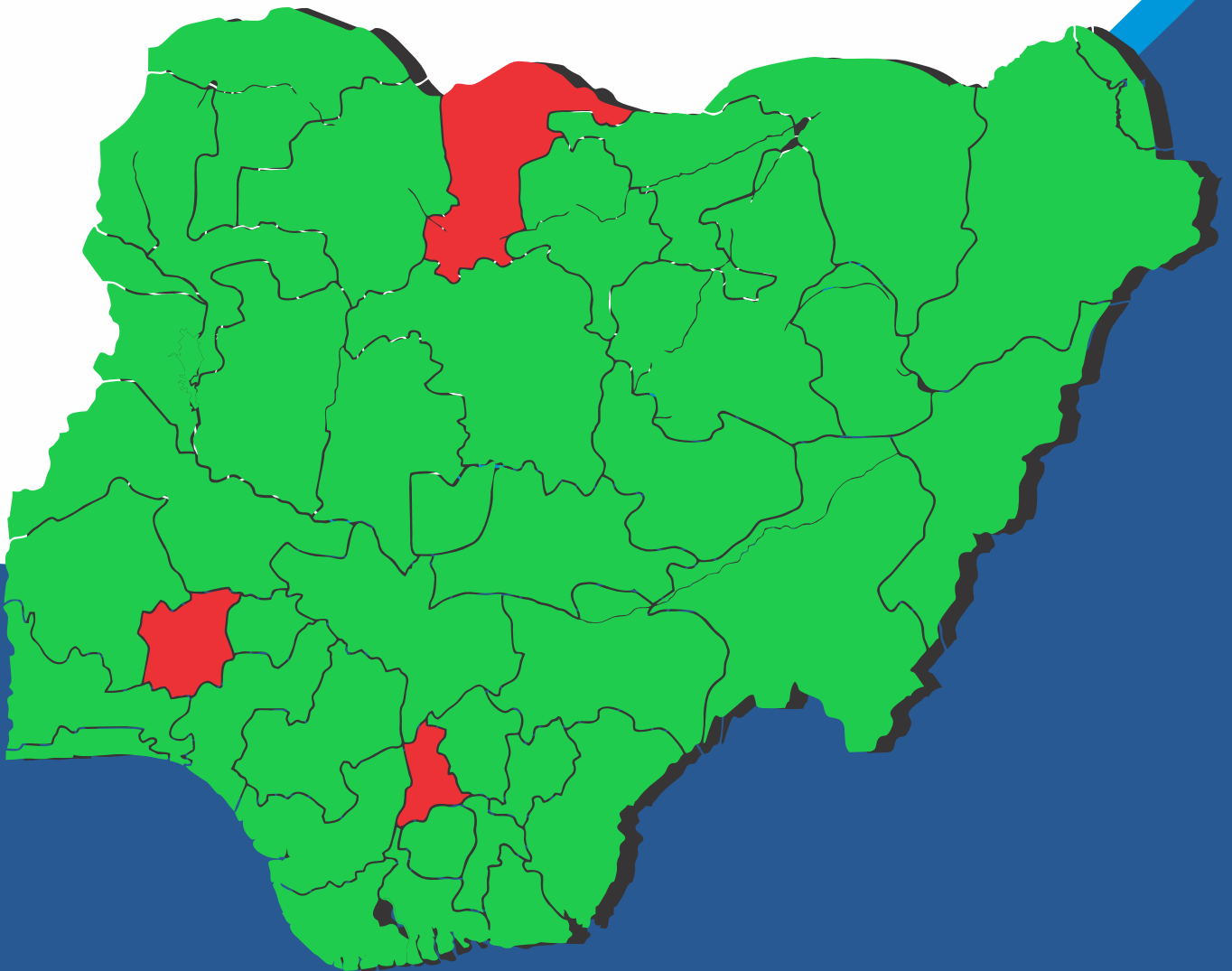


AN ASSESSMENT OF MENSTRUAL HYGIENE MANAGEMENT IN SECONDARY SCHOOLS



Anambra, Katsina and Osun States,
Nigeria, 2015

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LIST OF ACRONYMS

AN	Anambra
ASUBEB	Anambra State Universal Basic Education Board
BIS	Boys In- School
FBO	Faith-Based Organization
FGD	Focus Group Discussion
FLHE	Family Life HIV/AIDs Education
FMoE	Federal Ministry of Education
GIS	Girls In School
GOS	Girls Out of School
HOD	Head of Department
IDI	In-depth Interview
KA	Katsina
KII	Key Informant Interview
LGA	Local Government Area
LGAR	Local Government Area Rural
LAGAU	Local Government Area Urban
MHM	Menstrual Hygiene Management
MoE	Ministry of Education
NGO	Non –Governmental Organization
OS	Osun
RUWASSA	Rural Water and Sanitation Authority
SBMC	School Based Management Committee
STF	School Teacher Female
STM	School Teacher Male
SH	School Head
SUBEB	State Universal Basic Education Board
TV	Television
UNICEF	United Nations' International Children's Fund
UNTH	University of Nigeria Teaching Hospital
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

EXECUTIVE SUMMARY

The global demands for greater understanding of the challenges menstruating school girls face and the associated potential risks and consequences are growing. This study was launched to investigate the knowledge, attitudes and practices of menstruating school girls on menstrual hygiene, and the environmental school challenges affecting menstrual hygiene management (MHM.) Stakeholders' involvement in MHM promotion in schools was also assessed. Qualitative and quantitative data were collected in 12 schools randomly selected from both rural and urban communities in three geo-political zones in Nigeria. Qualitative methods included focus group discussion for mothers, girls and boys; in-depth interviews for in-school and out of- school girls; and key informant interviews for school principals, teachers, and participants from the Zonal Directors' of Education, Chairmen States' Universal Basic Education Board and Chairmen School Based Management Committee /Parents Teachers Association. A structured observation checklist was used to ascertain the conditions of the school environment and the WASH facilities in the schools. A total of 152 activities with 394 participants were conducted.

Findings from this study showed that menstruating school girls in Nigeria faced many challenges which affected their ability to manage their menstruation in a dignified and hygienic way. The key findings cut across religion and ethnicity and were related to various beliefs and cultures. The findings showed that availability and adequacy of WASH facilities, adequacy and flow of Information on MHM and access to materials for hygienic management of menstruation all impacted girls' experience of menstruation. Participants believed that menstruation was a secret and unclean experience and expressed special fear that used menstrual hygiene materials could be taken for rituals that could cause harm to menstruating girls. School WASH facilities were inadequate for menstrual management. Findings from the study showed that 41.7% of toilets had functional locks and only 25% of the schools had hand washing basins and soaps. Most of the toilets/ latrines observed were dirty with broken doors and poor ventilation. The ratio of latrine compartment to students was 1:297 for girls and 1:1216 for boys compared with global recommended latrine to student ratio of 1:25 and 1:50 for girls and boys respectively (UNICEF 2011). The overall average ratio of toilets/latrine in the urban schools for girls was 1:214 and for boys 1:374 while the ratio was 1:168 and 1:272 for girls and boys respectively in rural schools. None of the schools assessed met the World Health Organization standard of pupil to toilet ratio. Water for hand washing and cleaning up by girls was inadequate as only 50% of the schools had functional water source in the school premises. Girls lacked knowledge about puberty and menstruation: most the girls stated that they had no prior knowledge about menstruation before menarche. Even after onset of menstruation, information on menstruation was from mothers, older siblings and peers. There were inconsistencies in the subjects that addressed menstruation as well as information shared in schools. The teachers, especially those in co-educational schools were uncomfortable to teach menstruation and menstrual hygiene. Challenges that girls faced during menstruation included fear, confusion, anxiety, misconceptions, cramps, nausea, dizziness, general discomfort, headache, vomiting, loss of appetite, waist and stomach pains. Poor concentration/distraction, missing/skipping classes/absenteeism, missed educational opportunities, self-exclusion, self-restrictions from opposite sex and discomfort were

identified by participants in the study through the analysis of the experiences shared and discussed as the voiced impacts as results of challenges facing the menstruating girls in school. These identified impacts placed school girls at greater potential risks of early or child marriage, early sexual debut, teenage pregnancy, rape, sexual harassment and school dropout

The key recommendations to address the challenges include facilitation of accurate and sufficient information on MHM to disabuse minds of people on the myths and taboos and encourage safe, hygienic and dignified management of menstruation. Other key recommended actions were provision of appropriate and adequate water, sanitation and hygiene facilities in schools; support to access affordable reusable sanitary pads and mobilization of policy and decision makers to promote open discussion of menstrual hygiene management to reduce stigma. The implementation of these recommendations should involve active contribution from girls, boys, mothers, fathers and both government and traditional policy and decision makers.

INTRODUCTION

Overview of Menstrual Hygiene Management and Assessment Background

Menstrual hygiene management is described as the process whereby “women and adolescent girls use a clean menstrual hygiene management (MHM) material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing their bodies as required and having access to facilities to dispose of used menstrual management material” (UNICEF, WHO 2014).

Schools are potentially important settings in relation to MHM. Lack of appropriate facilities such as gender segregated improved toilet facilities, adequate safe water supply in schools for washing hands and soiled clothes, facility for drying of clothes and absence of sanitary menstrual materials can prevent girls from safe hygienic management of their menstruation. These may result to absenteeism, reduced level of concentration in class, low participation in outside school activities like sports and school clean-up. (Sommer and Sahin 2013)

There is a global evidence of lack of adequate guidance, facilities and materials for girls to manage their menstruation in school. These neglected public health, social and educational issues require prioritization, coordination and investment (Sommer, 2016). In Nigeria, especially among schoolgirls and women, there is a 'culture of silence' and shame regarding issues of sexuality and menstruation that are attributed to cultural restrictions. These prevent sufficient information from reaching girls and women. (Onyegebu, 2014). Studies in Nigeria by Aniebue (2009) reported that mothers do not educate their daughters about the onset of menstruation, its duration, or healthy practices. Girls often seek information from their peers, friends, or siblings who relay superstitions and incorrect information which leads to fear and anxiety among the girls. Aluko described the consequences attached to this biological phenomenon as unfair and unjust. (Aluko, 2014)

Multiple research findings to date in Nigeria have demonstrated varying perceptions, beliefs, knowledge, attitudes and practices related to MHM. There is the belief that menstruation is an unclean and secret issue which should not be discussed. In some communities/areas menstruating women do not cook for their husbands especially those who are traditionalists. They are not permitted to collect water from the public ponds especially traditional sources. They are not allowed to perform certain religious rites. (UNICEF, GHARF Report 2008). Furthermore, research finding showed that girls' capacity to manage their periods is affected by lack of access to affordable hygienic sanitary materials disposal options for used materials, adequate water supply, clean toilets, hand washing facilities and access to changing rooms. If these facilities are not always available in school, it exposes many girls to manage their periods with great discomfort and in unhygienic conditions. (Olukanni, 2013).

There are gaps in the literature regarding variation in knowledge, attitudes and practices of MHM. This study aims to understand the MHM knowledge, attitude, practices and the scope of school environmental challenges faced by school girls during menstruation as well as the determinants of these challenges across a range of settings and cultural contexts in Nigeria.

Country Context

Nigeria is the most populous nation in Africa with almost 177.5 million people (UN estimate, 2014) with over 250 ethnic groups, and 521 languages spread over the 36 States and Federal Capital Territory. It is arranged into six-geo-political zones (South East, South West, South- South, North West, North Central, and North East). There are three dominant ethnic groups of Hausa/Fulani in the North, Igbo in the South East and Yoruba in the South West. The culture of the country is shaped by its multiple ethnic groups, religion and beliefs.

Education

Education has been a top priority in Nigeria's broad national development strategy and it is an important tool for improving the country's economic growth and poverty reduction. Education in Nigeria is provided by both the public and private sectors. Planning, administration and funding is from the three tiers of governments: federal, state and local. The Federal Ministry of Education (FME) plays a dominant role in regulating the education sector through policy formulation by ensuring quality within the system through established minimum standards and code of conduct. The education system is based on the National Policy on Education (NPE) and the policy document addresses the issues of imbalance in education in different parts of the country regarding enrolment and completion as well as graduation to the next level of education. Overall, more boys than girls are enrolled in secondary school with boys' enrolment being 29% against girls enrolment of 22%. (NICEF Nigeria 2012). There is a common saying that "if you educate a girl you educate a community", but the education statistics does not reflect that prioritization of girls education. If the current trend of girl to boy's disparity in education is maintained, it may lead to a huge disparity in the educational development of girls compared to boys and deprive Nigeria the benefit of girl child education.

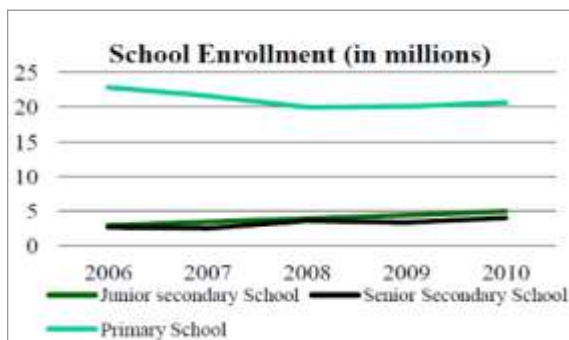


Fig.1 School Enrollment

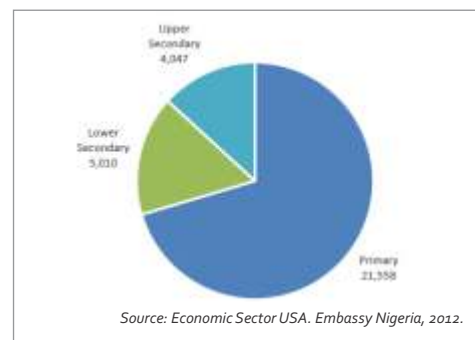


Fig.2 Number of Pupils by School Level in (1000s)

Nigeria has a total of 20,682,000 primary school {6-12} pupils and 9,057,000 secondary school {12-17} students. (2010, UNESCO Institute for Statistics). The secondary school enrollment rate is 51%, (22% for girls and 29% for boys). (UNICEF Nigeria 2012)

In 2006, the absence of standards to guide school health services became apparent and this led to the development of Nigeria's School Health Policy and Implementation Guidelines. The policy guidelines provides for the inclusion in the curriculum of Personal Health, Diseases including HIV/AIDS, Mental and Social Health, First Aid & Safety Education, Community Health, Family Life Education, Environmental Health, Maternal and Child Health, Nutrition, Consumer Health, Drug Education, Ageing and Death (Bereavement) Education, Parts of the human body and Health Agencies (Federal Ministry of Education, Nigeria 2006). However, effective implementation is limited in coverage both in subject matter and spread across the schools.

The multi-ethnic, religious and cultural nature of Nigeria has made it very difficult for the nation to adopt and operate uniform guidelines on Family Life HIV/AIDS Education (FLHE) Curriculum in schools. Discussion on the introduction of FLHE into secondary schools curriculum in Nigeria generated a lot of tension amongst parents, religious scholars and leaders particularly in the Northern part of Nigeria. Up till now, the consensus for a National Comprehensive Curriculum on a wide range of adolescent health issues (MHM inclusive) is still elusive in Nigeria to the detriment of young people's health and development of their full potentials in life.

Water, Sanitation and Hygiene

According to the UNICEF/WHO Joint Monitoring Program(JMP) report of June 2015, Nigeria's overall improved water coverage rate is 69% (126,630,870 people) of the estimated population of 183,523,000 people, (United Nations' population Division 2014), while improved sanitation coverage is 29% (53,221,670 people) Unimproved water sources are, therefore, used by 31% while use of shared toilets, unimproved toilets and open defecation account for 71% of sanitation practices. (JMP 2015).

Institutional water and sanitation access rates are also very low, particularly in schools. An inventory of water, sanitation and hygiene (WASH) facilities in 4,653 schools in 58 Local Government Areas across 20 states of Nigeria in 2014 revealed the poor coverage of schools with WASH facilities. There were sanitation facilities only in 1,726 schools (37%), water sources only in 851 schools (18 %) and both water and sanitation facilities in 701 schools (15%) of schools inventoried. (UNICEF WASH 2014) The revelations from this inventory were used by UNICEF WASH Section to plan interventions in selected schools as a pilot whose results and lessons would be used to advocate with Government to scale up the interventions.

Over the years, United Nations Children's Fund (UNICEF) has been a key ally of Nigerian government in the provision of water, sanitation and hygiene improvement both at community level for household use and in schools for the benefit of school children. In collaboration with other external development support agencies such as the UK Department for International Development (DFID), European Commission (EC) and the Nigerian Government especially the Federal Ministry of

Education (FME), and Non-government Organizations (NGOs), UNICEF is involved in many projects that are designed to increase sustainable access to and use of improved water sources, sanitation facilities, and hygiene education with particular attention to schools. The government involvement in the provision of water, sanitation and hygiene facilities has been on two fronts: the development of the guideline for school health by the FMoE and the financial support for provision of the physical facilities in primary schools by the Universal Basic Education Board through the States' Universal Basic Education Boards. However, this intervention is not regular but only an occasional intervention.

UNICEF's ongoing country program plan for 2014 – 2017 is being implemented in all the 36 states and Federal Capital Territory(FCT)of Nigeria.The target set for attainment by the end of 2017 is supporting equitable access to improved water sources for 2.8 million people and 1.5 million for sanitation. These targets include providing 750 schools with access to improved water, sanitation and hygiene facilities. To implement the activities that will deliver these targets, UNICEF is working with the Federal Ministry of Water Resources (FMWR) and FMoE at the national, state and local government levels, States' Rural Water and Sanitation Agencies, States' Universal Basic Education Boards and the LGA WASH Departments. The progress in realizing access to WASH in schools is slower than that of households. As of December 2015, only 43 schools were reached with WASH services. To address this slow progress in the provision of WASH facilities in schools in a standardized manner, UNICEF has developed a National Technical Guideline for construction of WASH facilities in Schools. This has been adopted by the FME as a standard for use in the country. Menstrual hygiene is also being recognized as part of hygiene promotion intervention which constitutes one of the indicators for measurement of effective hygiene promotion in schools. In the measurement of effectiveness, information on the number of gender segregated latrine compartments and special designs of urinals for boys and girls is investigated.

METHODS

Aim and Objectives of the Study

The main aim of the study was to determine current knowledge, attitude, practices and school environmental challenges affecting MHM among in-school girls in junior secondary school and out-of-school girls in three states in Nigeria.

The Specific Objectives were to:

- determine MHM knowledge of girls in junior secondary school and out-of-school girls in Nigeria
- ascertain societal attitude towards menstruation and menstruating girls in Nigeria
- identify MHM practices engaged in by girls in junior secondary schools in Nigeria
- determine challenges faced by in- school girls in menstrual hygiene management in the school environment.
- identify MHM stakeholders and assess their involvement in menstrual hygiene management promotion in schools and communities in Nigeria.

The Study Design

The study was conducted nationally and used a descriptive, explorative and cross-sectional design. It employed both qualitative and quantitative methods for data collection.

Figure 3: MHM Nigerian Study design



Source: Menstrual Hygiene Management Indonesia, 2015

Study Area and School Selection

Fig. 4: Map of Nigeria showing Study Zones



This research study was carried out in three geo-political zones in Nigeria: the north (Katsina); south east (Anambra) and south west (Osun). These zones were chosen because their populations represent the three major ethnic groups in Nigeria in terms of culture and religion.

A multi-stage, stratified random sampling technique was adopted, for identifying respondents in the MHM study as follows:

In stage one, Nigeria was stratified into three geographical regions. In each region, a state was purposively selected for the study based on its geo-political zone and dominant ethnic group. The selected states were Anambra, Katsina and Osun.

