

KNOWLEDGE BELIEF AND PRACTICE OF MENSTRUAL HYGIENE  
MANAGEMENT AMONG IN-SCHOOL ADOLESCENTS IN KATSINA STATE  
NIGERIA

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บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)  
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ความรู้ ความเชื่อ และการปฏิบัติ ต่อการจัดการสุขอนามัยเมื่อมีประจำเดือนของวัยรุ่นในระบบ  
การศึกษาในรัฐคัตชินา ประเทศไนจีเรีย

นางสาวสเตล่า อีพีโอม่า โอกาפור



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญา  
สาธารณสุขศาสตรมหาบัณฑิต  
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### บทคัดย่อ

คำสำคัญ: วัยรุ่นในระบบการศึกษา การจัดการสุขอนามัยเมื่อมีประจำเดือน การสุขาภิบาลและสิ่งอำนวยความสะดวกด้านสุขอนามัย มายาคติ ความเชื่อ ความเชื่อที่ผิด การปฏิบัติต่อการจัดการสุขอนามัยเมื่อมีประจำเดือน รัฐคัตซينا ประเทศไนจีเรีย

ในประเทศไนจีเรีย เรื่องของประจำเดือนเป็นประเด็นที่ไม่ค่อยถูกกล่าวถึงหรือพูดคุยกันในสังคม ด้วยเพราะประเด็นดังกล่าวถูกกดทับไว้ด้วยความเชื่อ วัฒนธรรม และมายาคติ อย่างไรก็ตามเรื่องของการประจำเดือนและการจัดการสุขอนามัยเมื่อมีประจำเดือนเป็นประเด็นสำคัญสำหรับความเท่าเทียมกันทางเพศ รวมไปถึงประเด็นของการพัฒนาและสิทธิมนุษยชน ในประเทศไนจีเรีย การศึกษาวัยรุ่นเกี่ยวกับการจัดการสุขอนามัยเมื่อมีประจำเดือนนั้นยังคงมีน้อยและไม่เพียงพอ จึงจำเป็นต้องมีการศึกษาและประเมินถึงความรู้ ความเชื่อ และการปฏิบัติ ต่อการจัดการสุขอนามัยเมื่อมีประจำเดือนของวัยรุ่นในระบบการศึกษาในรัฐคัตซينا ประเทศไนจีเรีย

การวิจัยครั้งนี้เป็นการศึกษาภาคตัดขวาง ในกลุ่มวัยรุ่นอายุ 10-19 ปี ที่อยู่ในระบบการศึกษาในระดับมัธยมศึกษา โรงเรียนเทคนิค/อาชีวศึกษา หรือในระดับวิทยาลัย ในรัฐคัตซينا ด้วยการตอบแบบสอบถามด้วยตนเองเกี่ยวกับการมีประจำเดือนและการปฏิบัติต่อการจัดการสุขอนามัยเมื่อมีประจำเดือน ในส่วนของการวิเคราะห์ข้อมูล ได้ใช้สถิติการวิเคราะห์ตัวแปรเดียว และตัวแปรสองตัว ที่ระดับความเชื่อมั่นร้อยละ 95

ผลการวิจัยพบว่า จากกลุ่มตัวอย่าง 395 คน ร้อยละ 50.4 มีอายุระหว่าง 12-15 ปี ในจำนวนนี้มากกว่าร้อยละ 59 ไม่รู้ถึงสาเหตุของการมีประจำเดือน การเกิดของประจำเดือน และระยะเวลาของการมีประจำเดือน ในขณะที่ร้อยละ 39.7 ของกลุ่มตัวอย่าง มีความรู้พื้นฐานเกี่ยวกับการมีประจำเดือน ในส่วนของการสัมพันธ์ระหว่างความรู้และการปฏิบัติพบว่า มีความสัมพันธ์กันอย่างมีนัยยะสำคัญที่  $P=0.026$  นอกจากนี้ ร้อยละ 68.6 ยอมรับว่ามีวัฒนธรรม ศาสนา ความเชื่อ และมายาคติ เกี่ยวกับประจำเดือน ในชุมชนของตัวเอง และร้อยละ 77.4 ยอมรับและเห็นด้วยว่าการมีประจำเดือนนั้นเป็นข้อจำกัดในชีวิต

การวิจัยครั้งนี้พบว่า ระดับความรู้ ความเชื่อ และปัจจัยเอื้อของกลุ่มตัวอย่าง มีผลต่อระดับการปฏิบัติการจัดการสุขอนามัยเมื่อมีประจำเดือน นอกจากนี้ยังเป็นการบ่งชี้ให้เห็นว่าหากมีการจัดหาปัจจัยเอื้อที่เพียงพอ จะสามารถลดระดับความยากลำบากในการจัดการสุขอนามัยเมื่อมีประจำเดือนของวัยรุ่นได้ รวมไปถึงการชี้ให้เห็นถึงความจำเป็นเร่งด่วนในการทำความเข้าใจกับผู้นำศาสนาและผู้นำทางประเพณี อีกทั้งการสนับสนุนให้รัฐบาลณรงค์เรื่องดังกล่าวผ่านสื่อต่างๆ โดยเน้นให้เห็นถึงมายาคติทางสังคม และความเชื่อที่ผิด ๆ ซึ่งส่งผลเสียต่อการจัดการสุขอนามัยเมื่อมีประจำเดือน

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KEYWORDS: IN-SCHOOL ADOLESCENTS / MENSTRUAL HYGIENE MANAGEMENT / KNOWLEDE / BELIEFS / HYGIENE PRACTICE / KATSINA STATE NIGERIA

STELLA IFEOMA OKAFOR: KNOWLEDGE BELIEF AND PRACTICE OF MENSTRUAL HYGIENE MANAGEMENT AMONG IN-SCHOOL ADOLESCENTS IN KATSINA STATE NIGERIA. ADVISOR: MONTAKARN CHUEMCHIT, Ph.D., 102 pp.

In Nigeria menstruation tends to be an unmentionable topic of discuss, bounded by silence in the name of culture and blanketed in myths and misconceptions; yet, menstruation and menstrual hygiene are emerging as critical issues for gender equality and inclusion, human rights and development. In Nigeria, few studies on MHM had existed, and it is still inadequate thus this research to assess the Knowledge, beliefs and practice of MHM among in-school adolescents in Katsina state, Nigeria.

A cross-sectional study was conducted among in-school adolescents menstruating girls between the ages of 10 to 19 years in four government Girls Junior secondary/technical schools or college in Katsina. Self-administered questionnaire on menstruation and menstrual hygiene practice was used to elicit responses from volunteered participants. Analysis of the variables was done using Univariate and bivariate analysis at 95% confidence level.

Among the 395 respondents, 50.4% of the menstruating girls were at the modal age of 12-15. More than 59.7% do not know: the cause of menses, channel through which menses flows, intervals between menses while 157 (39.7%) of the respondents have basic knowledge on menses thus the association of knowledge and practice was found at  $P=0.026$ . Consequently 68.6% agree that there exist some cultural/religious beliefs and myths regarding menses in their various localities and as much as 77.4% agree that there are restrictions

This study has been able to establish that there is a relationship or association between respondents' level of knowledge, belief, and enabling factors with the level of menstrual hygiene practice. It as well identified those enabling factors which when adequately provided will reduce the difficulties adolescent girls face while managing their monthly period. It has also brought out the urgent need for intensified sensitization of traditional/religious leaders and advocacy to government for inclusion issues around menstruation management in media programmes and addressing the various societal myths, misconceptions and false beliefs which negatively affects menstrual hygiene management.

Field of Study: Public Health

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Student's Signature .....

Advisor's Signature .....

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## LIST OF ABBREVIATIONS

MHM:	Menstrual Hygiene management
WASH:	Water, Sanitation and Hygiene
LGA:	Local Government Area
JSS:	Junior Secondary School
PTA:	Parents Teachers Association
SUBEB:	State Universal Basic Education Board
SBMC:	School Based Management Committee
UNICEF:	United Nations International Children’s Fund
UNESCO:	United Nations Education Scientific
KBP	Knowledge, Beliefs and Practice
JSS:	Junior Secondary School
JS 1:	Junior Secondary class One
JS 2:	Junior Secondary class Two
JS 3:	Junior Secondary class Three
MDGs:	Millennium Development Goals
SDGs:	Sustainable Development Goals
HPHBs	Hand Pump Boreholes
MBHs:	Motorized Boreholes
VIP:	Ventilated Improved Pit latrine
WC:	Water closet or Water Cistern
SDGs:	Sustainable Development Goals
VTI:	Vaginal Transmitted Infection

# CHAPTER ONE

## INTRODUCTION

### 1.1 BACKGROUND AND RATIONAL:

Globally, many women and girls face challenges when managing their menstruation, this was asserted by Performance Monitoring and Accountability 2020.(Monitoring, 2016) It is noted that failure to address the menstrual hygiene needs of women and girls can have grave consequences, including affecting progress towards achieving the sustainable development goals (SDG) of gender equality (Monitoring, 2016).

Menstruation is an occurrence exclusive to females or women. Menses is a normal natural process that occurs in all healthy adult women and girls of reproductive age (Onygebu, 2011). The commencement of menstruation is one of the most significant changes occurring in girls during adolescent or puberty stage (Rajakumari, 2015). The World Health Organization defined “adolescence as the young people between the ages of 10 and 19 year((WHO), 2012). In many parts of the world especially in developing countries like Africa and Asia, menstruation tends to be a unmentionable topic, bounded by silence and blanketed in myths; yet, menstruation and menstrual hygiene are emerging as critical issues for gender equality, human rights and development, this was according to Water Supply and Sanitation Collaborative Council((WSSCC), 2016) Menstruation indeed ensures continuity of humanity and thus should be distinguished every day, rather than concealed behind shame and disgust ((WSSCC), 2016)

Menstruation or monthly period as is being called in some localities in Nigeria including Katsina is surrounded with myths and false concepts. Some perceive it as taboo, some see it as cause, others regard it as being unclean thus need not be discussed; all these are personal perception thus issues as important as this are being swept under the carpet and are treated with negligence. In a study “Menstrual Hygiene among women and young females in rural Eastern Nigeria”, it is noted

that in Nigeria rural villages or communities, there is this philosophy of quietness and embarrassment on matters relating to sexuality and menstruation (Onygebu, 2011) Community members are conditioned to hide everything related to their private lives; and public discussions on these grey areas are seen as prohibitions. Menstruation and its hygiene are hardly discussed freely at homes, in schools or in rural villages or communities(Onygebu, 2011). In most families it is often treated with great secrecy and embarrassment. This is clearly attributed to cultural restrictions, preventing sufficient information from reaching women and young girls. The traditional culture and negative attitudes of village members has also strong impact on the discussion of menstruation and menstrual hygiene practices (Onygebu, 2011).

Beliefs, misconception and myths about menstruation are propagated by society and often describe women and girls as inferior to men and boys. This reinforces gender inequalities, often constitutes discrimination and has a negative impact on the fulfilment of the universal human rights to dignity, health and education of women and girls (WaterAid, 2013). In recent study carried by water aid Nigeria on menstrual hygiene management (conference) in Benue, Bauchi, and Plateau States in Nigeria to explore and understand existing MHM practices and the context that might impact positively or negatively on the implementation of a MHM programme in Nigeria, the study revealed deeply rooted attitudes and myths surrounding menstruation including the belief that a menstruating woman or girl is cursed and possessed by evil spirits and brings bad luck. Such beliefs result in restrictions being placed on girls and women during their menstruation –these include exclusion from attending religious services and even holding their infants. The major finding from Nkadi’s study on “Menstrual Hygiene among women and young females in rural Eastern Nigeria” showed that discussions on menstruation and menstrual hygiene in the rural villages remain very sensitive, secretive and surrounded with negative attitudes of social taboos (Onygebu, 2011).

It is noted that across the world there exist many beliefs (socio-cultural and religious) and myths surrounding menstruation. Girls are viewed as having reached "maturity", therefore many are removed from school to be married or to help at

home, and therefore do not complete their education (Khanna, Goyal, & Bhawsar, 2005) (Mudey, Kesharwani, Mudey, & Goyal, 2010)). Consequently, to the above in Batsari Local government of Katsina state in Nigeria, a student while engaged in a discuss during 2017 MHM day, reveal that menstruation is as a punishment Allah gave to Hawau as a result of disobedient when she ate the forbidden fruit by Allah. Other existing myths include that albinos are children conceived during menses, sex during menstruation will lead to impotence and infertility in concerned couple. There are links to religious beliefs which are as well strong: Muslims believe that women should not go to the mosque, touch the Qur'an or fast during Ramadan when menstruating (Fetohy, 2007). Muslim and Celestial Christian faith view women as "impure" thus need to carry out purification process after menstruation period while the Hindu views menstruating women as "polluting". They are not permitted to touch others or cook, nor can they attend religious gatherings (Ten, 2007). In the course of my duties, my personal interaction with out of school adolescents, portrays ignorance and wrong perception on menstruation and its hygiene management. Some religion regard menstruation as a state of being unclean or a state of filth thus the adolescent girls or women are being prohibited from participating in any religious activities, some are being ostracized for the duration and even given additional days to ensure the period of uncleanliness is completed. Wives generally during this period are not allowed to cook for or sleep with the husband.

Menstrual Hygiene management is defined as the practice of using clean absorbent materials during menses; that can be changed privately, safely, hygienically, and as often as needed for the duration of the menstrual cycle (Monitoring, 2016)). Often times, girls especially in rural communities use several materials as deem "most appropriate" to them. The most commonly used absorbent material that are readily available and easily accessible in virtually all the communities are tissues, old used cloths or rags and napkin. This may be attributed to cost, availability, affordability, accessibility and personal choice. Commercial products of sanitary pads or towels are being viewed as products for the rich. An appraisal of menstrual hygiene management among women in a rural setting: a prospective study by

(Geethu et al., 2017), has it that majority of the respondents washed their sanitary pads before disposal, so that their blood could not be used to cast an evil spell leading to infertility or difficulties during childbirth according to their beliefs. This as noted by the above study still reflects the myths and misconceptions surrounding menstrual hygiene management (Geethu et al., 2017)

Enabling factors refers to elements and dynamics that enhance the practice of menstrual hygiene management. This includes MHM materials and facilities. In the Western World, there is easy access to a variety of products, available at a reasonable price (Sommer, Ackatia-Armah, Connolly, & Smiles, 2015). For too many women in developing countries, this is not the case. Studies have shown that girls are reduced to using rags, old cloth, pieces of old clothes, saris, cotton wool, toilet paper, or even pieces of mattress (Shah et al., 2013). Often the same piece of cloth is re-used for several months or years (Mahon & Fernandes, 2010). Not only are these practices unhygienic but they also cause severe discomfort, along with problems of blood leaking (El-Gilany, Badawi, & El-Fedawy, 2005), thus leading to feelings of shame and embarrassment. Disposable pads are seldom used, but most often by those from more privileged backgrounds (Umeora & Egwuatu, 2008). Many girls state they would prefer to use disposable products since they are more comfortable and it absorbs menstrual flow more effectively (Crofts & Fisher, 2012); (Sommer et al., 2015). Nevertheless, the barriers of high relative cost and lack of general availability means that disposable pads are not sustainable for young girls to use (El-Gilany et al., 2005); (Averbach, Sahin-Hodoglugil, Musara, Chipato, & van der Straten, 2009); (Mahon & Fernandes, 2010). In Uganda, sanitary pads for one girl cost one tenth of a family's monthly income, meaning this is a 'luxury' most families cannot afford (Averbach et al., 2009).

Based on recent study on assessment of Menstrual Hygiene Management in 4 secondary schools in 'Musawa and Malumfashi Local Governments of Katsina state by UNICEF in collaboration with Emory University, the presentation shows that negative societal beliefs, attitudes and practices still exist on MHM in schools



and communities (*UNICEF, 2016*). However, few studies on MHM in Nigeria had existed, it is still inadequate. Currently, there is no study published on the knowledge, belief and practice of MHM among in-school adolescents in Katsina state.

It is on this backdrop that the researcher wishes to explore on and assess the Knowledge, beliefs and practice of MHM among in-school adolescents in four LGAs (Kankia, Kaita, Charanchi and Mashi) of Katsina state.