In stage two, each of the states were stratified into three senatorial districts.

In stage three, the Local Government Areas (LGAs) in the selected senatorial zones were stratified into urban and rural LGAs, from where one rural LGA and one urban LGA were randomly selected.

In stage four, communities in each of the selected rural and urban LGAs were listed. Two communities were randomly selected from which one junior secondary school was randomly selected.

In stage five in each of the selected schools, menstruating girls were aggregated by class and respondents selected through a purposive sampling technique using religion and age bracket (10-19 years) of the menstruating girls.

Table 1 Selected Zones

Zone	State	School Type	Urban	Rural	Number
North	Katsina	Mixed	2	1	3
		Girls	1	-	1
South East	Anambra	Mixed	1		1
		Girls	1	-	1
		Mixed	-	2	2
South West	Osun	Mixed	2	-	2
		Mixed	-	2	2
	Total				12

Participant Sampling and Recruitment

The States' Universal Basic Education Board representatives in the team made advocacy visits to schools to provide the information on the general purpose of the study, the importance of consent and assent forms and solicit for participants' cooperation. Consent forms were given to each principal. The students comprising menstruating in-school girls between 10-19 years in junior secondary school years 1-3 (JS1-3) and in-school boys in JS1-3 selected by schools for the interviews took consent forms home for signature by their parents/guardians. On the day of data collection, students whose consent forms were signed by their parents were arranged into 3 groups of Junior Secondary School years one, two and three. They were randomly selected for interviews (8 for FGDs for in-school boys and girls] and 2 for IDIs for in-school girls). Apart from the Parental Consent Forms from students, the principal in each school also provided a signed Consent Letter on behalf of students in their schools. Each respondent signed the Consent/Assent form and completed a Socio Demographic Information form. A structured observation checklist was used to ascertain the school environment and the WASH facilities in the schools. The principals in all the twelve schools selected for the study, provided a staff of the school to guide the walk around the school to enable completion of the observational checklist.

Respondents in the schools included in-school menstruating girls (junior secondary classes 1-3), in-school boys (junior secondary classes 1-3) and school teachers (male and female in each school). The criterion for selecting the teachers was based on the fact that they were science teachers who taught those students that might be menstruating. School administrators included the head-teachers or principals, Chairpersons of Parent Teachers Association (PTA) or School Based Management Committee (SBMC) of each of the selected schools. Community respondents included: Mothers of

menstruating in-school girls' in junior secondary years 1-3(JS1-3); out of school menstruating girls (between 10-19 years); Zonal Education Directors; and Chairperson of State Universal Basic Education Board (SUBEB) from each state.

Training

A nine-day training session in Abuja was attended by the National coordinator of MHM project, Nigerian UNICEF WASH Officer, four representatives from Federal Ministry of Education, three members of staff from each State Universal Basic Education, four members of staff from Rural Water Sanitation Sector, four members of staff from National Environmental Agency, nine research assistants, {three for each state}, six coordinators {two for each state}, two analysts and the Emory University program manager, who trained the Nigerian research team prior to the project.

The training covered the following areas: Fundamentals of Research Ethics, Understanding Qualitative and Quantitative Methods for MHM Research; Collecting Qualitative Data as well as Recording, Note Taking, and Managing Data. Other areas covered included tools for MHM Research, Training, Piloting and Execution of Research and practical interview sessions from WINs MHM E-Course. All the tools used for the study were piloted in a school outside the main training and adapted based on challenges encountered. Furthermore, seven days intensive training (Pre-level Workshop Training) was conducted at each zonal level. This was to train transcriptionists, translators and also refresh research assistants' knowledge through specific presentations on Collecting Qualitative Data, Recording, Note Taking, Managing Data and Tools for MHM Research, from WinS4 Girls MHM E-Course. The training also covered the translation of tools, and piloting of translated tools in order to understand the regional challenges and need for adaptation.

Data Collection Activities

A total of 152 activities with 394 participants were conducted. Four research methods were used for data collection during the study: Focus Group Discussion [FGD], In-depth Interview (IDI), Key Informant Interview (KII) and School Facility Observation (OC). Each tool targeted different sources of information that helped to address the research objectives. The tools were adapted from existing UNICEF WASH and Emory University tools as well as related review of the literature. They were developed in English language and later translated into vernacular (Igbo, Yoruba and Hausa). The methods and the major themes explored were guided by the ecological framework for MHM research developed by UNICEF and Emory University.

Fig.5: Ecological Framework of Menstrual Hygiene Management



Data collecting methods used for the study were described below:

In-depth Interview (IDI): IDIs sought information on the personal knowledge, attitudes and practices engaged in by girls of menstruation and menstrual hygiene management.

Focus Group Discussion (FGD): The purpose of this was to provide information on the knowledge, societal attitudes and practices engaged in by girls, boys and mothers towards menstruation and menstrual hygiene management. In-school girls in the FGD who were involved in a participatory activity of drawing the school's "ideal" toilet, provided information on the types of toilets they would like to have in their schools. Girls also completed a "Day in the Life" Activity where they discussed the kind of challenges girls faced during menstruation in a school day.

Table 2. Activities completed and participants included during MHM Research Nigeria in Anambra, Osun and Katsina from July to October 2015

TOOL	POPULATION	NO OF ACTIVITIES COMPLETED	NO OF PARTICIPANTS
Focus Group Discussion (FGD)	In – School Girls	12	96
	In - School Boys	11	96
	Mothers of Menstruating Girls	12	97
In -depth Interview (IDI)	In - School Girls	24	24
	Out- of School Girls	24	24
Key Informant Interview (KII)	Principal/Head Teachers	12	12
	Teachers	24	24
	Chairmen School Board Management Committee (SBMC)\Parents Teachers Association (PTA)	12	12
	Chairman State Universal Basic Education Board (SUBEB)	4	4
	Zonal Directors Education (ZDE)	5	5
Observation	Schools	12	-
Total		152	394

Key Informant Interview [KII]:The purpose of this was to provide information on the menstrual hygiene management [MHM] challenges faced by girls in the school environment and stakeholders' involvement in the MHM promotion in schools and communities.

Observation Checklist [OC]

The school observation tool was used to assess sources of water supply, environmental sanitation, toilets, hand washing facilities, waste water disposal and drainage in the school environment.

Data Management

Responses during interviews from Focus Group Discussions (FGD), In-depth Interview (IDI), Key Informant Interviews (KII), were tape-recorded and notes taken to capture non-verbal expressions like body language and key quotes. All recordings were transcribed, translated, (if interviews were conducted in vernacular) and reviewed. Data collection and transcription were done concurrently within six weeks in each program area.

Data Analysis Procedure

The analysis of this study was carried out using both thematic/content analysis and framework analysis. Codes were developed using a mix of both inductive and deductive coding methods. Inductive coding was implemented by developing codes from reading the data directly without the influence of other outside sources while deductive coding was executed by developing codes from the study proposal and interview guides, and then triangulated with previously published data from other countries that had carried out similar studies. Analysis was carried out using the Atlas Ti 7 software.

Twenty transcripts from each state were randomly chosen and each transcript was read and re-read by four analysts, who noted immediately evident points and developed individual codes. Afterwards, the analysis team convened as a group and considered the codes developed by the individuals and noted areas in which they agreed or disagreed, and adapted an interim code-book. Thereafter, the objectives of the study and the interview guides were used to cross-check the codes developed to decide whether these codes conformed to study objectives, questions in the interview guides, and the study framework. Emerging data which had previously not been considered were also noted using memos and short comments. Since qualitative data analysis is an iterative process, the development, renaming, merging and splitting of codes went on throughout the process of analysis. An additional method of triangulation of data was adapted before the beginning of the coding process. This involved the discussion of the codes developed by the analysis team with the state coordinators, the UNICEF Nigeria team as well as the Emory University representative and receiving feedback on areas agreed on as being inadequately covered. These suggestions were then adapted into the codebook by the analysis team, that developed a standardized codebook, before the process of coding began. This report presented the findings of the study as well as the recommendations from both the participants and the analysis team. The quantitative data analysis of this study, used the observational checklist to determine the physical conditions of the WASH Facilities available in the schools covered. The quantitative findings substantiate the reports of the qualitative results.

(Details of the data analysis procedure is seen in Annex 8)

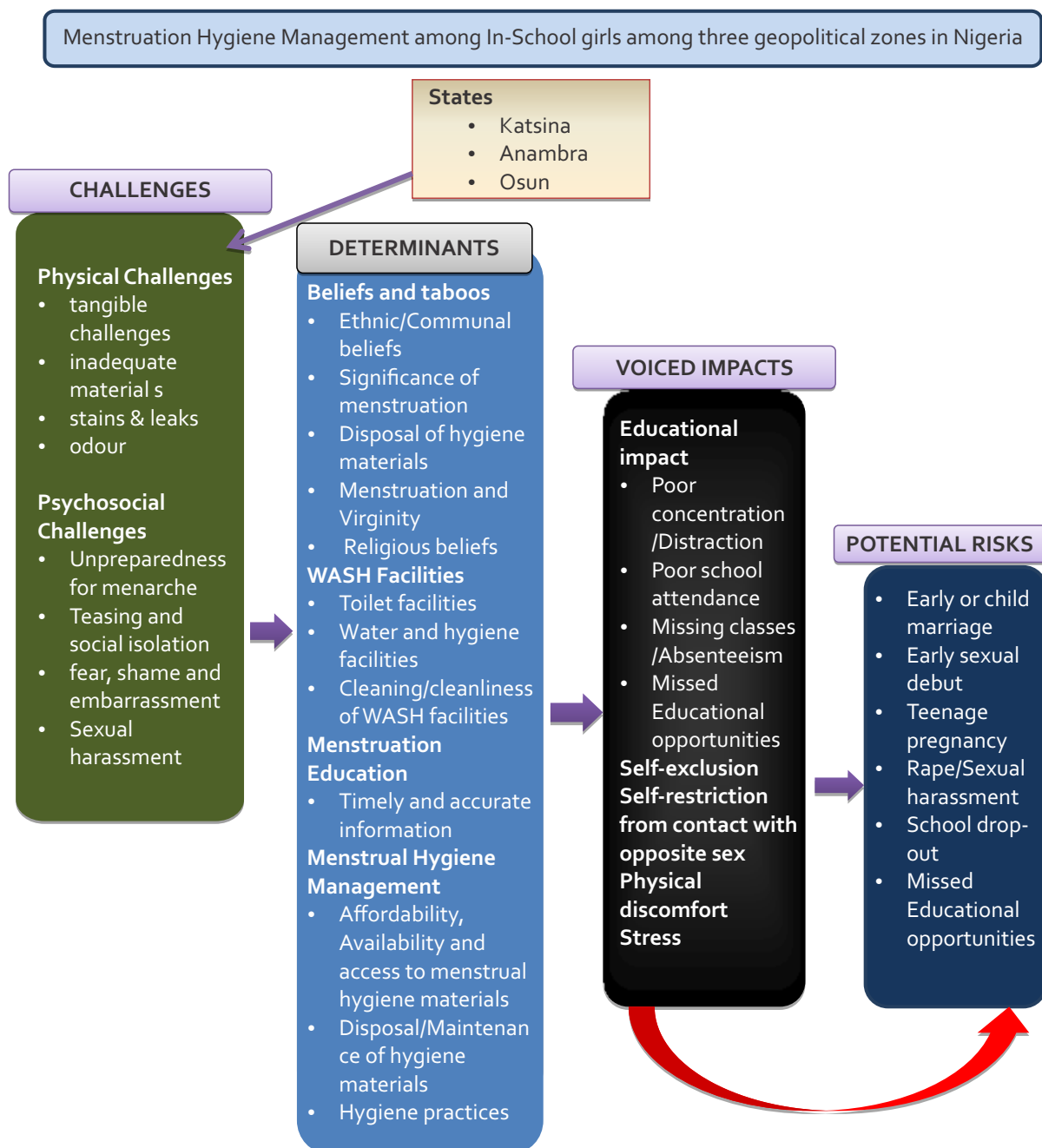
Ethical Consideration

The research proposal study was approved by the Research and Ethics Board Committee of the University of Nigeria Teaching Hospital, Enugu Nigeria. The Federal and State Ministries of Education as well as the States Universal Basic Education granted approval for the selected study schools to be used. Furthermore, the principals of the schools gave both oral and written consent for the schools and the students that participated in the study. Approvals were granted by parents/guardians of the students who participated in the study through written consent. A written consent approval was granted by out of school girls that participated in the study.

FINDINGS

The findings from the Nigerian study reflected the opinions, beliefs and experiences of menstruating girls and other participants concerning the challenges which menstruating girls faced while at school. The findings from the study were divided into five broad themes: the context, determinants, challenges, voiced impacts and risks as represented in the schematic plan: Figure 6 below.

Figure 6: Schematic representing the key thematic areas in the MHM findings



Study Context

Girls' experiences and the challenges they faced in managing menstruation were impacted by their broad socio-cultural and environmental contexts. Schools that participated in this research were located in three of the six geo-political zones in Nigeria. Nigeria is highly populated with over 500 languages and several ethnic groups in their various locations. Anambra State {South East} and Osun [South West} are located in forest regions with relatively high annual rainfall, while Katsina state {North West} is in an arid region with relatively low annual rainfall. The amount of rainfall to the regions affects the sources of water in the regions and ultimately accessibility to both potable water and other sources of water.

The culture of Nigeria is shaped by its multiple ethnic groups, religion and beliefs. Beliefs shaped how participants viewed menstruation. For many, menstruation signified a step not just in physical maturity but in emotional maturity as well. Participants from Osun and Katsina in Muslim majority areas stated that girl-children who had begun menstruation were old enough to be married out and bear children. Ethnic group and religion also determined the restrictions on menstruating girls. There were variations and similarities in beliefs of the various ethnic groups about activities and restrictions on menstruating girls as well as the disposal of used hygiene material.

Challenges

Challenges identified in this study are the various factors which made attending school during menstruation more difficult than attending school on other days.. Some of these challenges which are psycho social in nature included fear, shame, teasing and embarrassment in a desire to keep menstrual status hidden. Other challenges included the girls' lack of ability to manage menstruation properly, and this caused leaks and stains. There is also poor ability to manage physical effects like cramps, headaches and nausea during menstruation.

Physical/Biological Challenges

Girls reported that the onset of menstruation was usually accompanied by abdominal cramps, nausea, dizziness, mood swings, headaches, vomiting, loss of appetite and weight lost. In some cases, the girls experienced increases in body temperature.

These physical symptoms were reported to be so severe in some cases that the girl had to seek medical intervention from the school's clinic. In some of the circumstances where there were no clinics in the school, the girl was asked to go home and in some cases, the girl

P5: sometimes she do lose appetite, so it, will meet her will lose her weight.

P4: Sometimes she has stomach pain and waist pain

P8: Pimples will start coming out, and some even vomit, when they start having their menstruation

FGD, In school girls, Urban, Anambra

We always ask them to go home... to go home and take care of their selves at home since we don't have any facilities in the school. We ask them to go home and take care of their selves.

School Teacher Female, Rural, Osun

was given a classmate to escort her home.

P7: She will be moody. She will not be free as air."
FGD, Mother of in school girls, Urban, Katsina

I use to tell them to always put on pant and because I establish good human relations with them some use to complain to me that they don't have pant. Some are orphans and some male parents do not bring their female children close to them not to talk of knowing some of their problems. That means those that don't have pants do not come to school on that day because they cannot feel comfortable.
School Teacher Female, Rural, Katsina

Tangible Challenges

Inadequate materials

Girls who used clothes like napkins, pieces of materials, towels, tissue paper or other menstrual material apart from sanitary pads expressed fear of the menstrual material falling out of their underpants during active play. They also expressed fears that tissues or clothes might shift as they do not have

adhesives, causing the girl to become stained. Tissues could soak quickly to cause stains if the girl was not vigilant. In some cases the girls believed that the use of cloths could cause them to contact diseases.

Using tissues do not make Chioma comfortable, because...the tissue can easily shift and it will not be on the right way but if she is using pad, if she arranges it well it will not shift, ...and she feels comfortable with it but if she use tissue it can easily stain her because... they covered the pad at the back do they wont stain, but with tissue it can easily soak fast and if she does not notice early it can stain her uniform, if she is in the school.

FGD, In school girls, Rural, Anambra

Always (a sanitary pad) is different from cloths, because when she is in school, she won't be able to join her mates in their play if it is cloths, as it may leak and smell. She won't be able to stay with her friends; her friends may be asking one another about the cause of the odour, it is a thing of shame because she won't be able to own up that she is menstruating.

FGD, In school girls, Rural, Osun

Many of the girls expressed dissatisfaction with the menstrual materials they could access. They complained that they didn't feel comfortable when they used tissue paper. In cases where menstruation started unexpectedly while in school, some girls reported being fearful and seeking support from female teachers or the school clinic to provide them with sanitary materials to use. Schools that did not have clinics sent the girls home.

In Katsina State, some girls in the rural areas were not able to afford underpants. As a result, they were not able to use any menstrual material and they missed school for the entire period. Some of the girls did not have enough underpants to change during menstruation, hence most of them changed once and some do not change their underpants at all while menstruating.

Stains and Leaks

Girls also experienced leaks and stains of menstrual blood on their clothing. They noted that they felt scared of being stained while in the classroom and this usually made them uncomfortable sitting with classmates while in class.

Girls who had been stained while in class explained that they felt ashamed and embarrassed by unexpected menstruation. In some other cases, girls also noted that they stood up often to check their school uniforms, while refusing to sit for long stretches for fear of getting stained. In some cases, girls tied cardigans around their waists to avoid being embarrassed by an unexpected stain. These tactics to avoid being stained were observed by others and usually gave the girl's menstrual status away.

R: Sometimes when I am seeing my menstruation, I don't, I can't even sit down because my mind will be like if I sit down it will touch that cloth I am wearing
Out of School girl, Urban, Osun

I was ashamed because my cloth have already stained.

In school girl, Urban, Anambra

P6: She feels, she will feel ... she will feel, somehow embarrassed,

P7: She will feel afraid

P1: She will feel shy to associate with her colleagues,

FGD, In school girl, Rural, Anambra

Why people should avoid her is because some of them don't really have, they don't really take good care of themselves and it may lead them to, it may lead them to body odour.

FGD, In school girls, Urban, Anambra

Odour

Inadequate materials and lack of changing facilities meant girls could experience menstrual odour. Girls reported that the use of cloths during menstruation caused menstrual odour as compared with sanitary pads. Girls reported that odour contributed to social isolation. Other challenge are discussed below..

My girl, when she was menstruating, she didn't take care of herself as she should she allowed the thing to smell and that was how I noticed.

FGD, School boys, Rural, Osun

People avoid her because some of them don't really take good care of themselves and it may lead them to body odors.

FGD, In school girls, Urban, Anambra

Psychosocial Challenges

Psychosocial challenges are defined as challenges that impact the girls' psyches and affect their ability to socialize and continue their day-to-day lives during menstrual periods.

Unpreparedness for menarche

Girls felt fear when they experienced menarche. Fear was often accompanied by surprise and confusion and in some cases, profuse crying as girls did not have an understanding of what was

happening to them. This experience was universal, cutting across different ethnic groups, among rural or urban population and among in or out school girls. In at least one case, the blood was associated with loss of virginity, causing fear in the participant.

I was scared...I was just wondering that I did not meet (have sex) with a man and have done anything bad

In school girl, Rural, Osun

I was terrified, it terrified me, I wondered what was happening to me.

In school girl, Urban, Anambra

When she first starts menstruating she cannot feel comfortable, she will be scared, ..., some of them don't know what to do and they will start crying.