The findings from this study will be shared with the following stakeholders; State education policy makers of State Universal Basic Education Board (SUBEB) in structuring of school WASH facilities to be gender/MHM friendly, curriculum design unit of ministries of education and health to introduce MHM education at basic levels of education or include MHM as a detailed topic in health education curriculum, school based management committee (SBMC) and Parents/Teachers Association (Dasgupta & Sarkar) for repositioning to provide all required consumables for proper MHM in various schools within the focal LGAs and possible scale up to other schools, used to sensitize private public partners or entrepreneurs on possible production of affordable re-usable sanitary pad.

## **1.2 Research questions**

- What is the prevalence (percentage) of practice on MHM among adolescents in selected schools of the LGAs in Katsina state?
- What are the socio-demographic characteristics, knowledge, beliefs, enabling factors and practice on MHM among adolescents in selected schools in the LGAs of Katsina state?
- Is there any association between socio-demographic characteristics, knowledge, beliefs, enabling factors and practice on MHM among adolescents in selected schools in the LGAs of Katsina state?

### 1.3 Research Goals and Objective

The main goal of this study is to assess the knowledge, beliefs of adolescents and practice by in-school adolescent girls.

The objectives are as follows:

- To determine the prevalence of practice on MHM among adolescent girls in selected schools in the LGAs of Katsina state.
- To assess the socio-demographic characteristics, knowledge, belief, enabling factors and the practice of MHM among adolescent girls in selected schools in the LGAs of Katsina state.
- To identify the association between socio-demographic characteristics, knowledge, belief, enabling factors and the practice of MHM among adolescent girls in selected schools in the LGAs of Katsina state.

### 1.4 Research hypothesis

- There is association between socio-demographic characteristics and the practice of MHM among adolescents in Katsina state.
- There is association between knowledge and the practice of MHM among adolescents in Katsina state.
- There is association between believe, and the practice of MHM among adolescents in Katsina state
- There is association between enabling factors and the practice of MHM among adolescents in Katsina state.

### 1.5 OPERATIONAL TERM DEFINITION

**Menstrual Hygiene Management (conference):** How adolescent girls maintain high level of hygiene or cleanliness during menstruation. This include bathing,

regularity of changing used sanitary towel or pad, method of disposal of used sanitary towel, type of sanitary towel in use, availability of the following management materials and support (sanitary towel, soap, availability of gender and MHM friendly WASH facilities, access to WASH facilities at school and home, changing room, hygienic dustbin, incinerator) and affordability of sanitary towels.

**Menstrual Hygiene (conference):** The ability of the adolescents to maintain proper hygiene during menstruation and handling of menstrual issues (bath regularly during menstruation, use sanitary pad, change trice a day, engage in daily activities, change pants, dispose their menstrual materials) with dignity and confidence.

**In-school adolescents:** These are girls between the ages of 10 – 19 years that are still in school, however in junior secondary level of education.

**Charanchi, Kaita, Mashi and Kankia Local Government:** These are four different Local governments in which one school each is selected based on purpose of the study.

**Local Government Area (LGA):** These are several communities within a political delineated area that makes up the state. The affairs and administration is run by politically elected person called the Chairman otherwise known as grass root government. It is the third tier of government in Nigeria and Katsina as a state have 34 LGAs.

**Period:** Monthly flow of blood from the vagina as a result of uterine wall rupture.

**Menarche:** First time a girl experiences menstruation in her life time.

**Socio-demographic characteristics:** This is to get information regarding the respondents with their parents and it include age of respondents, religion, education

level and occupation of parents, ethnicity, availability of television or radio, family monthly income, age at menarche, duration and cycle of menses, whom respondents live with.

**Availability of television or radio:** This will be used to assess the means of respondents' source of information regarding menses and menstrual hygiene and to possibly suggest inclusion of menstrual discussions in radio or television programs.

**Knowledge:** This is a set of understanding of MHM in terms of what menstruation is all about (whether physiological or pathological, the cycle, the cause, the duration and human organ through which it flows out and knowing how to stay clean throughout the period.

**Belief-Myths:** This is the set of conviction held by the individuals within communities which are based on culture and religion of the society or community under study. These then transcend to myths, which are a set of falsehood or fictions or misleading concept believed to exist whereas it does not exist in reality. Sometimes it is more of psychological and contributes significantly to the lives of the masses.

**Practice:** A set of habits exhibited by individuals which emanate from basic knowledge on MHM and this affects the way menstrual hygiene is being managed in terms of frequency in changing of sanitary towels, regular bathing, washing of the vulva, quality of materials used, disposal of used materials, hygienic handling of sanitary materials.

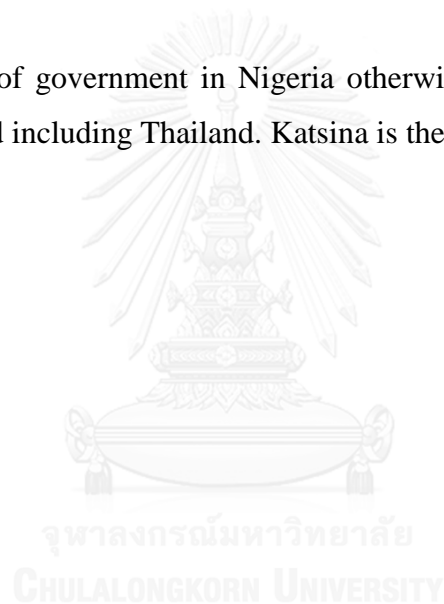
**Community:** In this context means the vicinity or area in which the school is located in. The community in which the school is located may have an impact on the respondents' beliefs or concepts about menses.

**Enabling factors** refers to elements that enhances or facilitates the practice of MHM. This includes availability of MHM materials, affordability or price of such materials, and water, sanitation and hygiene facilities (WASH) which are readily available and accessible to the adolescents.

**Menstrual Cycle:** this is the information or knowledge the respondent have on the maximum number of days between one menstruation and the next.

**Country:** Nigeria

**State:** a second tier of government in Nigeria otherwise call province in some countries of the world including Thailand. Katsina is the state under study.



## 1.6 CONCEPTUAL FRAMEWORK

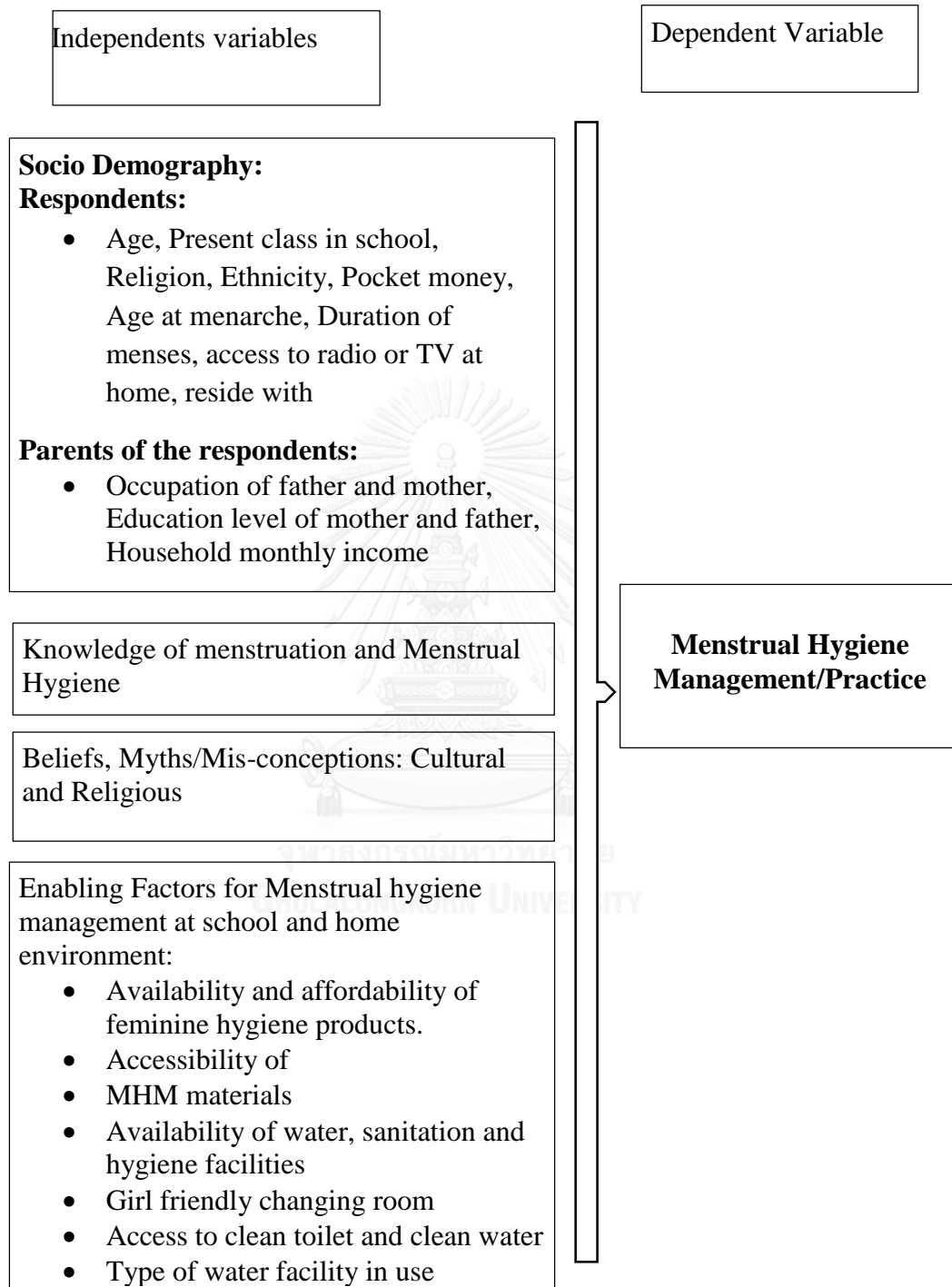


Figure 1: Conceptual Framework

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction Menstruation (Our girls today, our women tomorrow)

Menstruation is a normal, recurrent, biological and physiological event that occurs in every girl or woman of reproductive age. I could buttress that menstruation is a natural occurrence that transforms a girl of today to a woman of tomorrow. The menstrual period is a natural phenomenon that occurs throughout the reproductive life of every female. Despite the fact that menstruation is a normal physiological process, it is not often discussed openly especially in the rural areas. Some women, even in the developed countries, considered menstruation to be inconvenient or embarrassing (WSSCC, 2014).

The onset of menstruation is one of the most important changes occurring in girls during adolescent year (Rajakumari, 2015). Busari in his book quoting Abraham et al state that the beginning of menstruation in a girl marked the start of reproductive life (Busari, 2012). A review of Menstrual Hygiene Management among school girls in Sub-Saharan Africa presented by Jacqueline to the University of North Carolina stated that approximately 52% of the global female population is of reproductive age (Vaughn, 2013). The majority of these females menstruate between two and seven days each month. Menstruation is a natural component of the reproductive cycle. The entire reproductive cycle usually lasts between 21 and 35 days. Each reproductive cycle involves ovulation, meaning the release of an egg from the uterus to the fallopian tubes. Tissue and blood begin to line the walls of the uterus for fertilization, shedding through the vagina if fertilization does not occur (Vaughn, 2013).

Consequently, in sub-Saharan Africa, this normal process is considered taboo thus it is not discussed often. Due to the lack of knowledge and privation of other essential resources, menstruation is often managed poorly and is described by

schoolgirls as a negative and isolating experience (Vaughn, 2013), (UNICEF, 2015)).

## **2.2 Knowledge of Menstruation and Menstrual Hygiene Management**

Insufficient knowledge regarding menstruation and menstrual hygiene management results to none preparation for onset of menarche, misconceptions about disposal of soiled or used absorbent feminine sanitary pads and improper management of menses among adolescent girls at school (UNICEF, 2015). It was noted that poor knowledge about MHM had affected the level of hygiene practice among adolescents especially those in rural areas across the globe. Juyal et al opined that most girls about 89% in rural communities of Dehradun district of Uttarakhand use rag as sanitary towel, which also affect the health of the young adolescent.(Juyal, Kandpal, Semwal, & Negi, 2012)

Equipping the girl child with the necessary knowledge and skills needed to safely, confidently and effectively manage their menstrual hygiene in school is paramount. In a study on MHM in Nigeria, shows that parents and teachers are poorly equipped to improve girl child's knowledge on menstrual hygiene management especially schools with gender mainstream (UNICEF, 2015), (Onygebu, 2011),(Abioye-Kuteyi, 2000). Equally harmful are the long-term consequences of not preparing young people adequately, by not giving them the knowledge and skills to understand the changes they will experience or teaching them to manage basic bodily functions with comfort, confidence and awareness. Without sound information, delivered in an accessible manner at the appropriate age, the onset of puberty can be frightening and upsetting. Especially for girls: The high levels of stigma and disgust associated with menstruation signal to girls that this is a shameful and taboo topic. The negative message can seriously undermine girls' confidence and self-esteem, particularly when they become the target of teasing (UNESCO, 2014).

A study on menstrual knowledge and health care behavior among adolescent girls in rural Nigeria shows that the subject of menstruation and puberty hygiene discussed at home as well as at school in most parts of the country especially in the rural areas was not adequate. This problem is observed particularly in more



traditional and poorly educated environment mainly due to some cultural restrictions preventing the flow of correct information given to youngsters (Busari, 2012). In the same vein, (Abioye-Kuteyi, 2000) noted in her paper on menstrual knowledge and practices among secondary school girls in Nigeria that there are many misconceptions and superstitions associated with menstruation in this part of the world. Ignorance has led to many kinds of practices especially among the school girls, some of which are very much harmful. Menstrual problems have been reported in about 87 percent of school girls in Nigeria.

In a study carried out by Lawan et al, they found out that many mothers lack correct information and skills to communicate about menstrual hygiene which they pass on to their children, leading to false attitudes, beliefs and practices in this regard and to show the extent of our skeptics amongst religious and community leaders, a recent discuss on the introduction of sexuality education into secondary schools in Nigeria generated a lot of tension amongst parents and religious scholars particularly in northern parts of the country (Lawan, Nafisa, & Musa, 2010).

A Review of Menstruation Hygiene Management among School girls in Sub-Saharan Africa by Jacqueline reveal there is a consistent lack of knowledge and education among school girls regarding menstruation (Vaughn, 2013). Findings from several qualitative and quantitative studies from school girls in rural, peri-urban, and urban settings indicate that many girls receive little or no pre-menarche information, thus are sometimes misinformed by friends, relations and sometimes community in which they live on issues around menstruation; this in turn informs their own concept or beliefs regarding menstruation.

“Studies, suggest some 66 per cent of girls know nothing about menstruation until confronted with their first menstruation event, making it a negative and sometimes even traumatic experience.” The absence of knowledge transfers from older women, parents and teachers to young girls is caused by such factors as cultural taboos, discomfort in discussing the topic and lack of information (Onygebu, 2011).

Learning about hygiene during menstruation is a vital aspect of health education for adolescent girls as patterns that are developed in adolescence are likely to

persist into adult life. It was against this background that this study was planned to evaluate adolescent secondary school girls' knowledge of menstruation and menstrual hygiene, as well as their practices of menstrual hygiene. It was envisaged that findings from the study will be a pointer to some adolescence reproductive health needs in northern Nigeria, and will also provide foundation for policy makers and programme managers to make rational decision on improving adolescence reproductive health in Nigeria.

The above was upheld in the World Vision Zambia WASH report on perception and barriers to menstrual hygiene management; menstruation did not only signify the ability of adolescent to have a child, but also the transition into adulthood. The report goes further to explain that the transition for some girls is often experienced with anxiety and fear due to a lack of knowledge about menstruation and a lack of Menstrual Hygiene Management (Cara Person, 2014).

In a study on Menstruation and Menstrual Hygiene among Women and Young Females in Rural Eastern Nigeria, it was noted that though the knowledge exhibited by the respondents seem adequate but practice of drying menstrual cloth is not satisfactory showing a relationship between knowledge and practice (Onygebu, 2011)

From the above, it will be buttressed that menstruation is still regarded as something unclean or dirty in different societies. This tend to have similar undertone to believe in Africa especially Nigeria in particular. In Nigeria the reaction of young adolescence to menstruation depends solely on their level of awareness and knowledge. The manner in which adolescent girl learns about menstruation and its associated changes may have an impact on her response to the event of menarche.