FGD, In school girl, Urban, Katsina

In contrast, girls who had received information on menstruation and their cycles prior to menarche did not mention being afraid during menarche or during unexpected menstruation.

P3: when she first starts menstruating she cannot feel comfortable, she will be scared, her body will be somehow, some of them don't know what to do and they will start crying. Those that already knew will just go ahead and take care of themselves.

FGD, In school girls, Urban, Katsina

Teasing/Social Isolation

Girls reported that sometimes they were made jest of by classmates, especially the males, when other knew they were menstruating and this left them ashamed and shy. Sometimes during menstruation, their friends made side remarks, laughed at them or avoided them due to the odor they had. Most of the time, the friends of the girl found out because of religious or cultural restrictions placed on menstruating girls, especially as these restrictions changed the practices of girls..

Yes sometimes, among our friends when we go to Islamiyyaschool they use to laugh at me when they discover that I didn't carry the Holy Qur'an, they will look at one another and burst into laughter

Out of School girl, Rural, Katsina

Some of the boys reported that they teased the girls with menstrual stains especially those that they did not like. In addition to this, teachers reported that sometimes, when girls refused to participate in active play (a restriction of menstruating girls), boys got upset and insulted the girls and causing them to cry. In some cases where the girl's hygiene management was poor, both male and female friends stayed away from her to avoid the odour, and

P4: In my thinking, as soon as see her and I know that she is stained by menstruation, I will tease her.

P7: If I were, and that girl and I had fought before and she had offended me; I will invite my friends to come around to make jest of her. We will tell her she is a dirty girl and does not know how to properly dress

FGD, Boys, Urban, Osun

this often left the menstruating girl distressed and isolated. Boys also avoided the girls during menstruation, as they believed they could impregnate a girl by touching her.

M: What do males do when they discover that she is menstruating?

P7: They reduce talking with her

P3: They will stop relating with her.

P1: They avoid her—FGD, In school girls, Rural Katsina

Fear, shame, and embarrassment

Girls also experienced fear of stains, leaks and odours and this could cause them to become distracted and extremely uncomfortable while in class. In cases of unexpected menstruation, the girls could hardly concentrate in class for fear of being stained.

Please God, do not allow this thing to stain my cloth outside otherwise one would be messed up
In - school girl, Rural, Osun

R: Sometimes, they don't use to sit down properly. They don't want sit down because they don't like staining their cloth, they don't feel comfortable. They use to sit halfway.

Male school teacher, Urban, Katsina

I won't seat well, I will sit but I won't sit well or I will not stay in the class. I will go to our hall so that I can't smell.

In school girls, Urban, Anambra

Girls who had been stained before in class explained that they felt ashamed and embarrassed by unexpected menstruation. Some of the girls noted that as a result of the fear of stains and unexpected menstruation, they preferred to stay at home during menstruation or while expecting their periods. Other girls expressed feeling of shyness and embarrassment.

I was ashamed because my cloth have already stained.

In school girl, Urban, Anambra

Sexual Harassment

Another challenge girls faced was sexual harassment from boys because they had become adolescents. Some of the in-school girls and their mothers noted that girls would be prevented from going out at night or from and partaking in

I was terrified, it terrified me, I wondered what was happening to me.

In school girl, Urban, Anambra

P3: when she first starts menstruating she cannot feel comfortable, she will be scared, her body will be somehow, some of them don't know what to do and they will start crying.

FGD, In-school girl, Urban, Katsina

I occasionally exercise fear and I am afraid when it starts.

Out of school girl, Urban, Osun

so if, like the harassment from boys if they notice she is menstruating and she is a virgin they would want to disvirgin her, she has to tackle it, so she would, her mother would avoid her from going out in the night maybe she would tell her that going out in the night will cause harassment from bad boys, something like that, that going around in the night
FGD, In school girls, Urban, Anambra

many activities to prevent them from getting raped by boys who found out they had started menstruating. Due to fear of sexual harassment and sexual exploitation by males, girls were usually restricted from disclosing their menstrual status to other people.

Determinants of Menstruation Hygiene Management

This section focused on the various factors that determined girls' hygiene practices and attitudes during menstruation as well as the challenges girls faced in managing menstruation both in school and at home.

The Beliefs and taboos of the Ethnic groups

Although some participants exhibited some level of scientific knowledge about menstruation and menstrual hygiene like correct methods for managing menstruation, appropriate hygiene practices during menstruation and in a few cases, the biology of the menstrual cycle. However, interviews showed that participants' beliefs impacted: (1) their willingness to use WASH facilities - where available, (2) the knowledge participants evinced about menstruation and menstrual hygiene management and (3) attitudes of family and community members towards menstruating girls. Participants in the study noted that most socio-cultural and family beliefs were passed from an older to the younger generations using stories, verbal rules and personal experiences. Menstruating girls (both within and out of school) as well as other study participants enumerated several beliefs about menstruation and its effects on their day to day activities during menstruation.

The belief of people in our community is that whoever has started to menstruate, it means that she is mature; she is ripe for marriage, someone who can give birth .Mother of Menstruating-in-School girls, Rural. Osun

Significance of Menstruation

Menstruating school girls, their mothers and other study participants noted that the onset of menstruation was filled with meaning. Menarche was often a cause for celebration in a family as it also signaled a change in attitude towards the menstruating girl by family members and other significant persons in a girl's life. Some girls noted that the onset of menstruation brought significant joy to them and their parents, as this implied they could bear children. This feeling of happiness was common among the school girls who had received pre-menarche menstruation education. In some cases, school girls noted that menstruation was a sign of maturity and that all women had to experience menarche and menstruation at some point in their lives. Some mothers noted that girls who had begun menstruating were accorded special respect.

There are different feelings at the same time a woman will be happy when she discover her daughter has started menstruation on the other side also there is fear...That at this particular time henceforth there is the need to begin to monitor her, cautioned her and correct her in a lot of things so the feel there are two mixed feelings. You know you are happy and there is the fear
FGD, Mothers of Menstruating School girls, Urban, Katsina

Mothers stated that women who did not experience menstruation were referred to as men by community members. Mothers also noted that the onset of menstruation in their daughter was accompanied with mixed feelings as menarche implied that their daughter could now get pregnant through sexual exploration.-,.

In Osun and Katsina States, some of the mothers and girls noted that menarche implied that not only could the girl have babies, she was also of marriageable age. In Osun state, some of the mothers stated that in some parts of the country, menarche was so celebrated, that an animal was killed and feasted upon to celebrate the event.

R: Yes. I liked it because, you know it is said that anyone who doesn't see it, that she can't get anywhere, that it's a blessing....That any woman that doesn't see it is in trouble. Another belief I have is that it is said that someone that doesn't see it will not be able to bear a child.

IDI, Rural School girl, Anambra

Among the various sociocultural groups, menstruation was referred to by several names, which reflected how the women, girls and other members of the community viewed menstruation. Such expressions or names included: "She sells palm oil {same red color of menstrual flow}"; "Relief holidays from prayers"; "The bridge that has collapsed"; "An unwanted visitor" and "Clear goddess". These phrases are significant as they showed the various perceptions of what menstruation is by the various ethnic groups in Nigeria. In other words, different ethnic groups have different names and meanings attached to menstruation.

Menstruation and Virginity

Another major cultural belief held by participants from Osun state, was the belief that a girl who experienced 'early' menarche was likely to have had an early sexual debut, which triggered the menstrual cycle. Such a girl was likely not a virgin. Loss of virginity among young girls outside wedlock was viewed as shameful both culturally and religiously. Thus menstruation when viewed as a loss of virginity was also seen as a thing which brought shame to many girls.

P4: if a child starts to menstruate the most important thing is that it is a thing of joy for the..., even those who have money will kill animal, and give to the poor, they would say the Lord is good that their future, they have known the she is now a complete woman they are rest assured that she would give birth to a child
FGD, Mothers of Menstruating-in-school girls, Rural, Osun state.

It (menstruation) enables us to know that the girl has started having sex... that she has started having sex for a long time. Boys in School, Rural, Osun State

Religious Beliefs

Some of the religious beliefs relating to the menstruating girls and menstruation depended on the religion of the respondent. There were menstruation related restrictions among the Islamic and traditional religions. Some other sects in the Christian religion, like the Apostolic faith Christians

Restrictions imposed on menstruating girls.

- *Entering certain designated places of worship.*
- *Restrictions in handling/ holding religious object.*
- *Bathing in designated places in a traditionalists setting.*
- *Entering rooms of a ritualist or traditionalist.*

believed that a menstruating girl would not allowed to participate in worship right inside the church but could worship outside. Some of these restrictions relating to menstruation which cut across the various faiths include the menstruating girl not entering certain designated places of worship like inside the altar or mosque. Restrictions in handling holy

objects (Bible, charms, Quran), restrictions on female to male contact and sexual activity.

Study participants from Katsina and Osun elaborated on the association between Muslim beliefs and early child marriage among adolescent girls who had experienced menarche. A school teacher in Katsina noted that it was believed that it was unacceptable for a girl to have a second menstruation under her father's roof as it could 'mean the father would go to hell.'

Of course religious and the traditional believe, that is all I want to tell you. It is based on society. In our society here there are some people with belief that if allow your daughter to menstruate in your house for once you are going to hell fire. Yes, some relate that they did not allow their daughters. It is now that people are being informed and become educated they even allow their girls to finish secondary school here in the northern and even further their education, and so on. Is used to be the problems if you go to the more local community. IDI, Rural, Male School Teacher, Katsina

However, although most other participants did not refer to menstruation as the basis for girl-child marriage, they did refer to religion as a major reason why pubescent girls got married out.

Most of the responses from menstruating women showed that religious beliefs on menstruating females prevented them from some religious as they were regarded as unfit, unclean, and filthy. Their prayers and supplications in some cases are regarded as

Socio-cultural Beliefs on menstruation

- *Unfit*
- *Unclean*
- *Prayers & supplications not acceptable*

unacceptable. Restrictions also served to 'expose' them to the other members of the religious sect, as menstruating females were required 1) to avoid entering religious places of worship or holding religious objects, 2) undergo ritual cleansing at the end of their period by taking their bath either in designated religious places or using clean water or 3) in the case of traditionalists, avoid entering rooms and touching anything of the fathers' as this would destroy the potency of the father's charms. This was noted to serve as a definite cause of embarrassment for the menstruating girl as menstruation is viewed as a rather private affair among women in Nigeria. (See Annex 3).

It is worthy of note that most of the religious beliefs which were related to menstruation and menstrual management were explained by the mothers of the in-school girls, and this cut across all the states under study. Girls in school seemed to have little knowledge of these things, apart from their knowledge and practice of restrictions placed on entry to religious places and holding of religious objects.

Beliefs Surrounding the Disposal of Hygiene Materials

Across all the states, menstruating females interviewed (in school, out of school girls and their mothers) demonstrated an aversion to disposal of used sanitary materials in public waste bins. Reasons for poor usage of waste bins and dump sites was linked to direct instruction from mothers, older female community

My mother then used tell us, that whoever is menstruating if she indiscriminately handle her menstrual material such that cockroaches should eat or rats carry it away, it away such person may not be able to give birth

FGD, Mother of In-school girl, Osun State

members and care takers not to use public disposal systems for fear of used sanitary towels being taken by 'ritualists' and other people in the immediate surroundings to cause harm to the menstruating girl. In addition, some interviewees from Osun State believed that if animals picked used menstrual materials, it was a sure cause for barrenness in the future.

That available refuse dump, one must not throw it there... because one mummy told us that if one should dispose it there, that dog can pick it... that such a person will not be able to have baby..., one can only throw litters there, but things like that [menstrual material] cannot be thrown there.

FGD, Rural School girl, Osun

Some girls use to dispose them anyhow....at the backyard, inside the teacher's farms.

IDI, Urban School girl, Katsina

R: After using it, et if in the school I will tie it when I reach home, I will put it in pit toilet. We have a dustbin but I think that we should not put it in a dustbin. My mother, she tells me that I should not throw it away it like that **IDI, Rural school girl, Anambra**

Some of these beliefs were influenced by folk lore or by the cultural requirement to keep menstruation and menstrual hygiene materials extremely private. This ideology was more pronounced in Osun and Anambra States, and but rarely in Katsina State .

M: Why won't you dispose your used menstrual material in your disposal site?

P4: they might look for pad to pick because ...their intention is to use the pad for ritual something like that

M: Where did you get the information that pads, used pads are used for rituals?

Other Cultural Beliefs

Girls are not allowed to 'move close' to men once they begin to menstruate.

Many family members communicated that pubertal girls should stay away from men to avoid unwanted pregnancy. Rarely did a parent or school girl explain that this implied having sexual intercourse with a man. This misinformation or lack of clear communication

P3: the novel I read, there is a girl that, when she finish her menstrual cycle, she normally throw her pad anywhere and there is a man that always come there to pick it every month ... the lesson I learnt is that whenever you throw your pad anywhere after your menstruation, anybody that want to cause any harm to you may come there and pick it up and do whatever he or she wants to do to you, because she or he has already get what she wants from you

FGD, Urban School Girls, Anambra State

When I started my own menstruation I was asked to not to even touch a man like this because if I touch any man I will be pregnant So when my junior brother touches me I went out crying and I said that, my brother touched me. So I will be pregnant, she said no, If it is your blood brother, But if somebody touch touches you outside Since you have started menstruation, you have to be very careful don't allow any man to touch you.

Mother of Menstruating-in-school girl, Rural community, Osun state

God will help us, I have a boy, I used to call him that for your future if you see a girl that has been menstruating do not mate with her because firstly, he might contact infections and secondly they may do it and pregnancy resulted and I know for real the child will be an "albino".

Mothers of in-school girls, Rural, Osun

often resulted in boys and girls restricting play and interaction with each other.

Another popular belief among the Yoruba ethnic group of Osun State, was that a girl who had sex during menstruating would have a child who 'suffered' from albinism. This taboo was extracted from group discussions with mothers of menstruating in-school girls, who stated unequivocally, that this was used to warn boys and girls about sexual activity during menstruation. This was not mentioned by any other group of people in the study findings.

AN ASSESSMENT OF MENSTRUAL HYGIENE MANAGEMENT IN SECONDARY SCHOOLS

Table3. Summary of WASH Conditions in Schools

	ANAMBRA				KATSINA				OSUN				TOTAL (12)
	RURAL (2)		URBAN (2)		RURAL (2)		URBAN (2)		RURAL (2)		URBAN (2)		
	n	%	N	%	n	%	n	%	n	%	n	%	
No. of schools with latrines	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%	12 (100%)
No. of schools with at least specifically for use by girls only	0	0%	1	50%	2	100%	2	100%	1	50%	1	50%	7 (58.3%)
No. of schools with at least some partially functional latrines for girls	0	0%	1	50%	1	0%	2	100%	1	50%	0	0%	5 (41.7%)
No. of schools with at least some somewhat clean latrines for girls	0	0%	1	50%	1	50%	2	100%	1	50%	0	0%	5 (41.7%)
No. of schools with at least some light in latrines for girls	0	0%	1	50%	0	0%	1	50%	1	50%	1	50%	4 (33.3%)
No. of schools with at least some functional locks in latrines for girls	0	0%	1	50%	1	50%	2	100%	1	50%	0	0%	5 (41.7%)
No. of schools with at least some functional locks outside girls' latrines	0	0%	1	50%	1	50%	2	100%	0	0%	0	0%	4 (33.3%)
No. of schools with at least some trash bins	0	0%	1	50%	1	50%	0	0%	0	0%	0	0.0%	2 (16.7%)
No. of schools with anal cleaning materials	0	0.0%	0	0%	0	0%	0	0%	1	50%	0	0%	1 (8.3%)
No. of schools with space or pits used for burning used sanitary materials	0	0%	0	0%	1	50%	0	0%	0	0%	0	0.0%	1 (8.3%)
No. of schools with incinerators for burning used sanitary materials	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%	1 (8.3%)

AN ASSESSMENT OF MENSTRUAL HYGIENE MANAGEMENT IN SECONDARY SCHOOLS

No. of schools with latrines that are: exclusively for girls, at least partially functional and at least somewhat clean	0	0%	1	14.3%	1	50%	2	100%	1	50%	0	0%	5 (41.7%)
No. of schools with latrines that are: exclusively for girls, at least partially functional, at least somewhat clean, and functional locks inside latrine	0	0%	1	50%	0	0%	2	100%	1	50%	0	0%	4 (33.3%)
Water Observations													
No. of schools with functional water source on school grounds at time of visit	1	50%	2	100%	1	50%	1	50%	1	50%	0	0%	6 (50%)
Hygiene Observations													
No. of schools with handwashing facilities available	1	50%	2	100%	2	100%	2	100%	0	0%	0	0%	7 (58.3%)
No. of schools with handwashing facilities with soap or ash available	1	50%	1	50%	0	0%	1	50%	0	0%	0	0%	3 (25%)
No. of schools with handwashing facilities with water available	1	50%	2	100%	1	50%	2	100%	0	0%	0	0%	6 (50%)
No. of schools with handwashing facilities with soap or ash and water available	1	50%	1	50%	0	0%	1	50%	0	0%	0	0%	3 (25%)

WASH FACILITIES

The availability, functionality and accessibility of available WASH facilities by school students played a very important role in determining the challenges faced by in-school girls in handling menstruation and in observing menstrual hygiene management practices while at school.

<i>Toilet compartment</i> - an individual stall/seat/open pit/squat plate where a single child can defecate in private (not urinals).
Functionality
<p>1. Functional – toilet facilities are not physically broken and can be used.</p> <p>2. Partially functional – toilets can be used, but there are at least some problems with the physical infrastructure (e.g., deterioration in concrete, loose doors, locks, deteriorating roof) and some repair is necessary.</p> <p>3. Not functional – toilets exist, but are so badly damaged or deteriorated it is no longer reasonably possible to use them (squat plate broken, door missing, etc.)√</p> <p>4. Don't know-Unable to assess because locked from the outside</p>
Cleanliness
<p>1. Clean – toilet compartments are not smelly; there are no visible faeces in or around facility, no flies, no litter.</p> <p>2. Somewhat clean – there is some smell and/or some sign of faecal matter/urine and/or some flies and/or litter.</p> <p>3. Not clean – there is a strong smell and/or presence of faecal matter and/or urine and/or significant fly problem and/or large amount of litter.√</p> <p>4. Don't know-Unable to assess because locked from the outside</p>
Light
<p>1. Light –vision is essentially the same on the inside as it is on the outside.√</p> <p>2. Somewhat dark – there is less visibility on the inside, but it is still possible to see clearly. Girls would be able to look at their uniforms and tell if there is a stain.</p> <p>3. Dark – toilets and latrines are very dark on the inside. It is really hard to see. It would be difficult for girls to look at their uniforms and tell if there is a stain.√</p> <p>4. Locked- Locked from the outside</p>

Toilet Facilities

Availability and Accessibility

Across all the states, most of the school participants (both girls and teachers alike) reported that toilet facilities were available in the schools for use. Table—shows toilets/latrines available in all the schools of this study. Also, findings showed that 41.7% of schools had toilets for girls only. The most common types of toilet available in schools were the pit toilets, ventilated

I: How about toilet, do you have toilet? Where you throw away or wash your material or bathroom where you can wash it?
R; Yes....pit that is dug, it is not water system that it is.