### **2.3 Menstrual Hygiene Management in social cultural and religious context: Beliefs, Myths and Misconceptions**

Menstruation is a natural phenomenon which is linked to many misconceptions and myths that sometimes result to negative health implications. Hygiene practice

during menstruation is of great importance as poor hygiene practice might lead to Vaginal Transmitted Infection (VTI). Cultural beliefs about menstruation reinforce gender inequities and can have a negative impact on girls' dignity, health and education. Their psychological acceptance of menstruation can be undermined when their menstruation begins if there are no prior discussions or information available. As such, they often don't understand what is happening and are shy or stressed at school during menstruation and participate less due to shame, fatigue or pain (Patkar, May, 2001 ).

Speaking at the event of International Menstrual Hygiene Day in Uganda, the Director for Basic and Secondary Education, Dr Yusuf Nsubuga observed that the subject of menstruation was surrounded by silence and had many negative cultural and religious attitudes associated with it. "Menstruating women and girls are considered contaminated, dirty and impure. Girls in Uganda especially in rural areas suffer stigma" (WaterAid, 2013). A study done by Nkadi showed that women have knowledge of domestic and personal hygiene, but lacked the confidence to discuss how they take care of their genitals especially at that particular time they are menstruating. This buttresses the point that culturally, discussions around menses and MHM is a no go area in rural communities. In agreement to the above assertion, it was noted that the unanimous silence exhibited during focus group discussion among rural women clearly show 'culture of silence' when menstruation and genitals are pronounced. The indication of the above is that females' body and menstruation have been sites of social taboos, secrecy and shame. In other words, it is not meant to be discussed openly for any reason. Negative societal beliefs, attitudes and practices still exist on MHM in schools and communities in Nigeria (Onygebu, 2011).

The findings from a study by Jacqueline, reveal various misconceptions, myths, wrong perception and poor attitude on MHM as a result of belief and cultural practices of countries in sub-Sahara like Ethiopia, Nigeria, Ghana, Malawi to mention but few: Ethiopia and Nigeria: in many parts of Ethiopia and certain parts of Nigeria, some believe that menstruating women should isolate themselves in menstruation huts because the menstrual blood pollutes the home. In rural Nigeria,

some believe that burning menstrual cloths will have negative consequences because it is burning human blood. These consequences can cause itching all over the body, the body to change color, and the generation of internal heat in the women's body. Others believe it causes cancer and infertility. The menstrual beliefs of the Celestial Church and Islam place many restrictions on women. These beliefs include that a female should not do the following during menses: cook for her husband, go near the yam barn, touch a pepper plant, cross certain streams and village shrines, or attend church services or jumat or hold quaran. If a menstruating female is allowed to worship, she should do so only outside the church premises. Additionally, a female should not touch any *juju* (charm) during menses or it will no longer be effective. Some women from rural Igbo tribes in southeastern Nigeria avoid sweetened foods during menses, which are believed to increase both menstrual cramps and flow. Many women bathe more than usual to keep clean during menses. Most women do not participate in sexual intercourse during menses. Some women believe that menstrual blood is toxic to sperm, which can cause both the woman and a man's other wives to become infertile, some believe that albinos are children conceived during menses. Moslems in Nigeria believe that menstruating girls or women should not pray or fast. Rural Nigerian adolescents reveal their attitudes toward menstruation. While 62 percent express the positive belief that menstruation is part of a woman's life, the rest hold more negative views. Twenty percent believe that menstruation is a curse on womanhood, 13% think that God created menstruation to punish women, and 5% agree that females with menstrual problems are suffering from the sins of their forefathers. Many women report that they are not allowed to pray during menstruation, which is perceived as an unclean time (Vaughn, 2013)., (UNICEF, 2016).

In Ghana, some believe that menstruation signifies a girl is ready for a relationship. Some traditional beliefs and cultures claim that once a girl has begun menses a man can sleep with her and seek her hand in marriage. Consequently, many girls will not openly tell their parents of their menstruation because they are not ready for that type of relationship. A female child is betrothed the day she is born in some remote cultures in northern Ghana. The man monitors the girl's growth and waits for her menses to start, at menarche, she is pulled out of school to marry the man

and fulfill the betrothal agreement. Some still believe in long-standing taboos that restrict behaviors during menstruation, including that a woman in menarche is forbidden to cross a river, pass a shrine, cook, fetch water, or go to church. To enforce and perpetuate these taboos, some warn that these actions can bring about stillborn children, infertility, or disturbing visions. Many believe that menstrual blood is dirty, leading them to place restrictions on girls' behaviors. Menstruating girls are often prohibited from cooking, doing dishes, or playing games with their friends (Vaughn, 2013). . Furthermore, some Malawian adolescents believe that menstruation is the removal of bad blood. Less than half of the schoolgirls think that menstruation is a natural process. A few schoolgirls believe that the insertion of methylated spirits in their vaginas will stop excessive bleeding (Vaughn, 2013).. Consequently, Tanzania culture has a cultural initiation rituals following menarche, there is common place in the past where female is circumcised as a sign of initiation into womanhood. However, these beliefs and practices continue only in certain ethnic groups, such as the Masai and Zaromo. Consequently, schooling is linked to a decrease in these initiation rituals. Some believe that if a menstrual cloth is seen by others, the cloth owner may be cursed. Some believe that those with irregular menses suffer with the illness called *Mchango* in Swahili, literally meaning "snake" or "worm". *Mchango* is linked to many health problems and is perceived to have physical as well as spiritual origins. It is also linked to menstrual pain and light menses. Women experiencing these symptoms believe it can decrease their ability to conceive, cause a miscarriage, or turn a woman's uterus around (Vaughn, 2013)..

There are several challenges involved in the handling and disposal of menstrual waste in Kenyan schools, including social and cultural barriers, many communities in African region believe that menstrual blood should not be burnt otherwise, the concerned girl will be barren. This has led to menstruating girls being adamant to change and dispose of used pads at school. In Indonesia, before the UNICEF intervention, there lots of misconceptions around washing of hair, eating some kind of foods and washing used pads before disposing them off (UNICEF, 2015). These incredible societal norms have affected adolescent girls negatively such that they

prefer staying all day soiled. Absence of MHM or gender friendly sanitation and hygiene facilities in schools also compounds menstruating girl's problem in school.

#### **2.4 Menstrual Hygiene Management and Practice**

Poor menstrual hygiene in developing countries like Nigeria has been an inadequately recognized problem and has not received adequate attention (Senthil. j 2013), (Kansal, Singh, & Kumar, 2016; Yasmin, Manna, Mallik, Ahmed, & Paria, 2013). Menstrual Hygiene Management refers to the practice of using clean materials to absorb menstrual blood that can be changed privately, safely, hygienically, and as often as needed for the duration of the menstrual cycle (Monitoring, 2016). Menstrual Hygiene deals with the special health care needs and requirements of women during monthly menstruation or menstrual cycle (Senthil. j 2013), (Lawan et al., 2010) It could also said to be the all-inclusive articulation, awareness, information and confidence to manage menstruation with safety and dignity using safe hygiene materials together with adequate water, soap and space for changing, washing, bathing and disposal with privacy and self-worth. In agreement with the above, WSSCC reiterate that menstrual hygiene management is not the production of and distribution of sanitary pads or hygiene education only (WSSCC, 2014). Menstrual hygiene management has always been an issue that is to be dealt by women of reproductive age and adolescents in particular. The level of hygiene required during menstruation had remain an issue that need to be addressed, however few literatures were available to address this aspect of MHM. These areas of special concern include choice of the best "period protection" or feminine hygiene products; how often and when to change the feminine hygiene products; bathing care of the vulva. Provisions for good menstrual hygiene include home-made remedies like pieces of cotton cloth which are either placed on a woman's undergarment or on a homemade belt that wraps around the waist. These cloths can be washed, dried and used again. Commercially made menstrual hygiene products for women's hygiene during menstruation include pads, tampons and cups may be available but not easily accessible or affordable especially in rural communities (Lawan et al., 2010)

Yasmin et al noted that Menstrual hygiene management is a neglected aspect of public health especially reproductive health, while Water, Sanitation and Hygiene (WASH) sector in developing countries including India and its relationship with and impact on achieving many Millennium Development Goals (MDGs) is rarely acknowledged (Yasmin et al., 2013). The above was supported by Juyal et al; they stated that adolescent is transition of the girl child from girlhood to womanhood thus need for good menstrual hygiene which is important for their health, education and self-esteem.