In School Girl, Rural, Anambra



Photo credit: Chioma Eze, 2015

Pour flush toilet in school



Photo credit: Ladi Sambo

School Pit Toilet in rural area Katsina

Table 4. Summary of Ratio Toilet to Student across the Study Zones

Table X: Summary of WASH Conditions in Schools

School Name	Type of school (ex. girls only, co-ed)	School Pupil Population							School Gender Segregated Latrine Numbers							School Non-Gender Segregated Latrine Numbers	GIRLS LATRINES EXCLUSIVELY										
		# of girls	# of boys	total # of pupils	total # of latrines	total # of latrines AT LEAST partially functional	total # of latrines AT LEAST somewhat clean	total # of latrines AT LEAST some light	total # of latrines with functional lock	# of latrines exclusively for girls	# of latrines exclusively for boys	total # gender segregated latrines	total # gender segregated latrines AT LEAST partially functional	total # gender segregated latrines AT LEAST somewhat clean	total # gender segregated latrines AT LEAST somewhat light	total # gender segregated latrines with functional lock	# of latrines used by both girls and boys (if applicable)	# of functional latrines	# of partially functional latrines	# of AT LEAST partially functional latrines	# of clean latrines	# of somewhat clean latrines	# of AT LEAST somewhat clean latrines	# of latrines with light	# of latrines with somewhat light	# of AT LEAST somewhat light latrines	# of latrines with functional lock inside latrine
ANAMBRA TOTAL		1217	403	1620					29	0	29	29	29	29	29	5	29	0	29	19	10	29	29	0	29	29	0
Rural1	COMMUNITY SECONDARY SCHOOL, MGBAKWU	JSS MIXED	143	131	274	0	0	0	0		0	0	0	0	0				0	0	0				0	0	0
Rural2	COMMUNITY SECONDARY SCHOOL, ACHALLA	JSS MIXED	132	179	311	5	5	5	5		0	0	0	0	0	5			0	0	0				0	0	0
Urban1	GIRLS SECONDARY SCHOOL, AWKA	JSS ALL GIRLS	849		849	29	29	29	29	29		29	29	29	29		29		29	19	10	29	29		29	29	0
Urban2	COMMUNITY SECONDARY SCHOOL, AMAWBIA	JSS MIXED	93	93	186	0	0	0	0	0		0	0	0	0				0	0	0				0	0	0
KATSINA TOTAL		5528	5466	10994					53	13	66	39	35	2	26	0	32	6	38	29	6	35	2	0	2	2	26
Rural1	GOVERNMENT DAY JUNIOR SECONDARY SCHOOL, JIKAMSHI	JSS MIXED	257	2215	2472	12	1	0	0	0	5	7	12	1	0	0			0						0	0	1
Rural2	GOVERNMENT GIRLS SECONDARY SCHOOL, MUSAWA	JSS ALL GIRLS	267		267	9	9	6	0	3	9		6	0	3		9		9	6	6				0	3	
Urban1	GOVERNMENT DAY JUNIOR SECONDARY SCHOOL, KARFI	JSS MIXED	241	3251	3492	23	17	17	2	17	17	6	17	2	17		17		17	17	17		2		2	17	
Urban2	GOVERNMENT GIRLS DAY SECONDARY SCHOOL	JSS ALL GIRLS	4763		4763	22	12	12	0	6	22		12	12	0	6		6		12	6	6			0	6	
OSUN TOTAL		787	804	1591					5	8	13	7	7	10	5	4	3	0	3	1	2	3	2	3	5	3	2
Rural1	BA MIDDLE HIGH SCHOOL	JSS MIXED	98	109	207	8	7	7	5	5	3	5	8	7	5	5		3		3	1	2	3	3	3	3	2
Rural2	HAYI MEMORIAL MIDDLE SCHOOL, ADA	JSS MIXED	162	181	343	4	3	0	3	1			0	0	0	4			0	0	0				0	0	
Urban1	COOKER MEMORIAL MIDDLE SECONDARY SCHOOL, KIRURE	JSS MIXED	415	384	799	0	0	0	0	0			0	0	0				0	0	0				0	0	
Urban2	AMOTA COMMUNITY HIGH/MIDDLE SCHOOL	JSS MIXED	112	130	242	5	0	0	5	0	2	3	5	0	5	0			0	0	0		2		2	0	

Number of Toilets/Student to Toilet Ratio

General observation in the schools studied indicated inadequacy in the number of toilets available for students' use. The study findings from the schools' observation showed the overall ratio of toilet to students for girls is 1:297 and for boys is 1:1216 [See Table 4, above.]

Findings from this study also showed that in different states/zones the challenges of students to toilet ratio differed. For example, in Katsina state [North East zone] a huge difference was observed where overall mean girl pupil to girls toilet ratio was 33:1 as compared to 241:1 and 311:1 of Anambra and Osun respectively. Katsina State is predominately a Muslim state and the religious/ablution practices demand privacy especially as it concerned girls. Hence a great need for girls to have many available toilets to meet their religious practices even while in schools.

This requirement is not demanded in Anambra State where the majority are Christians and in Osun State where there is a mixture of Christians and Muslims.

In some schools in Anambra, WASH facilities were available for teachers but students were expected to use nearby bushes. This exposed them to certain dangers such as snake bites, kidnapping and rape. In some cases, students were forced to go home or to nearby houses in the school to change their menstrual pads.

In Katsina State, some of the in-school girls stated that students were only allowed out of the classroom during break periods, except if the student had an emergency like menstruation and then the student had to take permission from class teachers or some other authority figures to be able to use the toilets.

The toilet that where the problems lies in the school here we only have one toilet facilities all the school both the junior secondary school and senior secondary school all the toilet are down only one is functioning the use have problems you know this issue of toilet is a major problem in the school ...Only one block of toilet having six holes For the girls there have three and for the boys three.

Male School Teacher, Rural, Katsina

R: If the master is in the class we may ta R: Yes, students normally go to toilets during break. Students are not allowed to go out unless during long break or short break.

I: Do they allow them to use it sometimes?

R: Yes

I: for instance when a girl is menstruating, will they allow her to use the toilet?

R: Yes, they can allow her

In School Girl, Rural, Katsina

Table 5. Overall Summary Ratio of Students to Toilets in Urban Vs Rural Schools of the Study

Overall girls pupil-to-latrine ratio in girls-only schools	Urban	Rural	
Girls in single schools	82:1	30:1	
Overall mean pupil-to-latrine ratio in co-ed schools			
Girls	214:1	168:1	
Boys	378:1	272:1	

Findings from the study showed the overall summary average of girls-students' to toilet ratio in urban versus the rural areas in all the states/zones: 82:1 in urban against 30:1 in rural areas. This revealed that girls in rural schools have more access to toilets than those girls in the urban schools. The same trend of findings was seen in the overall mean pupil-to-latrine ratio in co-ed schools wherein the urban schools for girls was 214:1 and for boys 374:1 while that in the rural schools for girls is 168:1 and for boys 272:1.

Functionality

Functionality in this study is defined as the toilets being equipped with basic equipment which are required to make the toilet usable like flushing systems (where applicable) and no deterioration of concrete, doors, roofs, locks, etc. (UNICEF Emory University, 2014). Across all states and local governments, the functionality of the toilets differed depending on each school. At some points, participants stated that toilets were functional when they did not, in fact fit the definition of functionality. The most obvious example of this was when individual toilet compartments did not have doors. Some of the toilets were without roofs, doors, windows and covers for pit toilets. Participants noted that because of poor access to water, the students could not use water system toilets as this implied that they would leave such toilets not flushed and unusable. Some of the student toilets were in various state of disrepair making the use of toilet alternatives quite popular especially bushes



School Toilets without doors & some parts without roof

Other restrictions included locked facilities which the key informants said was a way of monitoring usage to prevent vandalism. The key was usually kept with a staff member from whom permission had to be gotten to utilize the facility. Girls were sometimes required to bring a bucket of water first before teachers would give them the key. Many of the girls in school said they did not use toilets in school because of this reason and reported never changing their menstrual material while in school. In emergency cases where unexpected menstruation or a leak occurred, the toilet facilities were not the first choice location for changing menstrual materials. Girls stated that they preferred to use nearby houses, bushes or farms to change their menstrual materials because of the uncleanliness of the toilets. In some of the schools where the toilets were clean or manageable, the girls used the toilets to change their sanitary materials.

During the interviews, girls described their ideal toilets using diagrams and some of the common features of the ideal toilets included, flushing systems, water closets, provision of soap, running water, wash hand basins, adequate doors and windows. In addition, another common feature of the ideal toilets was the individual cubicles which granted the girls some measure of privacy. Diagrams which showed the ideal toilet as depicted by the girls can be seen in Annex.....

M: then I said how does this your ideal toilet enable you to take care of yourself when you are menstruating? In terms of water,

P3: it is because when we are menstruating and went to the toilet the facilities are there, the facilities are there to enable you clean everywhere, everything. After the menstruating period you use the water to wash your body and also wash your hand

P7: after cleaning the toilet that you have messed up, then you use soap to wash your hands **FGD, In School Girls, Rural, Anambra**

Privacy and Safety

Participants' experiences of privacy in the use of toilets and toilet facilities were varied and dependent on the schools' facilities. Girls spoke about the privacy as defined by 1) girls' toilets being separate from the general toilet blocks; 2) toilets having doors which could be locked from inside; 3) lockable windows; 4) roofs; and 5) the number of people who used the toilets at the same time. The study showed that 7 out of 12 schools had girls' toilets that were separate from boys' latrines. The study did not measure where boys and girls toilets were in relation to each other. Findings showed that only 5 of the 12 latrines had at least some functional locks inside girls' latrines.

In some schools where the toilets were not segregated, male and female students and teachers used the same toilets. This was

I: How many toilets do you have?
 R: Four
 I: Teachers are using the four of them?...Eh, do they lock it?
 R: Yes Aunty, they lock it
 I: So, if you are in school now, if you want to change, what do you do?
 R: You go to the bush and change.
 I: So, are there no toilet for students to make use of at all, both boys and girls?
 R: We don't have toilets.
 I: Only the teachers are using all these toilets?
 R: Yes ...They are_, they are the ones using them
IDI, school girl, rural, Anambra state



Photo Credit: Chioma Eze, 2015

Teachers' toilet locked

Majority of the female students across the three states stated that they did not feel safe using school toilets and other hygiene facilities as there was no visible form of security. The feeling of lack of safety was very high among students who had to use the bush as an alternative to lockable toilets.

It is not secured, the toilet, is not neat enough and the doors are not well closed" In School Girl, Urban, Anambra

Participants also shared that in most schools, the classrooms were a long distance away from the toilets. As a result, the students had to walk a distance to get to the toilets, thereby putting themselves at risk of being kidnapped or raped or bitten by snakes. In some of the schools, the classes were only a short distance away from the toilets, but the toilets lacked secure locks. This caused the girls feel unsafe in using the toilets.



Photo Credit: Nkadi Onyegebu 2015

Toilet block about 800 meters away from classroom

*R: There is not enough protection around...the pit toilet is along the bush path. On the way to [name], the way that leads to the stream where we go to fetch water.
In School Girl, Rural, Osun*

P1: We get afraid, because it is dangerous. There are problems, inside the bush there are snakes there. Many dangerous things are there that could harm one

M: Apart from snakes, what other things?

*P3: There are kidnappers
FGD, In School Girl, Rural, Katsina*



Photo Credit: Nkadi Onyegebu 2015

Broken door in school toilet in rural area

I: Ok. What about sanitation facilities?

R; We don't have unless the improvised holes, pits we dig and they put those used sanitary towels inside there

KII, School head, Urban, Anambra

Disposal Facilities – Availability, Accessibility and Usage

It was not common to find disposal facilities right inside the school toilets. Findings from the study showed that across all the schools, there were no specific waste bins for disposal of used menstrual materials. This was not surprising because all the participants in the ethnic groups under study held strong cultural beliefs in relation to disposal of used menstrual material. There were few waste bins outside the classrooms and no dug waste pits for general disposal of wastes. In some cases, girls started using pit toilets to dispose their used menstrual materials while others wrapped theirs and dispose them at home.

I: These toilets what is the condition they are in now?

R: They are dilapidated somehow... that is the roof but the things that were put there are still there something like where you can that is the floor. its still there

I: Ok let me ask this question again, does the school have any water available in latrines?

R: There is none

I: Why?

R: The borehole that was supposed to supply the water there is not functional.

KII, School Head, Rural, Anambra

R: our toilets have spoiled and some have even collapsed. two out of them are functional but the other two have collapsed down."

In School Girl, Urban, Katsina

However, despite the strong external influence of community beliefs and mothers' advice on disposal of sanitary towels in Anambra, some of the girls and teachers noted that used menstrual materials were also disposed in dustbins, pit latrine toilets, dumping sites and incinerators (where available), and at other times in overgrown bushes, farms and even on the ground around the classrooms. Boys stated that they found sanitary pad in bushes and schools, even though a lot confessed that they had no prior knowledge of what they were or what they were used for, implying that appropriate disposal facilities were lacking in the schools.



Waste baskets outside the classrooms & solid wastes disposal ground in front of the classroom block



Waste Basket outside toilet

Photo Credit: Nkadi Onyegebu 2015

Water and Hygiene Facilities

A major determinant of usage of WASH facilities in schools was accessibility and availability of water. Adequate water supply was a challenge in many schools with very few having running water in the WASH facilities or having water supplied by water tankers. None of the schools under this study had municipal water supply. Common sources of water in schools included streams, wells, borehole water, rain water and in rare cases, pipe borne water. In cases where there were boreholes in the school environment, study participants stated that some of such boreholes were not functional and in most cases water sources were not connected to the school toilets. Students were mandated to go and fetch water using buckets which were used in cleaning toilets, flushing and hand washing, often at some distance from the school.

I: Do you have water in this school

R: No, we use to fetch water from the well...an open well

I: is this your only source of water?

R: Yes, we keep in containers.

IDI, In School Girl, Urban, Katsina

R: we normally use [toilets] always but we don't have water. We use to go fetch from borehole. We still use to get problem. We sometimes use to fight with the school boys....we don't get enough water.

In-School Girl, Rural, Katsina

I: Ok are they available in the toilet?

R: The water no, no, no, they use the bucket to carry it water and go wash it

School Teacher Male, Urban, Katsina

Common Sources of Water in Schools

- Streams
- Well
- Rain



Rain harvested water tank



Dysfunctional water borehole

Photo Credit: Nkadi Onyegebu 2015



Photo Credit: Nkadi Onyegegbu 2015



Underground tank water storage. Overhead water



Well water in rural school. Photo: Ladi Sambo

Basic hygiene facilities included wash hand basins, cleaning materials such as soap and disinfectants, hand towels and tissues which girls could use in cleaning their hands or wiping themselves after using the restrooms. In most of the interviews, participants stated that hand washing materials were not always available. These hand washing materials included hand basins, soaps for washing hands, and running water. Observations from the field show that although some of the schools did possess these facilities, they were found in most cases in the teachers' toilets and not in the students' toilets.

In schools where water was readily available, many students noted that they regularly observed hand washing practices. In schools where there was limited water, students were not always able to wash their hands to keep them clean. Since water provision in the schools was inadequate, the use of toilets was limited. The inadequate provision of water in the schools created more problems during the dry seasons when there was little or no rainfall when the school wells dry up and when the boreholes become non-functional. Because of this, the girls drying of school wells and dysfunctional boreholes, forced the girls to walk to fetch water for cleaning at boreholes in neighboring government establishment buildings nearby the schools.

In response to the negative association between menstrual hygiene management issues and scarcity of water supply in schools, menstruating girls often had to seek other ways of cleaning themselves and washing their hands during their periods. Some of such methods included using toilet tissues instead of water (where available), trekking long distances to fetch water, purchase of sachet water to use, using of rain water stored in drums or jerry cans or in some cases, bringing own water from home. In some very rare situations, the girls admitted to using sand to 'wash' their hands.

I: When water is not available, what do you do when you are menstruating?

R: When water is not available and I am in menstruating and when I change the thing and my hand is stained with blood and will not see water to wash my hands I will now use toilet tissue, we have toilet tissue in the toilet, I will now use the toilet tissue and clean up my hands.

In school girl, Rural, Anambra

R: We normally wash our hand with sands on the ground.

In school girl, Urban, Katsina

I: Ok, ok how about wash hand basins and soap do you have them?

R: Yes

I: Where do you have them?

R: We have it at the toilet, in the class, in the classroom wash hand basin?

I: What of soap?

R: We have it there and in the classroom

In school girl, Urban, Anambra

To replace hand washing facilities where they were not available within sanitary facilities, buckets with taps were placed near classrooms,

legacy facilities from the 2014 Ebola scare in Nigeria, which were designed specifically to encourage hand washing to prevent the spread of the disease.

Cleaning of Sanitation Facilities

None of the interviews indicated that there were specific employed staff for cleaning the toilet. Cleaning was done by the students, usually as a form of punishment for coming late to school or not doing their class assignment. It was the responsibility of the student health prefect to make sure that students cleaned the toilets and further supervised by a staff member.

M: How often do you wash your toilets?

P4: We don't wash often because, especially, those that are still washing the toilet, are those that normally make noise or those that do not do assignment, or that failed the teacher's rules, they normally wash toilet, but it's maybe once in a while

M: So if nobody fails the teacher's rules or make noise, you don't wash the toilets?

P5: We do, even if there is no offence of any student, class making noise, , the sanitary prefect has to call her assistant and also so many other of her mates to help her in it

FGD, In school girls, Urban, Anambra

Despite this, many of the girls interviewed said they did not use the school toilet facilities because of the filth. Girls preferred to use the bush or not use the WASH facilities in school. Some girls expressed the willingness to utilize

I: Okay is your toilet attached with hands washing basin?

R: Yes

I: in the toilet?

R: No, outside

I: close to tap?

R: Yes

I: what of toilet soap?

R: we don't have toilet soap except when you bring it from home.

R: No, we only wash our hands through the window whenever we are in class or we go to wash at the borehole.

In school girl, Rural, Katsina



Bucket with tap & waste basket

Wash hand basin outside the classroom

Photo credit: Chioma Eze, 2015

I: why are you not changing sanitary pad in school?

R: Because all the school toilets are always unkempt.

I: do you mean you can change your pad in school when the toilets are well cleaned?

R: Yes

In School Girl, Urban, Katsina

Ownership of Facilities

The Key Informant Interviews with the head teachers, teachers and education managers revealed that there was no sense of ownership of the facilities. Head teachers and teachers expected maintenance and repair to be by the Government or Development partners like UNICEF who provided the facilities at the first instance. In addition, only in rare cases were school heads responsible for the materials used in maintaining and cleaning toilets, rather they relied on donations mostly from parents, Faith Based Organizations {FBOs}, Non-Governmental Organizations {NGOs} and Alumni of the school.

Menstruation Education and Information

Lack of timely information on menstruation and puberty

Girls received information on menstruation in many ways: 1) informally at home, usually from their mothers, friends or by observing the activity of older sisters or women; 2) formally in school from subjects like Basic Science, Home economics and Physical and Health education (taught in Junior Secondary School); 3) formally through nurses who paid community visits to schools; and 4) formally, through marketers in sanitary pad distribution companies, who come to schools to educate girls on menstruation while marketing their products.

In Katsina and Osun states, a critical source of menstruation education was the Islamiyya school system. Islamiyya is usually run concurrently with formal school education, as the children go to Islamiyya in the afternoon or evenings after school. In these Islamiyya schools, while the girls learned Islamic religious beliefs and restrictions surrounding menstruation. This was the most common source of menstruation education among girls in Katsina state. The teachers (mallams) at the Islamiyya schools were often male, although culturally, girls were meant to keep information about menstruation from males. Some of the girls discussed beliefs related to Islamic teaching which emphasize that menstruation enables girls release diseased blood from their bodies.

Despite all the varied sources of education about puberty and menstruation, a lot of the girls (both in and out of school) stated that they had no prior knowledge about menstruation before menarche. Girls usually experienced menarche at age 12 and in junior secondary school level.