Menstrual hygiene as stated by Rajakumari .A, is crucial in reproductive life of every woman. It is remarkable that poor menstrual hygiene contributes extremely to reproductive and urinary tract infections; therefore, adolescent girls should have sound knowledge on menstrual hygiene and improve their menstrual hygiene practice. In her study, she concluded that among the adolescent school girls in both the urban and rural areas, the knowledge on menstruation is poor and the practices are often not optimal for proper hygiene. Menstrual hygiene is an issue that needs to be addressed at all level (Rajakumari, 2015).

One of the numerous issues identified by the findings from the review of Menstruation Hygiene Management among School girls in Sub-Saharan Africa by (Vaughn, 2013) that about 95% of respondents use reusable clothes as a result of inaccessibility, inadequacy and non-affordability of sanitary pads. The study goes further to buttress that a very small proportion girls use tampons and menstrual cups while majority use other feminine products which include cotton, wool, socks, toilet paper, pages torn from school exercise books and old newspapers, pieces of sponge torn from mattresses, and additional clothing worn as menstrual protection. Multiple studies in sub-Saharan Africa show that the most commonly used feminine hygiene products are reusable cloths and sanitary pads among schoolgirls. Girls make reusable cloths using scraps from shirts, dresses, old towels, or blankets (Vaughn, 2013).

From the above literature one will see that though adolescence is a healthy period of life, many adolescents are often less informed, less experienced, less comfortable and very reluctant to discuss issues around MHM. In many parts of

the developing countries, a culture of silence surrounds the topic of menstruation and related issues; as a result, many young girls lack appropriate and sufficient information regarding menstrual hygiene. This may result in incorrect and unhealthy behaviour during their menstrual period (Onyegegbu, 2015), (Garg, Sharma, & Sahay).

Subsequently lack of appropriate WASH facilities has been identified to be affecting MHM including disposal of menstrual hygiene material, inadequate sanitation and hygiene facilities, and no disposal system for menstrual materials (Onyegegbu, 2015). In a rapid survey on managing menstrual hygiene in Kaduna state Nigeria, it was observed that only 37% of women in Kaduna State report having everything they need to manage their menstruation. This does not vary by age, indicating that across their reproductive years, the majority of women are unable to adequately meet their MHM needs (Monitoring, 2016). This will then give us an idea of what fate befalls the adolescent girls across Nigeria.

Based on the research findings and evidence from MHM research conducted by UNICEF in collaboration with Emory University, the study also revealed a strong correlation between the lack of gender-separated latrines in schools and absenteeism among girls 9–14 years old. Only a third of schools surveyed had latrines, and just 6.9 per cent of girls said that their schools had water available in a private area to wash themselves. Almost none (0.7 per cent) of the schools surveyed offered sanitation facilities that enabled girls to change their sanitary cloths while at school, nor did any of these schools make sanitary cloths available in the case of an emergency (UNICEF, 2012)

## **2.5 Enabling Factors affecting Practice of MHM among in- School adolescent girls in Nigeria**

Good menstrual hygiene is fundamental to the safety, hygiene, health, education, empowerment, and wellbeing of women and girls. It is an underdeveloped area and has potential to enhance water, sanitation and hygiene, health, protection and



education (life-skills) sectors and shape adolescent outcomes (Patkar, May, 2001).

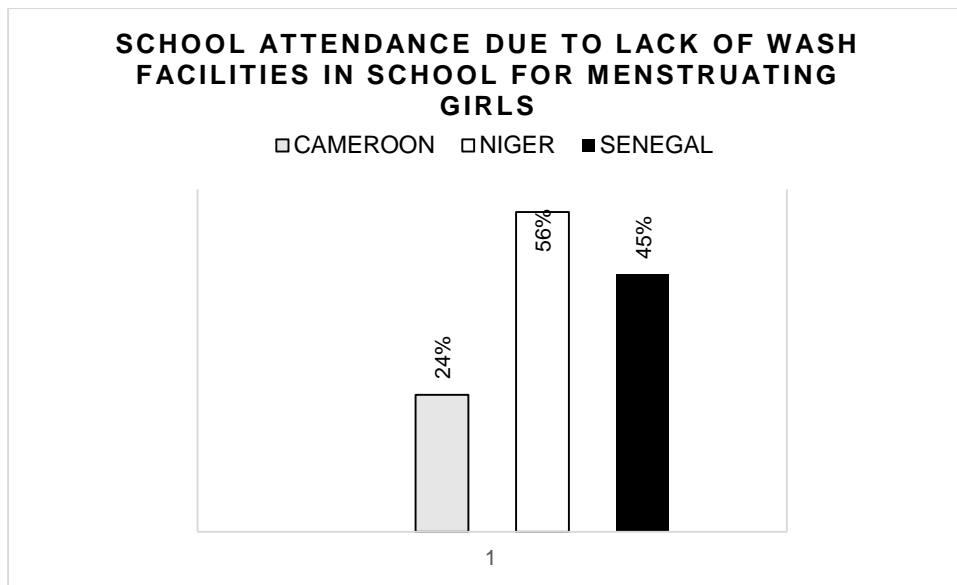
A lack of facilities and menstrual hygiene education can affect girls' welfare, well-being, school attendance, learning achievements, dignity and esteem. When water sources are more than 1 km away, water use can be restricted with important implications on women and girls' hygiene and safety (Sommer et al., 2015)). Globally there are 650 million primary school-age young people, of which 57 million of them do not attend school, this leaves 593 million who can be reached through school-based programmes including menstrual hygiene management. The data also shows that only 75 per cent of young people who started primary school reached the last grade with the figure decreasing in regions such as sub-Saharan Africa where the proportion was only 58 per cent (UNESCO, 2014). UNICEF estimates that 1 in 10 school-age African girls 'do not attend school during menstruation' while World Bank statistics highlight absences of from school of approximately 4 days every 4 weeks; partly due to the difficulties in measuring absenteeism and its causes, especially when linked to menstruation, there are differing opinions on the impact of lack of menstrual hygiene materials (UNESCO, 2014). In Nigeria, girls' access to basic education, especially in northern states, has remained low and this hampers their access to quality information regarding menstruation and menstrual hygiene management. As few as 20 per cent of women in the North West and North East of the country are literate and have attended school, however at basic education level (UNESCO, 2014)..

Poor and inadequate water, sanitation and hygiene facilities that do not offer private or safe spaces for girls at school violate these rights (UNESCO, 2014). Many myths and taboos still hover around menstruation and lead to negative approaches toward this biological occurrence and women experiencing it. After menarche, girls are faced with challenges related to management of menstruation in public places. Menstruation is a particularly salient issue because it has a more pronounced effect on the quality and enjoyment of education than do other aspects of puberty. In-school girls' knowledge on menstrual hygiene management involves a learning component as well as elements affected by the school environment and

infrastructure. These include access to menstrual hygiene materials, latrines and places to change, proper provision of disposal facilities like incinerator, safe water, and good hygiene practices like hand washing with soap. Without these, the school environment is unhealthy, gender discriminatory and inadequate for proper menstrual hygiene management (UNESCO, 2014).

(Onygebu, 2011) in her findings on Menstruation and Menstrual Hygiene among Women and Young Females in Rural Eastern Nigeria, reveal that discussions on menstruation and menstrual hygiene in the rural villages remain very sensitive, secretive and surrounded with negative attitudes of social taboos. The study by Vaughn Jacqueline reveal that Girls from urban areas and with higher socioeconomic status often use sanitary pads while girls from poor socio-economic status in peri-urban and rural areas typically utilize reusable menstrual materials. Girls from rural areas indicate that sanitary pads are inaccessible in their areas. In poor rural areas, girls even report using leaves or cow dung, or digging a hole in the ground to sit on for the duration of menses, as MHM methods (Vaughn, 2013). A documented data in United Nations Children's Fund (UNICEF) reveal that about one in ten school-age African girl didn't attend school during menstruation or dropped out at puberty due to lack of cleanliness and separate toilet facilities for female students at schools.

The above was in conformation with a study done in Kenya as quoted by Tegegne and Molla Sesay in their article on "Menstrual Hygiene Management and school absenteeism among female adolescent students in Northern Ethiopia" showed that the girls had faced difficulty to manage their menstrual periods at school due to lack of adequate privacy and sanitary facilities (Tegegne & Sisay, 2014). The same was also confirmed by Balise of WSSCC in a study carried out in Cameroon, Niger and Senegal; where menstruating school girls absent themselves from school due to lack or inadequate gender friendly WASH facilities as could be seen in the graph below.