M: Okay, who else can teach Favour how to take care of herself when menstruating?...

P8: Her, P8, her elder sister, can do that because, she is also experiencing the same

P3: She may learn with her friend that is the first person to start the menstruation, FGD, In-school girls, Urban, Anambra

R: When they go to Islamiyya School they also teach them there.

R: you can learn from school or home before you start

FGD, In school girls, Rural, Katsina

R: For somebody like me, I knew from my friends that all women do it; so by the time I started mine, I knew that mine has come and that the knowledge of it is now mine

I: So before you start to menstruate, did you learn anything about menstruation?

R: Yes.

R: Some company that is producing 'ALWAYS' came to our school and told us everything about menstruation.

R: My mother have taught me about menstruation, and even my aunty.

In-school girls, Urban, Osun

Some of the participants stated that apart from regular classes, the girls also learnt about menstruation through occasional seminars and talks given on puberty, menstruation, and reproductive health issues by marketers of menstrual pads, NGOs and health educators. Information on tracking menstrual cycles was

I: Okay, but as a science teacher did you teach it?

R: We do

I: Did you discuss it?

R: Not really because they are not mature enough

I: Okay, what is the age range of your students?

R: Thirteen...thirteen, they are not matured

Male School Teacher, Rural, Osun

not always correct, thus girls were unprepared much of the time. However, girls had also learnt to use physical indicators as predictors of menstruation onset. Most of the girls knew their physical signs of menstruation onset, including abdominal cramps, mood swings, headaches and nausea.

The zonal inspector of Education in one of the states mentioned the possibility of teaching students during Family Life Education Classes, this did not recur anywhere else in this study.

*There may be any workshop, so, the teachers are being informed there is a family life education, population and family life education. It has now become population and AIDS education, HIV /AIDS education. So majorly, we deal with that menstrual hygiene there and the implication of having premature sex and some other things"***Zonal Inspector of Education, Katsina**

Teachers' comfort level on teaching menstruation varied. Many male and female teachers expressed discomfort. Males experienced discomfort because they didn't experience menstruation and female teachers because they didn't feel comfortable discussing menstruation in the presence of boy students.

R: We don't feel comfortable. Because, the boys are there. Looking at you, and at times when you want to demonstrate, the girls will be feeling shy, ((giggling: 12:46)) is a challenge.

Female School Teacher, Rural, Anambra

Some of the teachers felt the students in junior classes were too young for detailed information on puberty and menstruation despite many girls already having started menstruating. All the teachers (irrespective of their sex) expected the girls to get more details regarding hygiene management from home.

Feelings on menstruation education were varied among mothers of in-school girls, with some stating that the girls' first point of education was the home, while others said that they assumed the girls had already gained some information about this from school so it was not necessary to go into details. Some of the mothers also noted (especially in Katsina State) that they might feel shy discussing menstruation education with their daughters, while others were comfortable with it.

Many parents wanted their daughters to receive information on menstruation from school. This unclear responsibility of knowledge transfer resulted in inadequate information about menstruation and its management. The majority of girls felt a female teacher would be best at teaching topics on menstruation. While some of the girls suggested that this topic may be taught in sex segregated lessons, other students felt that it was important to teach the subject in regular class, as this would provide the boys in the class an ideal opportunity to learn about menstruation. Subjects under which the girls suggested menstruation education be taught included Home economics, basic science and guidance and counseling.

Menstrual Hygiene Materials

Types

Findings from interviews with menstruating girls and mothers revealed the range of material types popularly used by girls for menstrual hygiene management. These materials included pads, with most specifying the ALWAYS and LADYCARE brands, toilet paper, and pieces of cloth, usually old blouses or wrappers which are then torn or cut into small pieces of cloth. Other materials mentioned include use of ordinary paper in emergency situations, diapers or plain underpants or tights. The use of rags was also mentioned.

Girls' guardians generally provided menstrual materials; in some cases, emergency menstrual materials were provided by older females in whom the girls had confided or by the school authority, where they had available materials to give. Mothers of the in-school girls stated that they provided materials including tissue paper, cloth and pads (when they could afford it). Mothers and teachers supported the use of sanitary pads more than any other material, however, more often than not, girls had to use pieces of cloth and other substitutes as pads were not always affordable for them to use or accessible to them when needed urgently.

Mother 1: They use pad. Some use napkin [table napkin] also, then, they cut it, cut it up how it will be ok for them, then will be using it. They also use soap for washing it properly, and water and tight pant, those are the materials I know, that they are using during menstruation.

Mother 6: Nowadays, something produced by the Europeans called toilet roll is also used. Some girls also like toilet roll more due to its being lighter.

Moderator: Who provide sanitary materials for girls to use during menstruation?

Mother 9: It's us women that bring them and give to our daughters. Because when we understand that that is in her period, what is there is to get tissue for her, or pad. She will also ask her whether it is cloth that she prefers, because many use cloth. If this one is removed, another one will be inserted. They are also told what to do, that their pant should be neat, that the bucket they use in washing it should be neat.

FGD, Mothers of In School girls, Rural, Anambra

Sometimes in the absence of an older female from whom the girl could get hygiene materials, the girl tore old blouses and wrappers of her mother, if she were at home, or old pants and scarves to keep herself 'packed' till she arrived at a comfortable place to get fresh pads from her guardian.

In some cases, some mothers noted that they did not know what 'ALWAYS' was or how it was used, so their daughters were encouraged to use cloth. Teachers in some schools also noted that girls had

P3: She will use pad

P6: If pads are not available, she might use toilet tissue

P3: There are those that normally use clothes,

M: Cloths, what type of cloths?

P: Like wrapper they will tear it to pieces, so that it will be able for them to use

M: Okay do you, any, have any other opinion on the type of material the girl will use? Does she like these materials we have mentioned?

P5: Yes she does

M: Which one?

P5: Sanitary pad because she will not have any, idea of what to do again except using pad as the first time of her menstruation

FGD, In School girls, Urban, Anambra

to bring their own menstrual material from home, as there was no provision in the school to cater for them, even in cases of emergencies.

Availability and Affordability

Menstrual materials were not available for menstruating girls in schools. The girls stated that pads were not always available for their use as they were not sold by the local vendors in the schools and for emergency cases, had to take permission to leave the school premises to purchase sanitary pads.

In addition to this, sanitary pads were not always affordable for mothers and guardians of the girls to purchase on a monthly basis for their use as they were rather expensive. Some of the school heads stated that cloth pieces were what they provided to their students in the cases of emergency.

In cases where the girls used pieces of cloth, they sometimes expressed dissatisfaction with this and hoped to be able to use pads which they believed it will stay in place, it will last longer, and is more comfortable. It also prevents disease, according to these girls.

In contrast, some of the girls noted that sanitary pads were heavy and thus preferred tissues to pads

P6: She may not like sanitary pad because, sanitary pads, if you put it, it will be as it, as, as if it is heavy for her to use or wore, as in she use it and works, but she might also use toilet tissue for it to, for her, for it be easy for her to work

FGD, In School Girls, Urban, Anambra

Some of the mothers vehemently disagreed with this notion as they noted that tissue papers were unhygienic to use due to the odor it causes and the high likelihood that it could fall off and embarrass their daughters. They also noted that although there were a variety of sanitary materials in the market they had preferences for certain pads as it helped them stay 'dry' for longer periods of time.

Disposal and care of menstrual materials

Girls disposed of materials in different ways: flushing them down flush toilets; throwing in pit latrine; disposing in waste baskets; burning with kerosene and fire. Many of the girls stated that they did not dispose their used menstrual material in the school, rather they wrapped it and took it home to be disposed as common cultural beliefs proved that they could not afford to be careless with used menstrual materials.

P3: if it is a cloth, and they cannot afford to buy pad...if she tells her mother do not have money to buy pad for her, she can use cloth.

P3: if they can afford pad and if her mother cannot buy she can tell her father to buy for her.

P6: If her mother cannot afford to buy pad for her she can use clean cloth or her wrapper to use in order to avoid diseases from using unclean cloth."

FGD, In School Girls, Rural, Katsina

P2: Some materials like cloth pieces she might not like it but because, of, because she is too shy, she can't tell, she can't share with people about her present condition, so she might just keep it to herself, but within her, she know that that she did not like it

P2: She might not like it because at times it causes odor, it causes body odor

P8: She might not like the pieces because it doesn't make her feel comfortable,

P1: She might not like the toilet tissue because, the toilet tissue can wet easily"

FGD, In School Girls, Rural, Anambra

R: After the thing might have get soiled, they should wrap it maybe in newspaper.Wrap it very well then if they are using this pit toilet, drop it in the pit toilet or if they don't have pit toilets, they can dug a hole put it there then cover it' **IDI, In-School Girl Urban, Osun**



Pit for disposal



Pit toilet with toilet seat



Pour flush toilet

Okay when you now remove that your pad your used material, where do you dispose them?

R: I dispose them, I dispose them in, in ehh, ehh in the dustbin we have dustbin.

I: Then you said at times you use your cloth, how do you dispose your cloth?

R: My cloth, you know, I can't throw my cloth away, because if I throw them I won't have another to use again. So, if I bring out the cloth I will stain with blood and I will look for leather I will put it inside leather (polythene nylon) and carry it home, and take it home' **In-School Girl, Urban, Anambra**

Girls who used tissue paper as management material found it easiest to dispose of as they could easily put it in the toilet and then flush it. The girls who used clothes however were divided into two categories with respect to disposal; some said they discard after short periods of use but the majority of the girls rewashed and re-used such materials for extended periods of time. Such cloths were commonly dried indoors and not sun dried, due to popular belief systems about 'evil ritualists' as well as out of embarrassment as girls did not want anyone to find out they were menstruating. This was because of the shame attached to a girl menstruating and her association with the material.

"I: What then made you to be spreading it indoors...

R: You know, if I spread it there, if someone comes and sees the pieces, they will say that it seems I have started seeing it {menstruating}' **In School Girl, Rural, Osun**

Menstrual Hygiene Practices

Washing of the body frequencies varied from once a day to three times a day among menstruating in school and out of school girls. The majority of the girls said that they bathed three times a day. Changing of underwear and sanitary materials were usually closely associated with washing of the body, thus, girls changed their menstrual material and underwear as many times as they washed their

R: I use to take bath three times. I change pad when I'm going to school, I take bath when I come back. When I take my bath three times then I change pad each time I take bath.

In School Girl, Urban, Osun

I: Do you change pant also?

R: Yes

I: what of underwears?

R: I only change it when it gets stain. I don't change it except if it gets stains

In School Girl, Rural, Katsina

body. In contrast, some of the girls felt their underwear only needed to be changed when stained.

Many of the girls could not practice regular bathing while menstruating in school as the schools lacked bathing facilities and lacked of water. Most of the girls waited till they got home before they washed their underwear and bathed. Boarding schools with dormitory facilities had laundry and bathing rooms; however, the girls had to ask for permission from the school matron to access the dorms during school hours. Girls' hygiene practices related to the washing of materials differed. Some girls rinsed off their materials and then washed them when they get home, while some of the girls simply packed it up while in school and washed it at home. None of the girls who used clothes noted that the clothes were sun dried to avoid the clothes being seen by passers-by, rather they were usually dried on hangers or lines made inside their houses.

Voiced Impacts

Voiced impacts are the impacts that girls, mothers, teachers, administrators and boys discussed as adversely influencing girls' health, behavior and education while in school. Voiced impacts have been categorized below as educational, health and behavioral. Findings from the study showed that the impact of menstruation on the lives of girls, placed them at greater potential risks.

Poor concentration/Distracted

Girls reported that during their periods, they were barely able to concentrate in class due to abdominal cramps, other physical symptoms, and the anxiety that they might be stained. This caused distraction and reduced attention during class periods and the willingness of girls to participate in class activities. Most of the girls tended to become withdrawn, moody, and sometimes even slept during classes, due to the various physical symptoms. Teachers of the girls also reported having to insist that girls pay proper attention during class, or sending them to the clinic (where available) to get medicine to treat the pain. In some cases where there was no immediate first aid, the girls were sent home. Among girls who experienced their menarche while in school, apart from the impact of physical symptoms, the girls tend to be withdrawn, because they were shy and ashamed. In cases of unexpected menstruation, girls could hardly concentrate in class for fear of being stained.

When they are in school, when they are in menses they don't usually participate in most of the school program, that's way they do. They isolate themselves, they don't normally participate in sports. If they are doing manual work they don't come; if we are doing any program out even in the classroom they hardly pay attention to normal teaching. It has a psychological effect on the on the child

School head, Rural, Anambra

To combat this, girls usually refused to participate in class activities, stand up to answer questions while in class.

P3: It is because she will be feeling some pains, and she will be staying idle. She cannot go outside and play with her friends.

P6: She will not be comfortable even when the teacher is teaching or even when her mates will be discussing in class she will just be quiet, she will not be very comfortable

P7: She behave quietly, she behave quietly and will not even play with her friends

P2: She will be very dull, she won't be able to play or chat with her friends because she will going through several pain...

P3: If she feels a lot of pain she might go and take permission from her form mistress, maybe the form mistress may allow her to go home or rest in the clinic, in the school clinic... Maybe she will be sleeping, she will just be sleeping and if anyone asks her why is she sleeping in class she will tell person the person she is feeling some head ache or she has stomach pain.

FGD. In school girls, Rural, Anambra

Sometimes they might feel like they have a kind of sickness. They will not be able to answer questions, they will just be dull in the class and again when you ask the person what is happening to you, she will not tell you. She will just say that am not feeling fine. That will make me to understand that this person may be she is having menstrual period and it is disturbing her. So I will now leave her.

School Teacher Male, Urban, Anambra

Missing Classes/Absenteeism

Findings from this study revealed that menstruating girls sometimes missed or skipped classes due to the challenges they faced while menstruating in school. Girls missed classes when they were looking for a place outside of schools to change hygiene materials. Girls also missed classes due to pain, vomiting, headaches and high fever associated with menstruation. When girls experienced this, they were sent home or to the clinic by relevant authorities to seek treatment. Girls also avoided class due to odour and stains; when they experienced these they would find a private place on the school grounds to seclude themselves from their classmate.

When girls had to leave the class during lessons due to menstruation related issues; they sometimes did so without informing their teacher to avoid the embarrassment of having to explain why they were leaving the class, especially if the teacher was male. In most cases however, girls mostly took permission from the teacher to be away from the class during the lesson hours. The detrimental impact of this on girls' education was substantial as girls who had missed class were not able to learn what was taught anymore.

P4: If her house is not far, she can quickly go home to buy ALWAYS or pad

M: If GIRL's home is not far and she goes home, is it possible for her to come back to school?

P4: No, if there is no exam

M: If there is no exam, she would not come back again. What about if she has exam?

P6: If she takes excuse from the boss (Teacher), she may come back

M: But if she didn't take permission from the boss (Teacher)?

P5: She won't come back, P5. If the flow is much and she is soaked, she may not be able to wash it. If she gets home and she says she wants to come back to school, she may smell. But when she gets home, she will wash; she will take excuse that she will not come to school.

FGD, In-school girls, Urban, Osun

There are some who go home; there are also others that it causes stomach ache, the person will be complaining.

FGD, Mother of In school girls, Urban, Anambra

Teachers, mothers and the girls themselves noted that sometimes menstruating girls miss not just a few class periods, but the entire period of their menstruation or the days in which they experience severe menstrual pain. Some participants felt that girls seemed to prefer to stay at home while menstruating and resume to school when they were finished menstruating due to physical illness and shame. Some of the teachers also opined that the girls did not come to school as they could not afford good hygiene material which would keep them from getting stained and getting embarrassed.

R: She might be thinking that people will get to know that she is menstruating and she might be ashamed to come to school .she might want to change in school and she might not get a place that is conducive for her..."

School Teacher Male, Rural, Osun

I: So what are the reasons by which you think they can take, stay at home for more than a day or two days?

R: Hmmmm ,when they have no enough of money to take care of their self(purchase hygiene materials), so they usually sleeping at home

School Female Teacher, Rural, Osun

Some of the mothers of menstruating girls permitted their daughters to be absent from school if the abdominal cramps and other physical symptoms she went through during menstruation were severe or if the girl complained of weakness. Some teachers noted that though they did not feel happy that the girl had to miss classes, sometimes they felt it was better to let the girl stay home as she couldn't manage menstruation properly while in school.

Another thing I'm adding is that everyone's body is not the same. You know, for some people if it comes out[menstruation], it causes stomach ache for three days. For these three days, if she is a student, she will be unable to go to school... If her fellow students see her, they will say that it seems that she is killing a fowl. That was the reason why she missed school for three days" FGD, Mother of in- school girls

Anambra

She does not have the grace to come to the school well around that time because her body would be weak all the time, She does not attend school at that time

FGD, Mother of in school girls, Urban, Osun

Missed educational opportunities

The long term impact was that whatever a girl had lost in class, she could rarely catch up with afterward. This left evident gaps in information that the girl had about pertinent subjects including puberty and pubertal changes. When a girl is absent from school more often than not, she will need to worker harder to keep up with what was learnt while she was away from school.

"I think the challenges such girls will face is the situation where the girl skips lesson and what has been taught she will not know. If note has been copied she will not copy, and so later, she will now come to copy the note, and will now read harder to be able to meet up with what the teacher has taught as at that point in time."

School Teacher Male, Urban, Anambra

Sincerely, it, is not good because she missed some very important things in the school due to her absence, but there is no alternative because some of our student don't have even the awareness of how to maintain that problem (menstruation).

School Female Teacher, Urban, Katsina

Self-exclusion and Self-restriction from Opposite Sex

Girls excluded themselves from their peers partly due to the physical pain, such as the stomach aches and also due to various beliefs and cultural practices that place importance on keeping menstrual status a secret. The fear of giving off an offensive odour, getting stained, having sanitary material fall out of her pants (especially when she wasn't using a pad), and of both male and female friends discovering she was menstruating and teasing also kept girls from interacting with peers and taking part in activities in the class and on the playground. Girls especially excluded themselves from boys as many girls believed that they would get pregnant from male touch or sexual relations during their periods.

'Some of them, they isolate themselves whenever they are in that situation'

School Head, Rural, Anambra

"P4: She will be quiet; she won't like to go with her friends again. Like if they are going somewhere, she won't like to join. She will keep to herself. She will keep to herself, until she finishes her menses"

P6: She feels, she will feel... she will feel, somehow embarrassed,

P7: She will feel afraid

P1: She will feel shy to associate with her colleagues,"

FGD, In school girls, Urban, Katsina

P8: She will be shy because the menstruation has come, she won't play with anybody, she won't move around with anybody, she will just stay in one place."

FGD, In school girls, Urban, Osun

Discomfort

Many girls experienced discomfort during menstruation while in school; physical discomfort related to menstrual pain and emotional discomfort related to stress and embarrassment. These different kinds of discomfort affected girls' concentration and learning in class. This was common among the girls who just started menstruating and their body has not gotten used to it. It distracts and also reduces class participation as most of them become inactive during menstruation in class.

P2: when she notices it, her heart will beat, she will get scared but if her mother sees it she can send somebody to buy pad for her.

P5: when she is menstruating she cannot feel comfortable, she will feel as if she is the only one doing it. She will be feeling shy among her friends.

FGD, In school girls, Urban, Katsina

Potential Risks to Health and Education of In-School Menstruating Girls

Potential risks are issues that may arise in the long term as a result of challenges or negative practices related to menstrual hygiene management. Potential risks were identified through the analysis of experiences shared and practices discussed by participants.