*Figure 2: Attendance due to non-provision of WASH facilities (Nguendo-Yongsi, 2017)*

According to a publican by News Agency of Nigeria the ability of adolescent girls to manage her periods is affected by a number of other factors, including limited access and affordability of hygienic sanitary materials ((NAN), 2016), (Sommer et al., 2015). Some women and young girls in rural and urban areas in Nigeria still the use of old torn cloth and wrapper either used or unused, may be clean or dirty as menstrual absorbent as there is no cost involved. In another research carried out in Karanakata India, 17% of the participants had this opinion that menstruation is as a result of curse from god while 56.8% of them felt that menstruation poses a huge physical and psychological burden on them (Shanbhag et al., 2012). The adolescent girl face challenges in accessing products for menstrual hygiene which is an issue related not just to affordability, but also related to availability and accessibility. Adequate sanitation facilities and menstrual hygiene products are just one part of the solution against menstrual taboos; knowledge plays a critical role for adolescent girls to feel comfortable with menstruation and to gain a positive body awareness, dignity.

Patkar Archana was of the opinion that Menstruating women and girls are considered impure, unclean, unfit for the public circle and are often isolated during this period across the globe especially in developing countries. This perception is further exacerbated by the lack of hygienic disposal, hand washing and bathing facilities, menstrual hygiene absorbent materials and spaces or rooms that can help women and girls manage the menstrual discharge with dignity and safety (Patkar, May, 2001 ) . Consequently, Water, Sanitation and hygiene (WASH) facilities design in almost all the schools visited; completely ignore this very real need of women and girls to manage menstrual discharge. Hygiene programmes ‘teach’ girls and women how to be hygienic without explicitly providing materials, spaces, water and washing agents that cater to menstruation. Education authorities by ignoring provision of WASH facilities including disposal facilities and mechanisms for soiled materials, are reinforcing the stigma and shame surrounding menstruation.

## CHAPTER III

### RESEARCH METHODOLOGY

#### 3.1 Research Design

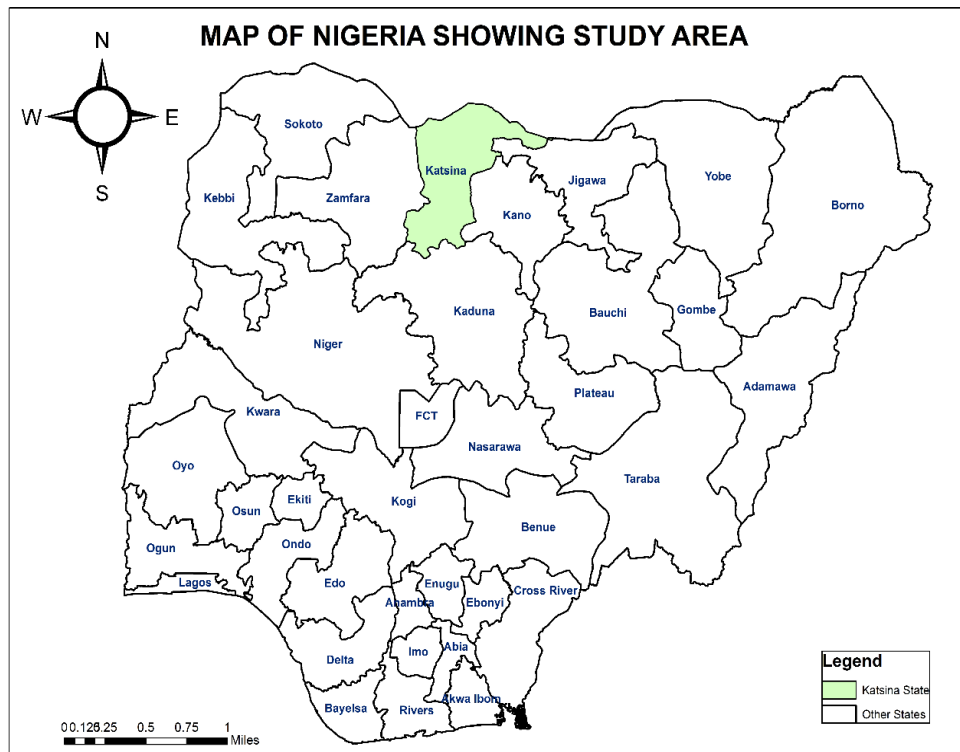
The study is a cross sectional survey carried in four Girls Junior Secondary Schools of Kankia, Kaita, Charanchi and Mashi. Quantitative approach in data collection through questionnaire responses from in-school menstruating adolescent girls across the 4 mentioned schools were used to explore knowledge on menstruation and menstrual hygiene management, myths and belief, enabling factors; and practices of menstrual hygiene management.

#### 3.2 Study Area

**Country:** Nigeria is a federated country located on the western coast of Africa and also a developing economy country with total population of 189,559,502: 95,988,686 (males), 93,570 816 (females). Nigeria has a diverse people residing in 6 geographical zones (South-East, South-South, South-West, North-Central, North-West and North-East with 3 major ethnic groups of Igbo, Hausa and Yoruba with hundreds of dialects spoken across the country, however English language is the lingua franca. Nigeria has climates ranging from arid to humid equatorial with abundant natural resources, notably large deposits of petroleum and natural gas.

**State:** Katsina state which is the study state is located in the North-west zone of Nigeria with 34 local governments with a population of 5, 802,584: 2,948,279 (Male), 2, 853,305 (Female). With reference to Department of Planning, Research, Statistics, Development Partners & ICT Katsina state, there is a total of schools as follows; 200 Government Junior secondary Schools (Mainstream) and 32 Government Girls Junior Secondary schools (Girls only). Since each LGA have one Junior Girls Secondary school, this study covers four Government Girls Junior Secondary Schools in four local government areas with distances not more than 60 kilometers from the state capital city of Katsina state.

## MAP OF NIGERIA



*Figure 3: Map of Nigeria showing study area*  
Source: Nath Idege, 2017.

## MAP OF KATSINA STATE

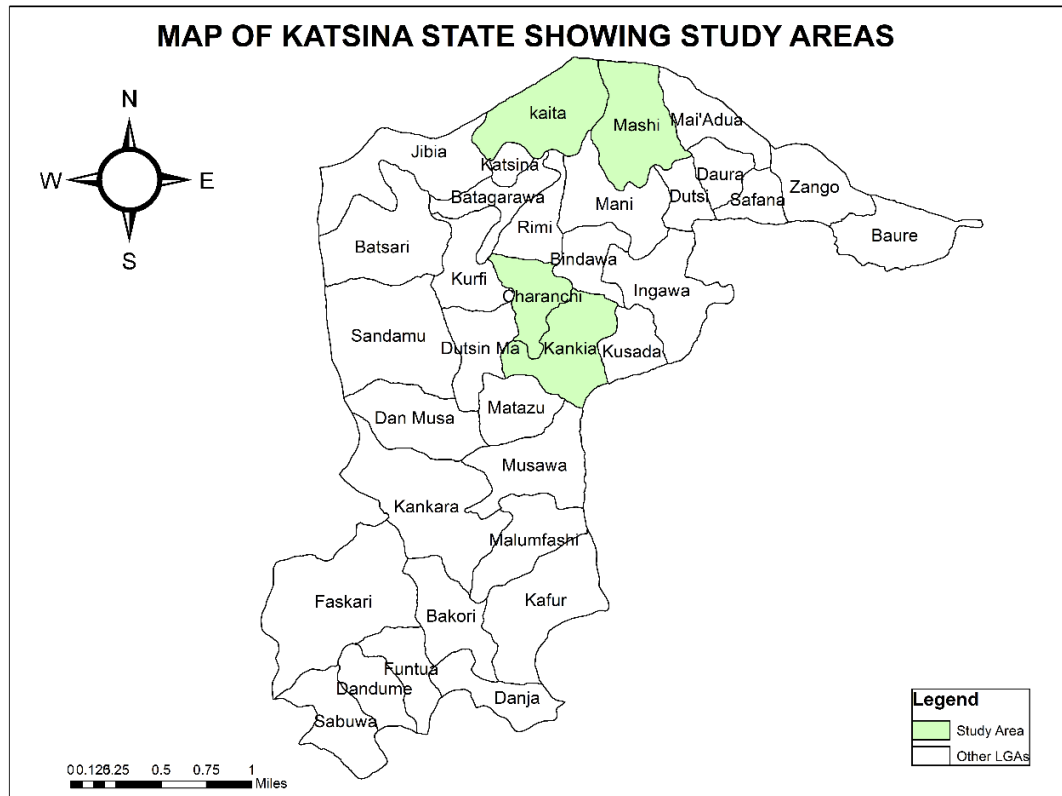


Figure 4: Map of Katsina showing the 4 LGAs

Source: Nath Idege, 2017.