Early or Child Marriage

Data from the study revealed that early marriage resulting from the commencement of menstruation was a common practice in the northern part of Nigeria as girls who have attained menarche are considered matured and of marriageable age. It is a common societal belief in northern Nigeria that girls should not remain in their parents' houses after their third menstruation. Societal beliefs are greatly influenced by religion; the majority of Northern Nigeria practices Islam. Early marriage was not a common practice in the South eastern and western parts of Nigeria.

Early Sexual debut and Teenage Pregnancy

Respondents identified early sexual debut and teenage pregnancy as potential risks for menstruating girls across the different study zones. Although cultural beliefs supported the idea that the onset of menstruation marked sexual maturity for females, it however did not support pre-marital sexual activity. Teachers and mothers interviewed had a poor knowledge of the relationship between fertility and the menstrual cycle. Several girls reported they were told not to go near boys during their menstrual period because they might get pregnant. Young girls who engaged in sexual activity were thus likely to be uninformed about contraceptive use which often resulted in unplanned pregnancies and sexually transmitted infections. It was also suggested that sometimes when menstruating females were sexually exploited without consent by boys and men. This predisposed girls and boys alike to make misinformed decisions about sex and puts them at risk of unplanned pregnancy.

"So you see them engaging in premature sexual intercourse and if pregnancy does not result and even when it results you see...KII, ZDE, Anambra

"The society believe that whenever a girl starts menstruating, the next thing...she will become pregnant, bringing pre-marital pregnancy to her home."
FGD, Mothers of In-school Girls, Urban, Anambra

Rape or Sexual Harassment

Rape or sexual harassment was an identified potential risk for menstruating girls. Once a girl started menstruating, they were sometimes treated as an object of sexual abuse by men. Again, participants attributed this to the cultural acceptance that menstruating girls were seen as adults, having developed secondary sexual characteristics.

"If a parent sends a female child an errand, they can meet the hooligan boys outside, maybe we send the lady to sell something, so they can call the lady and do many things that is not good about that time."
School Teacher Female, Urban, Osun

School dropout

In the study location in North west (Katsina state), stopping of girl's formal education was found to be related to menstruation. Menstruation signified maturity of girls and ability to marry thereby leading girls to stop attending school to get married. This often led to the girls being withdrawn by parents to get married. This was not common in the South east (Anambra state) and Southwest (Osun state) zones of the study areas.

"Honestly it plays a very vital role because it is the menstruation that makes them to even think of marrying me out. Even when I started this menstruation I did not talk about marriage but my parents decided to stop me from going to school simply because they discovered that I'm growing up. They also said that even if I finish school I cannot get work, unless I have somebody."

IDI, Girls-out-of-School, Katsina

Also, some girls may be unable to cope with the embarrassment from people's reactions to them while menstruating. This leads them to miss classes and protracted absenteeism due to leaks, stains and people's negative reactions towards them leads them to drop out of school.

"We know what boys normally do as students, we make jest of them, and personalities are different. A lady may not be able to bear that kind of embarrassment; that can drive her away from the school."

School Head, Urban, Osun

P6: When she is in class or the lesson is taking place she cannot feel comfortable and when her friends come out for break she does not go out, she will isolate herself alone because there is no pad and water to give to her. That is why if some girls start menstruating they stop coming to school".

FGD, in school girls, Urban, Katsina

SUMMARY OF KEY FINDINGS

Finding from this study showed that menstruating school girls in the study locations faced many challenges which affect their ability to manage their menstruation in a dignified way while in school. The summary of the findings are grouped into: determinants, voiced impacts and potential risks. (See Fig4)

Challenges

Challenges were identified in this study as the various factors which made attending school during menstruation more difficult than attending school on other days. Challenges were generally classified into psychosocial and physical. Identified psychosocial challenges include fear, shame and embarrassment of unexpected menstruation, stains and leaks, teasing by boys, isolation by family and friends, restrictions to participate in physical activities and lack of preparedness for periods.

Physical challenges were noted to be abdominal cramps, nausea, dizziness, mood swings, headaches, vomiting, loss of appetite and in some cases, increase in body temperature. These were noted to be so serious with girls that the attention of medical health workers were sought or the girls were asked to go home.

Determinants

These are the factors contributing to girls' challenges at schools during menstruation and identified through conversations with study participants. These included beliefs, taboos and culture; water, sanitation and hygiene facilities in schools; menstruation education and menstrual hygiene management practices.

Beliefs and Culture

Beliefs surrounding menstruating girls cut across culture religion and ethnicity. The secrecy attached to menstruation is due to its beliefs of being unclean and unfit. The fear of disposal of sanitary materials in public waste bins and dump sites was linked to direct instruction from mothers, and older female siblings to avoid the risk of the used material being taken and used by ritualists that could cause harm to the menstruating girls. Some of these beliefs were influenced by cultural requirements to keep menstruation and menstrual hygiene materials extremely private. There is also the belief that menstruating girls and women should not cook for traditional title holders, not go near certain shrines or the efficacy of the deity would be reduced. Furthermore, there are beliefs that restrict the menstruating girl to certain areas of worship and handling of materials. Another belief that menstruation and virginity was linked to early sexual debut and the giving birth to albino baby. All these beliefs and taboos together with inadequate school WASH facilities have enhanced the challenges facing the menstruating school girls.

SchoolWASH Facilities

This is one of the major challenges facing menstruating girls in school. Only seven of the 12 schools studied had girls' specific latrines and of these while only four of 12 schools had girls' specific, functional and clean toilets combined. Six of 12 schools had functional water points representing 50% of the schools studied. Only one of 12 schools had facilities for burning used menstrual material and 3 of 12 schools had hand washing basins, water and soap combined. The above data confirmed the responses of inadequate access to water, sanitation and hygiene facilities by the study group, especially the girls. All these contribute to menstruating girls' reduction in participation in school activities; abstaining from school, going home to change and in some cases going to the bush to change and exposing themselves to snake bite and kidnapping. In addition, the leaks and stains in clothes of menstruating girls in schools are as a results these inadequacy of WASH facilities especially water and secured privacy.



Dilapidated block of toilets



Dirty Toilet in urban school

Menstruation Education

Most of the girls stated that they experienced menarche around age twelve without any prior knowledge of menstruation. They said menarche was a distressing experience, as the girls did not understand what was going on in their bodies. The girls that had some knowledge of menstruation before menarche had easier experiences understanding what was going on in them, and thus it was less distressing emotionally. Teachers' comfort in teaching menstruation varied. Some male and female teachers expressed discomfort: males because they had not experienced menstruation; females because they felt uncomfortable discussing menstruation in front of male students.

Menstrual Hygiene Management

The girls said they used materials including pads, with many specifying the ALWAYS and LADYCARE brands. Some said they used toilet paper and pieces of cloth, usually old blouses or wrappers which

are then torn or cut into small pieces of cloth. Other materials mentioned include ordinary paper in emergency situations, diapers or just plain under pants or tights. The use of rags was also mentioned. Among the various materials the girls reported they used, mothers and teachers seemed to support the use of sanitary pads more than any other material. However, more often than not, girls had to use pieces of cloth and other substitutes as pads were not always affordable for them to use or accessible to them when needed urgently. Disposal of used menstrual material was found to be mostly by burning and throwing into latrines. Indiscriminate littering was observed in some schools, especially in Anambra. Personal cleanliness varied from having a bath 3 times a day and changing the menstrual material to once a day. The availability of water and privacy was a strong influence on the number of times the girls washed their bodies and menstrual materials for those using re-usable materials.

Voiced Impacts

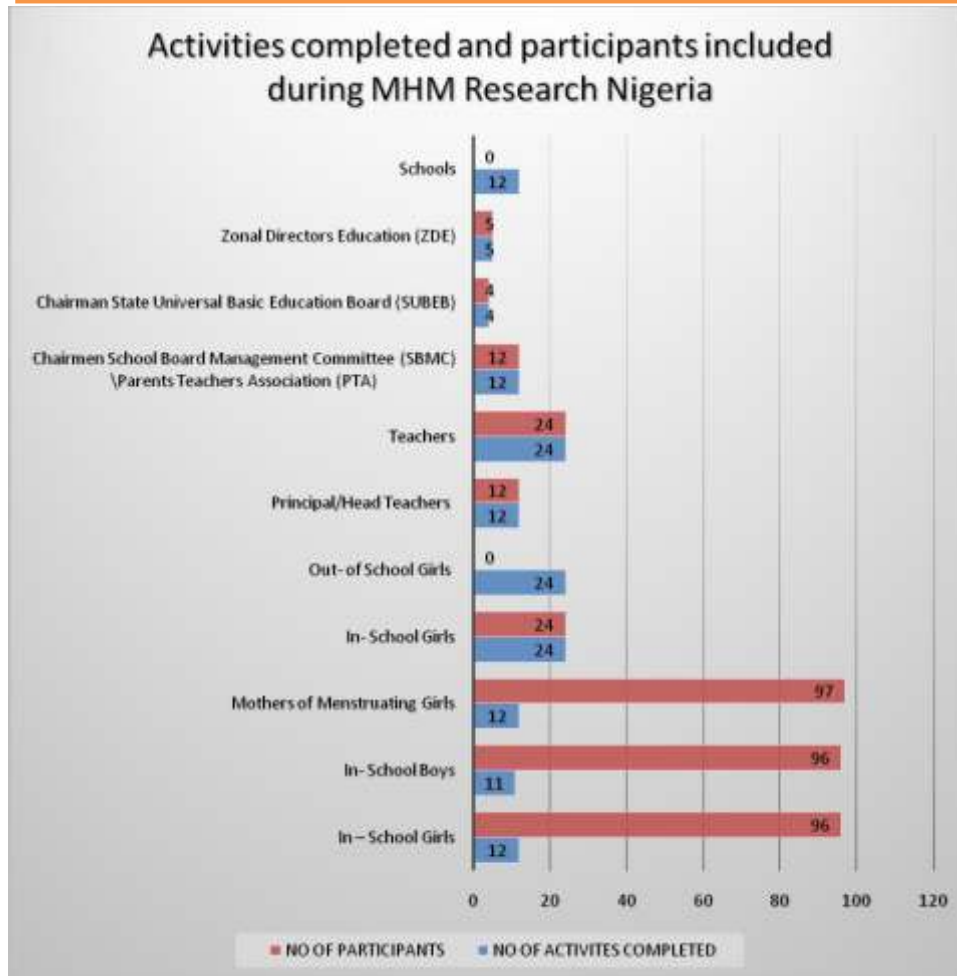
Voiced impacts are the impacts that participants discussed as adversely influencing girls health, behavior and education while in school. The key impacts on girls identified from the conversation with girls and teachers included poor concentration in class learning activity; missing classes, absenteeism or outright drop-out from school. Some people missed their educational opportunities and some were educationally disadvantaged compared with the boys.

Girls reported that during their menstruation, they were not able to concentrate fully in class due to abdominal cramps, other physical symptoms, and the anxiety that they might be stained. This was reported by teachers as it reduced the girls' attention to learning and their willingness to participate in class activities. Most of the girls were withdrawn, moody, and some sometimes slept during classes due to the various physical symptoms they experienced at the time.

The accumulation of these impacts could lead to general poor performance in academic work by affected girls and, therefore, put them on a disadvantage when compared with the boys.

Overall, the Nigerian study on MHM showed that despite the diversity in ethnic groups across the country, beliefs and cultural practices surrounding menstruating school girls differed. These beliefs and cultural practices shaped and influenced all things explored including the challenges, determinants, voiced impacts and potential risks of this study. The secrecy attached to menstruation is due to the belief that it is unclean and shameful and this influenced the girls to miss and skip classes. This also influenced their management strategies on handling menstruation while in school. This caused stains, leaks and embarrassment which again led to self- isolation. These specifics are important and have many implications for the program and policy strategies for improving the challenges menstruating girls experience while in school.

Table 6 Percentage of Participants Included During MHM research Nigeria



POTENTIAL RISKS

Potential risks are the issues that may arise in the long term as a result of the challenges or negative practices relating to menstrual hygiene management. Potential risks identified through the analysis of experiences shared by respondents included early child marriage, early sexual debut, teenage pregnancy, rape or sexual harassment and drop out from school.

Data from the study revealed that early marriage resulting from the commencement of menstruation was a common practice in the northern part of Nigeria as girls who had attained menarche were considered mature and of marriageable age. It is a common societal belief in northern Nigeria that girls should not remain in their parents' houses after their third menstruation. Societal beliefs are greatly influenced by religion; the majority of Northern Nigeria practices Islam. Early marriage was not a common practice in the South eastern and western parts of Nigeria.

Respondents identified early sexual debut and teenage pregnancy as major potential risks for menstruating girls across the different study sites. Although cultural beliefs supported the idea that

the onset of menstruation marks sexual maturity for females, it however did not support pre-marital sexual activity. Teachers and mothers interviewed had a poor knowledge of the relationship between fertility and the menstrual cycle. Several girls reported they were told not to go near the boys during their menstrual period because they might get pregnant. Young girls who engaged in sexual activity were thus likely to be uninformed about contraceptive use and the lack of information often resulted in unplanned pregnancies and sexually transmitted infections. This predisposed the girls and boys alike to misinformed decisions about sex and puts them at risk of unplanned pregnancy.

Rape or sexual harassment was an identified potential risk for menstruating girls. Once a girl started menstruating, she was sometimes treated as an object of sexual abuse by men. Again, participants attributed this to the cultural acceptance that menstruating girls were seen as adults, having developed secondary sexual characteristics.

In Katsina, stoppage of formal education was related to menstruation since menstruation signified the maturity of girls and readiness to marry. This often led to the withdrawal of the girls for marriage however, school dropout due to early marriage did not reflect in the other study locations.

RECOMMENDATIONS

A two-day meeting in Abuja was conducted by the UNICEF WASH Office in charge of the Nigeria MHM research project with the National Coordinator, four MHM states coordinators and the two analysts. The major aim of the meeting was to come up, based on the evidence (findings) of the study with a comprehensive recommendation that would translate evidence to practice. A process was developed with a template stating the followings: its Vision for Change as the potential outcome from the evidence; the Potential Activities which are the range of activities that will alter the findings into a positive vision for change, the Flexibilities of these activities on long or short term; the Potential Change on what kind of impact the intervention/activities would have and the Who will be responsible for taking up this change. All these key findings were deliberated on and activities created were tasks created. The objectives/purposes, the how/methodology, who/to undertake and target audience, where to carry out the activity and the estimated costs were allocated to each activity. All these were scrutinized and finalized by Emory University staff, Anna Ellis who developed the template. (See Details of Template in Annex 9)



Menstrual Hygiene Management (MHM) is complex and needs to be addressed holistically and in context as a package of services that includes voice and space to talk about the issue to increase awareness amongst men, women, boys and girls and to provide adequate water, privacy and facilities for washing and disposal. The basic package must fundamentally address the challenge of inadequate access of women and girls to materials needed for hygienic collection of the flow of blood to eliminate stains and odor. The picture above is a statement of justification and commitment by UNICEF Nigeria to support the Government to achieve the right to basic education and equitable learning outcomes for girls.

Given the above conviction and the relevance of the research findings to the statement, the following recommendations are made to improve menstrual hygiene management.

Voice and Space to Raise Awareness: this will break the silence through policy and creation of network of practitioners and target groups to function as advocacy and support groups.

It is necessary to create the enabling environment for the issue of menstrual hygiene management to be discussed as any other social and health issue. Young girls that are deprived of equal opportunity to education today end up to become deprived women economically and in self-esteem later in life. Their children also suffer inequality in access to quality education compared to children of well-educated counterparts due to very limited economic power, knowledge and skills to make the right decisions and implement them. The non-recognition of government policy and decision makers that menstrual hygiene management is a public issue of importance is erroneous and has contributed to avoidable loss of human capital, especially of the female folk. The embarrassment and physical suffering endured by women and especially young girls and the potential consequences can be minimized if not completely eliminated with adequate flow of correct information about menstrual hygiene management. Specific recommended actions include:

- Organizing a meeting of all education managers, (FMoE, some SUBEB) for the dissemination of research findings. This can be conducted at the national, zonal and state levels. The purpose of this is to highlight the key findings in relation to the knowledge, practices, attitudes and scope of the water sanitation hygiene challenges faced by school girls during menstruation. Furthermore, to engage in dialogue on how they should fully be involved in improving these challenges. To achieve this, national MHM research team should undertake this task.
- Orientation programs in schools can be carried out during morning assembly or during special events organized as part of extracurricular activities. This can be carried out by specialists on reproductive health issues to deliver talks to students and all school staff on puberty, what signs to look out for in case of menarche, how to use and dispose the menstrual hygiene materials and general cleanliness of the body to maintain self-confidence and self-esteem. Such talks should also include proper operation and maintenance of WASH facilities in schools. This can be organized by NGOs with reproductive health issues as the major focus in their mission.

- Target groups such as girls in schools, women organizations both at secular and faith based contexts should also be mobilized and educated on the basics of puberty and menstrual hygiene management. These groups should be developed into a critical mass of concerned and educated females that can spread the basic knowledge of MHM to both young and old women in schools and communities, thereby functioning as support groups for erasing doubts and gradually eliminating the misinformation and myths that have kept agile girls and women captive for an average of 5 days every month. The Nigerian Medical Women Association could be approached to develop a special program to implement this recommendation.
- Advocacy visits and sensitization at the community levels. This will be targeted at community/traditional leaders, community gate keepers, mothers, fathers, youth leaders to dialogue on the beliefs, perceptions, myths and taboos associated with menstruation and its management in the community. This will go a long way towards the dissemination of correct information on MHM and debunking some negative attitudes. This can be achieved by the involvement of NGOs, trained school Head Teachers and teachers in that community.
- Advocating to Government to recognize and include menstrual hygiene in the national sanitation policy and action plan to beam the limelight on the issue and create the opportunity for a national conversation and corrective action on the issue. The National Policy on Education should also be reviewed to specify the inclusion of PUBERTY EDUCATION as part of life skills learning and there should be necessary water, sanitation and hygiene (WASH) facilities that have to be in place for a school to be approved to operate.
- Civil Society Organizations involved in social development interventions in the field of health, education, water, sanitation and hygiene, child protection, communication for development and the media should also be mobilized to form a network that can put the issue of MHM on the front burner of social discourse. This group could also form the pressure group to advocate for the enactment of the relevant policies.

Provision of Adequate and Appropriate WASH Facilities in Schools

The findings on the conditions of WASH facilities in all the schools visited indicate that there is urgent need for the following actions:

Government and other school owners should provide adequate and appropriate gender segregated WASH facilities suitable for effective MHM by both pupils and teachers. In addition to adequate water supply, toilets, hand washing and waste disposal facilities and a full length mirror needs to be placed in a cubicle for changing and checking to eliminate stains. Specifically, the following need to be done.

Provision of Basic WASH Facilities in Schools

- SUBEB, MoE and other education stakeholders should set policies and guidelines for supervision and monitoring of schools to ensure their child friendliness.
- Sick bays in the school should be supported with free sanitary pads for emergency cases from

SBMC/PTA and donations from sanitary pad manufactures e.g. "Always"

- Principals and teachers should ensure that basic WASH materials such as soap, tissue papers, disinfectants, sanitary pads, waste bins with covers are placed at appropriate positions with instructions of dos and don'ts at entrance doors.
- Provision of more segregated toilets with adequate ventilation and good floor should be encouraged through combination of funds from Universal Basic Education Commission (UBEC), State Basic Education Board (SUBEB), MoE, SBMC, PTA, school alumni and external development support agencies.

Standardize WASH Facilities Designs

This requires strong coordination between Federal Ministry of Education (FMOE), State Ministry of Education (SMoE), Universal Basic Education Commission (UBEC), State Universal Basic Education Boards (SUBEB), States Rural Water Supply and Sanitation Agencies (RUWASSAs) as well as other collaborating water, sanitation and hygiene service providing agencies to institute, implement and ensure that schools have standard/adequate WASH facilities that will meet all the needs of menstruating girls. To achieve this, the following must be considered:

Toilets

- Build gender segregated toilets (complete urinals, latrine and hand washing facility) of ratio of 1 latrine compartment to 40 for girls and 1:60 for boys.
- Toilets must have safe locks from the inside to ensure privacy
- Toilets should not be too far from classrooms to ensure safety and accessibility.
- Working with head teacher, teachers and school health clubs, establish a system for hygienic operation and maintenance of the toilets to ensure consistent cleanliness of the toilets.
- Working with parent teachers' association (PTA), School Based Management Committee (SBMC), head teacher and teachers; equipping toilets with basic items such as soap, tissue papers, sanitary pads, disinfectant and cleaning materials for the toilets.

Water Source in the School

There should be adequate and constant supply of water in the school to facilitate the practice of menstrual and other personal hygiene practice.

Waste Disposals

- Waste bins with covers should be provided in each of the girls' toilet compartments.
- A system for scheduled emptying and cleaning of the waste bins should be established. This could be having a roster of girls that do the emptying and cleaning in turns. The female health prefect should supervise and ensure that those on the roster do their duties.
- Introduction of competitions and awards to school with best WASH facilities and hygiene environmental sanitation practices is a way that could keep the schools on their toes to keep clean.

Mainstream MHM Education into Family Life HIV/AIDs (FLHE) School Curriculum

Integrating Puberty education into the Family Life HIV/AIDs (FLHE) curriculum for primary school pupils would help to build up early, the knowledge of MHM and prepare them for menarche. This can be achieved through involvement of the Federal Ministry of Education and the Nigeria Educational Research Development Center (NERDC).

Including MHM education into Workshop Training for Head Teachers/Principals and Teachers. This will go a long way in addressing the knowledge gap on MHM found among Head Teachers and teachers during the research. It can also remove the feeling of unease in both male and female teachers to treat the subject in class with students of both sexes. It will also increase their knowledge in MHM and the importance of supporting girls in managing their menstruation in school. Both Federal and States Ministry of Education and some related NGOs can undertake the task of achieving this.

Training of selected Teachers to Organize Sessions with Pupils during and after School. This will be to increase the knowledge of MHM among girls and teachers in schools. This can be achieved by selecting already existing FLHE teachers in schools. This can be further reinforced by the inclusion of Zonal Supervisor of schools who would help monitor teaching session.

Provision of IEC material: this is designed to educate students on WASH facilities and challenges facing menstruating school girls on menstrual hygiene management. The IEC materials should be colorful flyers and sketches of students in the front cover. Inside the flyers will be what is puberty, menstruations, menarche, and menstrual cycle. Stickers as IEC materials can be used to reinforce MHM messages to be pasted at strategic positions in the school premises.

Promotion of Hygiene Education in School Programs for both Girls and Boys. This can be achieved through integrating menstruation education topics into Puberty education through the FLHE school curriculum. This can be enhanced through MoE, SUBEB, and MoH with the school curriculum. Knowledge gained by the students will impact families and communities and the MoE can play a significant role in this process

Inauguration of Health/MHM Clubs in schools can ensure campaigns on the importance of MHM and WASH facilities in schools. This can be carried out by the School Head, students, teachers, other related clubs, education managers in the state [SUBEB, MoE]. The MHM club should be well organized in not only providing pupils/students with correct information on MHM, but also students being practically involved to become MHM messengers to other students in the school by promoting clean healthy school environment. Members of the MHM club can organize students and map out work plans of cleaning WASH facilities in the school.

Facilitate Access to Menstrual Hygiene Management Materials

One of the major challenges expressed by respondent girls both for in-school and out of school girls was the difficulty of accessing menstrual hygiene management materials, especially the sanitary pad. It is therefore necessary to facilitate availability of the materials to the girls such that is affordable and dependable to ensure effective menstrual hygiene. Some of the possible actions to address this challenge include:

Facilitating the production of re-usable sanitary pads

Non-governmental organizations could be supported to collaborate with the SBMC/PTA and the schools to identify female tailors in schools catchment communities to be trained in the production of re-usable sanitary pads. The widespread use of re-usable sanitary pads has the ability to eliminate the challenge of waste disposal. While the re-usable sanitary pad may be more expensive in the beginning, it has the capacity to drastically reduce the cost of menstrual hygiene management by up to seventy five percent compared with the use of disposable pads that one has to buy monthly.

Part of the training for production of re-usable sanitary pads is on its maintenance. The use and maintenance instructions could be printed, highlighted with graphics and included as part of the pack being sold to girls and women.

Partnering with the private sector to supply disposable sanitary pads to girls in school

There are a number of private companies in the country that can be approached to consider providing menstrual hygiene management materials as their social corporate responsibility. Such a request could be channeled through the Federal Ministry of Education. To further encourage the private companies, they could consider declaring their expenses in providing the goods and services for tax rebate.

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ANNEX 1

TABLE 1: NOMENCLATURE FOR MENSTRUATION IN COMMUNITIES AND THE MEANINGS.								
State	Ethnic Group	Traditional Name for Menstruation	Meaning in English Language	Explanation/Remark	Participants			
Anambra	Igbo	<i>Nso nwanyi, ino na nso</i>	a woman's taboo		Mothers of In-School girls			
		<i>Aru nwanyi</i>	A woman's body					
		<i>Ikpa oke nwanyi.</i>	A woman's restriction					
		<i>Nwanyi, ifu nso ya.</i>	A woman seeing her taboo					
		<i>Nwanyi ifu onweya</i>	A woman seeing herself					
		-	a woman staying in the compound					
		-	standing on the rock, red blood cell; touch not	Commonly used by women to describe themselves so that men do not understand what is being referred to				
		-	going into the compound					
		-	a woman that is forbidden outside (forbidden from going outside)					
		<i>nwa yori yori</i>	A young girl who can now start dating					
		-	A girl who is staging a masquerade/masquerading	This is explained as the way the girl prepared for menstruation, and this was compared to masquerading which also requires a considerable amount of preparation.				
		<i>apugo n'ama/ ipu n'ama</i>	A woman has gone public (A woman that ran out/went outside)					
		<i>Egbu okuku</i>	She has killed a fowl (Chicken)	They explained that this was due to the blood which came out of a chicken when it was slaughtered and this was compared to menstrual blood				
		Katsina	Hausa/Fulani	<i>Nso</i>		Sacred		Girls in School
				<i>nwanyi no na nso</i>		A woman to be avoided		School Teacher Male
-	Menses/Period time				Girls out of school			
-	Girls seeing their period				Boys in school			
-	Maturity							
<i>Jinin hailsa/ Hailsa</i>	Flow				Mothers of In-school girls			
<i>Wanki</i>	Wash/Bathe			Frequently used by the older generation				
<i>Gada ta balle</i>	A bridge that has collapsed							
<i>Al'ada</i>	Menstruation							
<i>Tana saida manja</i>	She sells palm oil			This is due to the colour of blood which is compared to the red colour of palm oil				
<i>Hutun sallah</i>	Relief/holiday from prayers			This is due to the religious restrictions which excludes menstruating women from praying/entering the mosque				
<i>Yarinya ta gan hannunta</i>	The girl has seen her hand			A girl is menstruating				
-	A visitor			Women explained that this is one of the most common names menstruation was referred to as				
-	Period/Time							
Osun	Yoruba			<i>Jinin Al'ada</i>	Menses		Boys in school	
		<i>Alaadah</i>	Menstruation blood		Mothers of In-School girls			
		-	Menstruation	Menstruation is referred to as this among muslim women				
		-	We are celebrating					
		<i>Alejo</i>	Visitor/Monthly guest	Menstruation is commonly referred to as a visitor among the Yoruba people, due to its regular yet transient nature.				
		-	Period/Time					
		-	Menstrual period	It was noted that this term was used among the learned majority				
		<i>O n se epo pupa</i>	The person is producing palm oil	This is due to the colour of blood which is compared to the red colour of palm oil				
		<i>O n pon moinmoin</i>	The person is wrapping moin moin (a local bean pudding dish)	Using of menstrual material to prevent spillage and staining is compared to the preparation for the dish which requires it be wrapped in plantain leaves/in nylon bags in order to prevent spillage				
		-	Menstruation					
		<i>Asiko/period</i>	Time					
		<i>Nkan Osu</i>	Monthly thing					
		<i>Eela</i>	Clear goddess					

ANNEX 2

Table 2 below shows menstruation related beliefs and restrictions as itemized by study participants.

State	Religious Belief	Religious Sect/group	Quotation
Katsina and Osun	1. Girls are not allowed to pray during menstruation as their prayers will be unacceptable	Islam	<p>The taboo at the mosque is that while menstruating, they must not pray; if the thing meets them at the mosque, they must abandon the prayer, go home and she cannot pray for all the days she is menstruating if not her prayer cannot be accepted – Boys in school, Urban, Osun State</p> <p>Muslim use to perform five daily prayers, by the time the menstruation is coming out, there should not be any kind of "surat". It used to be an embarrassment for the girls times, because they didn't want anybody to know that they are doing something, but the times she's affected and that thing is coming out, she was unable to pray, she was unable to hold a Koran,.. so they use to feel ashamed and that shame is part of what can affect the menstruating girl – PTA chairman, Urban, Osun State</p> <p>one must not go to mosque when menstruating; she is not qualify (fit) to observe prayers – Out of School girl, Urban, Osun State</p>
	2. Girls do not have sex during menstrual period	Islam	<p>you know religiously it is forbidden we have say let me quote an (aya tin aka ce la takkarabul zina kamma ku kusantaku kusanta kamma kusanta)(a verse from Holy Quran "You shouldn't come close to fornication so that you will not even do it" and we use to tell them the implication of these – KII, Urban Male School Teacher, Katsina</p> <p>A verse was revealed from God in chapter 4, it is forbidden for a man to sleep with his wife ... for him to sleep with his wife who is on menstruation period. This is because, it can cause numerous illness that have no cure - Mothers of Menstruating in-school girl, Urban, Katsina</p>
	3. Girls cannot observe fasts or hold religious objects during menstruation		<p>You do not hold the Qur'an, and any forms of recitations are forbidden. Also you do not perform prayers or observe fasting – IDI, Out of School Girl, Rural, Katsina</p> <p>She must not touch or come near all things that are used in the mosque e.g. kettle of water that would be used for ablution – Out of school girl, Urban, Osun</p>
	4. Menstruation is a time when a girl is 'unclean' and as such cannot worship her creator		<p>Menstruation is a blood that is generally being considered as free from cleanness whereby if a girl is menstruating she cannot worship her creator. Boys in School, Rural, Katsina</p>
Katsina, Osun, Anambra	5. Girls cannot enter religious places of worship during menstruation, nor can they wear religious garments.	Islam, Christian faction (White garment churches), Traditionalism	<p>They are not allowed to go to the mosque, at the time that they are menstruating. – Boys in School, Urban, Katsina</p> <p>When a person is menstruating, she cannot go to mosque. - IDI, School Girl, Rural, Katsina</p> <p>....As for the uniformed worship centres they must not go to church during menstruation; church like the celestial, cherubim and seraphim (K & S) their women must not enter the church while menstruating. They would have their worship outside the Sanctuary.... she has no right to enter, she has to stay behind the walls, if she wants to partake of the programme that is going on, and she is seen as being unclean as at that time.–Mother of Menstruating in-school girl, Rural, Osun</p> <p>She cannot also go close to ka'aba (secret house in Saudi Arabia) when she is performing pilgrimage. Mother of Menstruating in-school girl, Rural, Katsina</p> <p>Those who are Christians, that go to church, not all menstruating women are permitted to enter church, in some denominations the menstruating women will worship outside - Mother of Menstruating in-school girl, Urban, Anambra</p> <p>In that case, if she's a Christian, when she's menstruating she must not wear white cloth and she must not enter the church. And the same thing is applicable to the Muslims.</p> <p>I: What kind of white cloth? R: Garment I: Ok, those attending white garment churches. What about the Muslims, she must not wear... R: She must not wear white garment too. Mother of Menstruating in-school girl, Rural, Osun</p> <p>, Among we people, some people are easily irritated, and dislike menstruating women, because if they are with charm, it (menstruation) destroys the potency of charm, thus some people once they know that a woman is in her period, they will not move close to that woman, - Mother of Menstruating in-school girl, Urban, Osun</p> <p>With regards to the traditional religionist; they don't want a menstruating woman to enter into the room where they keep their powers, (power room). They believe that if such a woman does, all the power and juju have been destroyed, rendered null and void, even if the woman is his wife - Mother of Menstruating in-school girl, Urban, Osun</p> <p>P6: What menstruating girls are not allowed to do in our community are that there are places she is not allowed to go. For instance, if her father is a traditional worshipper, maybe he will ask her not to go there. Because of his idols, maybe, he may keep away from her. -Mother of Menstruating in-school girl, Urban, Anambra</p>

ANNEX 3

Table 3.0 A comparison of cultural beliefs about Menstruation among the various ethnic groups

State	Cultural Belief	Quotation
Igbos – Anambra	Menstruating girls must not sit on a mortar used for pounding yams, enter a yam barn or go to certain streams	<p><i>R: Ok, there are, there are things they are asked not to do, like they can't sit on something like mortar that, that thing that is used in preparing food, while they, while they are seeing that thing, but she can pound food with it..... she shouldn't enter a barn, that place that yams are staked, that she shouldn't enter there, that the barn has taboos....Menstruating women... there is a stream, stream called ogene that they don't go to.</i></p> <p>Girl in school, Urban, Anambra State</p> <p><i>There is a stream in our place, when a woman is menstruating, she can't go to that stream; you can't go there to fetch water, you can't go there to bathe. Unless, you stand at the bank and give someone your water container to fetch water for you, that is our taboo.</i></p> <p>Mother of in school girl, Rural, Anambra State</p>
	Menstruation provides freedom from ulcers and cancers	<p><i>Some women believe that if a woman starts menstruating, that she will be free from having ulcer, be free from cancer. Some believe, that is why if your mates start seeing their menses, but you have not seen yours, the person will start going round and inquiring from hospitals, to know if all is well</i></p> <p>Mother of in school girl, Rural, Anambra State</p>
	Women who do not start their menstruation in time would not begin menopause on time and this can cause ailments	<p><i>My mother told me when we were growing up, that a woman who doesn't see her menses in time, that when it is time for her menopause, that it won't as well start in time. That some of the blood that ough to flow out, will go and form or turn to something else, and cause another thing like stomach ailment, so it is important that a woman should start menstruating alongside her mates. That is what she explained to me.</i></p> <p>Mother of in school girl, Rural, Anambra State</p>
	Menstruating women cannot present kolanut to traditional titled men in certain communities	<p><i>Like from what I understand about nze n'ozo, traditional titled men in our community, if they gather for a meeting, kolanut is normally presented before them. I don't think a menstruating woman, they don't allow a menstruating woman to present that kola before them. That menstruating woman already knows that she is menstruating. She may send another woman or boy. That menstruating girl already knows she is menstruating.</i></p> <p>Mother of in school girl, Urban, Anambra State</p>
	Menstruating girls cannot sleep on the same bed with their brothers and cannot go to a relative's house on their own to sleep	<p><i>It happens to girls; they don't, they are not supposed to be sleeping on the same bed with boys from their kindred. But a girl on her own, she goes to her relative's house to sleep, it is a taboo.</i></p> <p>Mother of in school girl, Urban, Anambra State</p>
	Women should be careful about what they eat during menstruation	<p><i>You shouldn't take malt (malted soft drinks) you don't need to take them...there are other things they say you should not take during that time or that it will not be easy. Even to go...to come closer to where there is oil ...that red oil that you shouldn't go closer to it. So that's what they use to say.- Out of school girl, Rural, Anambra State</i></p>
	Menstruating girls should not play a lot to avoid infection	<p><i>The menstruating girls will be prevented from playing a lot, this will help her to avoid germ and various diseases –</i></p> <p>Boys in School, Rural, Anambra State</p>
	Buckets used by menstruating girls in bathing and washing of their underwear should be separated	<p><i>... The bucket she uses in doing that thing, she should have a bucket for washing off the pant.</i></p> <p>Mother of in school girl, Urban, Anambra State</p>
	Menstruating females cannot cook for shamans or titled men	<p><i>Another thing I will add to it is that this menstruation, that it is done like that because it is a <u>powerful thing</u>, it destroys a lot of things. Like regarding those titles or traditions, maybe what, that's if they keep something, like some keep, they carve things and keep, if a menstruating woman passes it, the things' loses its power, that's it has destroyed it entirely, it no longer has any efficacy. And if you are cooking, that it is not for those who are titled. If you come to titles, there are different kinds, talking about titles, they are numerous. There are various titles that are taken. Why a menstruating woman will not cook for them is because, maybe if she does so, that title, the title being held by the person becomes defiled. It will no longer be efficacious, so that is why it is done. That's a menstruating woman going close to or cooking for a titled man is out of the question. - Mother of in school girl, Urban, Anambra State</i></p>

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Yoruba – Osun	Menstruating girls are not allowed to cook	<p>M: At home level, what are the things you think they would not allow Suliyat to do because she is menstruating?</p> <p>P2: They would not allow her to cook</p> <p>M: Why would they not allow her to cook?</p> <p>P5: Because she may not remember that she is menstruating and may touch her private part and then use the same hand to touch what she wants to eat</p> <p>M: So they would not allow her to cook at home the day Suliyat is menstruating. But who cooks on that day?</p> <p>P: Her mummy can help her</p> <p>M: But if her mummy is menstruating on that day, what happens?</p> <p>P: May be her younger ones</p> <p>M: If all of the females in the house are menstruating then who cooks for them?</p> <p>P5: Then they won't eat in that house</p> <p>FGD Girl in school, Urban, Osun State</p>
	Men can get infected from sex with a menstruating woman	<p>if a woman should meet with a man or a man should meet with a woman during her menstrual period considering the fact that the menstrual blood is a waste from women's body, if he man's body is sensitive he can get infected from the woman, probably that is why they made it a prohibition- Mother of in school girl, Urban, Osun</p>
	If a rat eats used menstrual material, the next child the woman would have following that menstruation will be a thief	<p>The myth around it that I see is that the menstrual materials must not be put on the ground or placed anyhow. Because my grandma told me when I was young that if rat should eat part of the menstrual materials, any pregnancy (child) that results from that last menstruation (where rats ate part of the materials) will be a thief. The child will be stealing. - Mother of in school girl, Urban, Osun</p>
	Girls must not spread washed menstrual cloth under the sun as odour produced is harmful to people	<p>In addition, I also heard something about people using cloth for their menses. That the cloth must not be spread under the sun as it emits different odour to people around; that such odour is harmful to people smelling it. - Mother of in school girl, Urban, Osun</p>
	Women should be careful about what they eat during menstruation	<p>They also warn us to be careful about what we eat during menstruation.that if you eat groundnut, it attracts odour... they said it makes the menses to smell - Mother of in school girl, Urban, Osun</p>
Katsina	Girls must not spread menstrual cloth under the sun because of evil people, in addition, wild animals should not eat the used cloth which has been thrown away as this means the girl might become barren	<p>That she should not eat sugary things. It may cause stomach pains – School girl, Urban, Osun</p> <p>So it helped me I because I taught it in the school then in the home so that is why I was able to impact that knowledge to the students as this is what to do this is what to do even the issue of cloth. You know, by the time we are doing our menstruation and we are using cloth... You know after you might have washed that cloth that cloth should not be exposed outside.... Ah it is very dangerous because of the future... we have extended family, polygamous family where we have up to 4 or 5 ermm parents living in the same roof, so that is why by the time you are doing your menstruation you should make sure that you must make sure that very particular each and every person must be very careful because of the future so when we get married we should not have problem in our husband's house... then by the time we remove that thing and throw it away that is the knowledge we have by that time "won ma so pe oya bi ejo, eranko ko gbodo gbe je" people say snake or any animal must not take it... hmmm "tori ojo iwaju na ni ki olorun ma je ki ari eni ti o ma se wa ki eeyan le bimo" because of the future let God not allow anyone to harm us to that we can give birth – Female School Teacher, Urban, Osun State</p>
	Menstruating girls should not enter a palm oil processing center	<p>some say we must not enter "ada" where they produce oil (palm oil). This is because we use water in oil processing, if someone menstruating should enter the "ada" the water in "ada" the water in "ada" will reach up to this place(describing possibly up to the waist or above), the menstrual blood may get into the oil, it might be draining into the oil.... - Mother of in school girl, Rural, Osun</p>
	Girls must not tell males about their menstruation status	<p>They must not tell boys when they are menstruating-Mother of in school girl, Urban, Osun</p>
	When menstruating girls cannot run nor talk to boys 'too much', their hygiene material will come off	<p>you cannot run up and down, you cannot also lick sweet...you don't talk to boys too much....they said that when you talk to boys too much your pad will fall down. - School Girl, Urban, Katsina State</p>
	When someone dies, a menstruating female cannot touch the corpse	<p>And when somebody dies. She will not touch the corpse. - Mother of in school girl, Urban, Katsina</p>
Girls cannot hold new born babies	<p>traditionally they don't give menstruating girl new born baby to hold...because according to them the baby uses to get spoiled- Mother of in school girl, Rural, Katsina</p>	

ANNEX 4: Quotations from Study Findings

M: Apart from the stomach ache, how would you know that her next period is around?

P3: By knowing the date that the thing used to happen

P8: Waist pain

P2: By counting, like some people, they, they do see theirs once in a month, then two months will go by, then the next month is when, they will be start seeing theirs

FGD, In School Girls, Urban, Anambra

Mhhh like I told you, we have plans of erecting: some more toilets because the former person that was here didn't do that. The one they have is dilapidated. They don't even, the girls don't even like going there except they want to go and change their sanitary towel. They don't like using it

KII School Head, Rural, Anambra

R: when my pad finish, i normally have cloth or towel

I: that you will use. How many cloth or towel do you have

R: i have cloth like 4. Towel 2.

I: ok. and its always at home

R: Yes

R: when i used scissors to cut it, i wash it. when i wash it, i dry it. then I'm using it.

I: ok. thank you very much. so, apart from cloth and the, apart from clothes and the pad

In School Girl, Rural, Osun

When they are in school, when they are in menses they don't usually participate in most of the school program. They isolate themselves as like sports they don't, they don't normally participate in sports. If they are doing manual work they don't come; if we are doing any program out even in the classroom they hardly pay attention to normal teaching. It has a psychological effect on the on the child

KII, School head, Rural, Anambra

R: I won't seat well, I will sit but I won't sit well or I will not stay in the class. I will go to our hall so that I can't smell.

In school girls, Urban, Anambra

Another lacking hygiene facility which would have contributed in the building of a supportive system for the school girls was a changing room or bathroom. In most of the interviews conducted, girls in school and girls out of school described their bathing habits during menstruation should involve having at least three baths everyday but many of the schools did not have bathing facilities that the girls could use in the school. In addition to this, there were no available changing rooms for the girls to change used and soiled menstrual materials or clothing. As such the girls were forced to either go to the hostel matron (in cases where the students were boarded), go into bushes to change, go to nearby houses or friends' houses, or use cardigans or sweaters to cover up stains while enduring perceived odours from menstruation, which took away any form of privacy attached to their periods as the odours from unattended to menstruation was described as rather offensive. This was especially true for non-boarding students who come from home.

To deal with this problem, many girls resorted to going home during the school period to change their sanitary towels. Teachers who were aware of the reasons why the girls were going home, especially in schools where the toilets were poorly kept or unusable, were usually sympathetic to the girls need to go home and so granted them permission.

Hmmn no, what I, I noticed is maybe at times they will come and meet me, aunty my menstruation just came out, what I will ask the person, when did you start seeing it? She said now. Do want to go home? Yes I want to go and change, that's the thing, At times someone will be, will be menstruating and if they come to school it will stain their cloths, they will come and meet me, aunty, ma, I am, I am stained, what happened? I am menstruating, do you need tissue? The person will say no, that, she wants to go home and change, I do allow them to go home.

KII, Female School Teacher, Rural, Anambra

Generally they can organize seminar for them, group them and begin to talk to them. They can use any forum maybe on a moral instruction days. Even there are times the form teachers have meetings with their students you can use that to tell the students on cleanliness then you can delve into menstrual this thing as a topic. And tell girls about it. In order for the girls not to feel bad you can take aspect of that of the boys and tell them about their own on puberty level so that the whole thing will be balanced because it is a co-educational institution. Once you are having that meeting to them in general the boys will be there, the girls be there so you pick a topic that will balance the issue. You tell the girls about their menstrual period and the age they will meet it and once the things they will avoid, how they will avoid the boys or the opposite sex. Then you pick up another topic relating to that maybe on puberty level topic and begin to tell boys about it. So that the girls will also feel secured about their own and begin to hear that of the boys, you tell them about what happens to them in their genital organ, how they will develop.

School head, Urban, Anambra

Girls often felt restricted in carrying out their daily activities and therefore, isolated from their classmates and from partaking in certain activities including running, jumping and menial labor. Girls who were usually talkative also became rather silent while in class and unable to participate in regular class activities. At other times, the girls were reported to have mood swings and be uncooperative in class and in their social relationships.

ANNEX 5: Challenges Related to WASH Facilities in School

Sanitation

- No. of toilets small for population of students
- Toilet not secured along bush parts
- Toilets not segregated
- Toilets are long distance away from classrooms.
- Toilets without roofs covers & rough floors
- No locks at toilet doors
- Dark inside/poor ventilation
- Bushy entrance & outside
- Toilet if segregated not far from that of the boys.

Water

- Lack of water to wash hands and toilets.
- No boreholes and if available not functional.
- Water not connected to toilets.
- No soap.
- No hand basins.
- Use of sand as soap.
- No changing & bathing rooms.

Disposal

- No sanitary waste bins inside toilets
- Waste bins outside the classroom
- Pit toilets
- Outside dump sites
- Improvised holes
- Self-dug pits by hand.

ANNEX 6: Photos of WASH Facilities in Schools



Students' urinary Credit: Femi Aluko 2015



School water well. Credit: Temi 2015



Disused Pit toilet in urban school.
Credit: Femi Aluko 2015



Toilet compartment without roof & doors.
Credit: Tomi Ogunsanwo 2015



Female VIP toilet urban school
Credit: Femi Aluko 2015



Rural school toilet overgrown with bush.
Credit: Nkadi Onyegegbu

AN ASSESSMENT OF MENSTRUAL HYGIENE MANAGEMENT IN SECONDARY SCHOOLS



Male Toilet in urban school.
Credit: Temi Ogunsanwo



Toilet, Urinary & hand basin. Credit: Chioma Eze



Disposal site in urban school.
Credit: Temi Ogunsanwo 2015



Disposal site



Disposal bin outside toilet: Credit: Chioma Eze 2015

Annex 7: Procedure for Analysis

After the primary coding using the developed codebook, the data was merged together into a master hermeneutic unit and all quotes within the codes were reviewed in a secondary coding process. Here, redundant codes were cleaned out, split, merged and re-named. A tertiary coding process involved re-reviewing data in a final process and carrying out further analysis using qualitative analysis tools to coerce information out of the data received. Some processes carried out included querying, word crunching, code-co-occurrence, plotting up code-primary document tables, as well as cross-checking for redundant codes or quotations. Network diagrams were drawn to show relationships between codes, quotations, code families and memo families. Throughout the entire process of coding, memoing was carried out to record information for use in report writing procedures.

Further triangulation to ensure data quality was carried out during the report writing stage and two analysts drafted the reports at different stages while other members of the analysis team compared the reports written with the information they had from written memos throughout the process to ensure that the reports adequately captured information on the entire analysis process. This report presented the findings of the study as well as the recommendations from both the participants and the analysis team.

The quantitative data analysis of this study used the observational checklist to determine the physical conditions of the WASH facilities available in the schools covered. The quantitative findings substantiated the reports of the qualitative results.

Nigeria Recommendations Translating Evidence into Practice



Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
Limited understanding of periods in adolescent girls	Increase knowledge of periods among girls in primary school	1. Integrate menstrual hygiene education into the Family Life HIV/AIDS Education (FLHE) curriculum for primary schools.	1. Feasibility=1, fine goal for long term but not short term.	1. PFC=5. This could have real and sustained impact.	1. Ministry of Education; National Education Research Development Council (NERDC); NGOs
		2. Training of teachers to organize sessions with pupils during and after school	2. Feasibility=5, it is easier to achieve in the short term; expand.	2. PFC=4. Teachers and pupils will learn and share information	2. Ministry of Education; SUBEB; Zonal director of Education; LGEAs; Teachers; NGOs.
		3. Start girls groups for girls and train them to be peer educators on puberty and sexuality education	3. Feasibility=5, short term	3. PFC=5, girls learn from each other correct information on MHM.	3. Coordinating teachers; girls; NGOs; SBMC; Head-teacher
		4. Create and	4. Feasibility=4, short term. in the first	4. PFC=5, dissemination of information on MHM in	4. Ministry of Education;

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Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
<p> Policymakers lack of understanding of MHM challenges girls face in school</p>	<p> Increased awareness/knowledge of policy makers on MHM challenges at the school and community levels</p>	<ol style="list-style-type: none"> 1. Research dissemination of study findings meeting 2. Develop advocacy factsheets on challenges that girls face on MHM 3. Advocacy visits to policy makers at the Ministry of Education, SUBEB, ZDE and LGEA. 4. Conduct community dialogue with community and religious leaders; and 	<ol style="list-style-type: none"> 1. Feasibility=5, short term 2. Feasibility=4, Short term 3. Feasibility=5, short term 4. Feasibility=5, short term 	<ol style="list-style-type: none"> 1. PFC=5, A platform for states to understand the magnitude of the challenges faced by girls on MHM in school 2. PFC=4, the factsheet will present facts from the research findings to the policy makers, donors, NGOs and private sector philanthropists. 3. PFC=5, greater potential for change 4. PFC=4, the dialogue will increase knowledge on challenges girls face in MHM in school. 	<ol style="list-style-type: none"> 1. Federal Ministry of Education; Technical working group; Unicef; Donor Agencies; MHM research team 2. Unicef, MHM research team 3. Ministry of Education; SUBEB, LGEA; Unicef; NGOs 4. Ministry of Education; SUBEB; LGEA, Unicef; NGOs;

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Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
<p> Inadequate / Partially functional WASH facilities</p>	<p> Enabling environment for girls to manage menstruation in school</p>	<ol style="list-style-type: none"> 1. Advocacy visit to SUBEB and ZDE on the need to provide standard WASH infrastructure 2. Construct gender segregated and gender-specific toilet facilities, in schools 3. Rehabilitation/upgrade/expand of existing WASH facilities to established standards 4. Provision of disposal facilities (incinerators, pit toilet, etc.) for used menstrual absorbents 	<ol style="list-style-type: none"> 1. Feasibility=4, short term 2. Feasibility=3, medium term 3. Feasibility=3, long term 4. Feasibility=4, long term 	<ol style="list-style-type: none"> 1. PFC=4, great potential for change 2. PFC=5, provide enabling environment for girls to remain in school during menstruation 3. PFC=5, provide enabling environment for girls to remain in school during menstruation 4. PFC=5, provide enabling environment for girls to remain in school during menstruation 	<ol style="list-style-type: none"> 1. Ministry of Education, Unicef; head-teachers, NGOs, MHM research team. 2. SUBEB; Unicef; donor agencies; philanthropists, SDGs, ETF; PTA, Alumni. 3. SUBEB; Unicef; donor agencies; philanthropists, SDGs, ETF; PTA, Alumni 4. Parents; PTA; manufacturers of sanitary materials, alumni

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Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
Inadequate Materials for Girls to manage menstruation	Girls have adequate materials to manage menstruation	<ol style="list-style-type: none"> 1. Provision of sanitary pads in custody the coordinator of peer to peer club for girls to manage menstruation in school 2. Community level training on mothers and girls on making reusable sanitary materials from local materials. 3. Training of girls on how to maintain hygiene of reusable menstrual materials 4. Identify of manufacturers of menstrual materials and advocacy to 	<ol style="list-style-type: none"> 1. Feasibility=3, medium term 2. Feasibility=4, short term 3. Feasibility=4, short term 4. Feasibility=4, short to medium term 	<ol style="list-style-type: none"> 1. PFC=5, provide enabling environment for girls to remain in school during menstruation 2. PFC=4, Provision of materials for girls to remain in school during menstruation 3. PFC=5, enable girls to maintain hygiene of the reusable sanitary materials 4. PFC=5, enable girls to maintain hygiene of the reusable sanitary materials 	<ol style="list-style-type: none"> 1. Parents; PTA; manufacturers of sanitary materials, alumni 2. Parents; NGOs; SMEs; girls. 3. NGOs; trained teachers; Parents; girls; school teachers; NGOs 4. SUBEB; NGOs; Unicef; donor agencies.

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Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
Cultural norms make talking about menstruation a taboo; see menstruation as shameful	Menstruation is understood as a natural biological process	<ol style="list-style-type: none"> 1. Strategic dialogue with the community leaders (traditional rulers/religious leaders/youths/women groups/ community) to provide correct facts concerning community myths and taboos. 2. Create and broadcast/ air mass-media products (jingles, health talks, newspaper articles, drama, video clips) and social media sharing (facebook, tweeter, to go, whatsapp, blogs) to provide evidence-based facts concerning community myths, beliefs and taboos. 3. Sensitization and strategic dialogue with 	<ol style="list-style-type: none"> 1. Feasibility=4, short term 2. Feasibility=4, short term 3. Feasibility=4, Short term 	<ol style="list-style-type: none"> 1. PFC=4, participatory engagement will help the community in separating facts from myths/taboo/ beliefs. This will bring about change to their perception on MHM 2. PFC=5, Broadcast of facts about MHM will lead to wider coverage among communities and regions which will lead to faster and more effective dissemination will provide correct facts concerning of community myths/taboo/ beliefs 3. PFC=4, Sensitization of relevant community 	<ol style="list-style-type: none"> NGOs; RUWSSA; Faith-based/CBOs; community/religious leaders. 2. Mass media outlets, Nollywood, Telecoms entities, UNICEF, MHM research team, Community members, girls, boys, teachers, institutions of higher learning, NGOs, Donors 3. NGOs, Religious leaders, traditional

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Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
Girls do not have the support they need	Established support structures	1. Organize separate women and girls support groups in the community to promote MHM	1. Feasibility=4, short term	1. PFC=5, separate support groups for girls and women will promote inclusive discussion about MHM and related activities.	1. Unicef; parents; women; NGOs; out-of-school girls, in-school girls; faith based organizations/CBOs.
		2. Promote effective child-parent/guardian communication through sensitization and transfer of knowledge from child-parent, child-child and teachers-child.	2. Feasibility=4, short term	2. PFC=4, effective communication between parents/guardians and girls will ensure guided and correct MHM practice	2. Unicef; teachers; parents; women; NGOs; out-of-school girls, in-school girls; faith based organizations/CBOs
		3. Organization of intra-school and interschool debate, quizzes and essay competition on	3. Feasibility=4, short term	3. PFC=4. Organization of debates, quizzes and essays increase knowledge about facts on MHM and	3. Head-teachers, Teachers, PTA, girls, SBMC, NGOs, FBOs, ZDE, SUBEB.

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Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
Teasing, shame and stigma by peers and society	Boys, Female peers and society support girls when menstruating	1. Establishment of peer to peer education clubs/MHM/WASH/Health clubs	1. Feasibility=4, Short term	1. PFC=4; Peer clubs provide a platform for dissemination of correct information about MHM information.	1. Teachers, girls, Boys, Head teachers, NGOs
		2. Conduct Sensitization meeting for pupils/students and society on MHM to reduce teasing, stigma and shaming of girls in the community	2. Feasibility=5, Long term	2. PFC= 4; Continuous sensitization of learners will provide a knowledge base about MHM will inform a change in their behavior towards menstruating girls	2. Head teachers, Teachers, Boys, girls, Community members, NGOs, SBMC, PTA
		3. Continuous corrective measures for those who tease through sensitization and Counselling	3. Feasibility=5; Long term	3. PFC=5; Continuous counselling and sensitization of repeat teasers will over time inform a change in their behavior towards menstruating girls	3. Head teachers, Teachers, Boys, girls, Community members, NGOs, SBMC, PTA
		4. Organization of intra-school and	4. Feasibility=4, short term	4. PFC=4. Organization of debates, quizzes and essays increase knowledge about facts on MHM and	4. Head-teachers, Teachers, PTA, girls, SBMC, NGOs, FBOs, ZDE, SUBEB.

Nigeria Recommendations Translating Evidence into Practice



Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
Unclean WASH facilities in schools	Increased hygienic operation and maintenance of WASH facilities.	<ol style="list-style-type: none"> 1. Sensitization of head teachers and teachers about the importance of clean toilets in schools. 2. Establishment of gender-based regular cleaning rosters for both boys and girls; sharing of roles and responsibilities for cleaning, including identifying a monitor who ensures the toilet remains clean. 3. Provision of essential cleaning materials such as: water, disinfectants, protective equipment. 	<ol style="list-style-type: none"> 1. Feasibility=5; Short term 2. Feasibility=5, Short term 3. Feasibility=4; Short term 	<ol style="list-style-type: none"> 1. PFC=4; Teachers who are sensitized about the need for clean toilets in schools will monitor students toilets to ensure that the toilet remains clean 2. PFC=5; Established monitoring systems for the toilets and regular cleaning rosters reduces the possibilities of open defecation in school toilets and enforces cleanliness of the toilets 3. PFC=5, Provision of cleaning materials increase the students capability to maintain clean toilets 	<ol style="list-style-type: none"> 1. Head teachers, NGOs, CBOs, Teachers, SBMC, ZDEs, RWSSA 2. Head teacher, Health Monitor, Sanitation prefects, porters/cleaners, sanitation teacher 3. Head teacher, Health Monitor, PTA, NGOs, SUBEB, SBMC, Alumni,

Nigeria Recommendations Translating Evidence into Practice



Evidence From Research	Vision of Change	Potential Activities	Feasibility	Potential for change	Who?
Head-teachers' inadequate understanding of MHM challenges girls face and lack of ability to manage the challenges	Head-teachers' increased knowledge and ability to manage MHM challenges	<ol style="list-style-type: none"> 1. Workshop/training for head-teachers at state/region/national levels during meetings, e.g. Association of Nigerian Conference of principals of Secondary schools and (ANCOPSS) 2. Solicit for goodwill/donations (hygiene and sanitation facilities and consumables) from SBMC, PTA, community leaders, alumni 	<ol style="list-style-type: none"> 1. Feasibility=3, short term 2. Feasibility=3, Short term 	<ol style="list-style-type: none"> 1. PFC=4. Training them about MHM and informing them about the importance of supporting girls in managing menstruation while in school 2. PFC=3. Donations will increase the ability of schools aid girls in managing menstruation in school. 	<ol style="list-style-type: none"> 1. Ministry of education; Head-teachers; principals; Unicef; NGOs, MHM research team and the national consultant 2. Head-teachers, parents, alumni, community, manufacturers of sanitary materials.