### 3.3 Study Population

This study was carried out in 4 government girls' junior secondary schools in 4 LGAs of Katsina state with total population of 3478 (Three Thousand, Four Hundred and Seventy-Eight).

### 3.4 Sample Size

This research used Taro Yamane formula to calculate sample size as below.

$$n = \frac{N}{1 + Ne^2}$$

$$\text{OR } n = \frac{N}{k + N(e)^2}$$

N = population of study

n = sample size

e = sample error or degree of error expected (p-value 0.05 or 95%)

K= Constant (1)

$$n = \frac{3478}{1 + (3478)(0.05)^2}$$

$$= 358.7 \text{ Approx. } 359 \text{ adolescents}$$

Plus 10% for missing data = 394.9 Approx. 395 adolescents

### 3.5 Sampling Method and Technique

Mixed sampling techniques and method of purposive and convenience was used owing to the nature of the study.

- a) At the school level, homogeneous purposive Sampling method was used to get the targeted menstruating in-school adolescent girls. A list of all government junior secondary schools was obtained from Katsina State Universal Basic Education Board (SUBEB). This was then narrowed down to Government Girls Junior Secondary Schools (JS 1-3) for the purpose of getting enough population of menstruating adolescent girls that was sampled. The selected schools are as in the table below;

Table 1: showing the four (4) schools sampled according to their population

S/N	NAME OF SCHOOL	TOTAL POPULATION
1.	Government Girls Technical College, Junior section Charanchi, Charanchi LGA	555
2.	Government Girls Junior Secondary School, Dutsin-Safe, Kaita LGA	168
3.	Government Girls Junior Secondary School, Kankia, Kankia LGA	1587



4.	Government Girls Junior Secondary School Mashi, Mashi LGA	1168
	Grand Total	3478

The proportion of population that was sampled in each school was determined by multiplying the school population by the sample size and divided it by the study population thus:

1. Government Girls Technical College, Junior Section, Charanchi, Charanchi LGA.

$$\frac{555}{3478} \times \frac{395}{1} = 63$$

- 1 Government Girls Junior Secondary School, Dutsin Safe, Kaita LGA

$$\frac{168}{3478} \times \frac{395}{1} = 19$$

3. Government Junior Secondary School, Kankia, Kankia LGA

$$\frac{1587}{3478} \times \frac{395}{1} = 180$$

4. Government Girls Junior Secondary School, Mashi, Mashi LGA.

$$\frac{1168}{3478} \times \frac{39}{1} = 132.6 \text{ Approx. } 133$$

Consequently, the total of 395 adolescent menstruating girls were sampled in proportionate to sample size as follows: Government Girls Technical College, Junior section Charanchi in Charanchi LGA (63), Government Girls Junior Secondary School, Dutsin-Safe in Kaita LGA (19), Government Girls Junior Secondary School, Kankia in Kankia LGA (180) and Government Girls Junior Secondary School Mashi in Mashi LGA (133).

- b) At the class level, convenience sampling was used to get enough volunteered menstruating participants; this was as a result of shyness by most girls and some declined on religion

### 3.6 Selection Criteria

**The selection criteria of the respondents are as follows:**

**Inclusion criteria:** Female menstruating in-school adolescent between the ages of 10 to 19 years that are students of the 4 identified schools and are in JS 1-3 that are willing to participate in the study.

**Exclusion criteria:** adolescent menstruating girls that are not regular at school attendance, physically challenged menstruating adolescent girls were not considered in this study.

### 3.7 Measurement Tool

The self-report questionnaire was adapted and developed based on previous published studies on menstrual hygiene management in Indonesia and menstrual Hygiene management, behaviour and practices in Senegal (UNICEF, 2015; WSSCC, 2014) Wolega University

The questionnaire consists of five parts; (i) Socio-demographic characteristics; (ii) Knowledge on menstruation and Menstrual Hygiene management; (iii a) Beliefs on menstruation (ii b) Myths and Misconceptions about menstruation; (Geethu et al.) Enabling Factors for MHM management and (v) Practice of MHM.

Data and responses from participants were collected using structured questionnaire as follows:

#### (i) Socio-demographic characteristics

There are 14 items in this part which was structured to capture that of the respondents and the parent, and they consist of age, ethnicity, class in school, whom they live with, the parent's education background, the parent's occupation, family income level, level of education, age at menarche, duration and cycle of menses, religion, do they have television and availability of monthly upkeep money.

#### (ii) Knowledge on MHM and Menstruation

This section focuses on the basic knowledge on MHM. There are nine (9) items in this part. Each correct response was awarded a score of 1. The maximum possible score was 9 and total score was then compared with Bloom's (1968) cut off point

and were divided into three levels; (i) low level of knowledge (<60%); (ii) moderate level of knowledge (60 – 79%); and (iii) high level of knowledge ( $\geq 80\%$ ).

Table 2: Categorization of Knowledge level

Level of knowledge	Cut off point	Scores
Low	<60%	0-3
Moderate	60% - 79%	4-6
High	$\geq 80\%$	7-9

(iii a) **Belief:** In this part, there are 7 questions which was based on the cultural and religious belief of the people thus it was aimed to find out existing community culture or religion which may affect either positively or negatively the practice of menstrual hygiene. Each correct response of “Agreed” to each question was given one (1) as a score while the wrong answers of “Disagreed” attracted zero (0)

(iii b) **Myths and Misconceptions about MHM:** There are 7 items in this section which was based on individual’s wrong or false belief on things that are not actual. It was aimed to find out existing myths and misconceptions about menstruation. “Yes” responses were given a score of 1 and “No” responses were given a score of 0. (Geethu et al., 2017)

(iv) **MHM Practice:** There are 15 items in this part and it were designed to find out the level of practice of MHM among the respondents. Correct responses were given a score of one (1) and incorrect answers were given zero (0).

Total practice scores were categorized into three levels using mean cut off point

Table 3: Categorization of Practice

Practice Level	Cut-off point	Scores
Low	<-1SD	0-6
Moderate	$-1SD \leq x < 1SD$	7-9
High	$1SD \leq$	10-15

(v) **Enabling Factors for Menstrual Hygiene Management**

This contains 9 question items, however, frequencies of responses were done to ascertain the percentage of factors which if present or absent will affect level of hygiene practice of the girls

### 3.8 Reliability and Validity Test

The questionnaires were reviewed and validated by 2 experienced academic researchers Mrs. Lizzy Jeiyol (Researcher/Lecturer, Benue State University, Makurdi, Benue state) and Ms. Jamila Sani Kankia (Researcher, Federal University Dutsinma, Katsina state) by checking the content, editing and making input to the questionnaire after having piloted in 2 schools respectively in Katsina LGA and Batagarawa LGA, Katsina.

The reliability test was done on beliefs, myths and misconception of menstruation variables using Alpha Coefficient formula by Cronbach which show 0.734 thus can be generalized that all the variables measure of internal consistency is closely related as could be seen in the summary table below.

Table 4: showing reliability test using Cronbach

#### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.734	.740	15

### 3.9 Questionnaire Translation

The English version of the questionnaire was translated to Hausa which is the local language of the people by a renowned local language translator Mr. Abubakar Abdullahi the public relation officer (PRO) of Katsina state Radio. The translated version was pre-viewed by Dr. Ibrahim Shehu and Adamu Samaila for content check and accuracy of words translated. The Hausa translated questioner was later

translated to English by Jamila Sani Kankia whom have been a researcher and academia for consistency and content of the questionnaire.

### **3.10 Data Collection**

Collection of data was done by proxy (assistant research team). Eight data collectors were engaged and 2 team lead in the person of Jamila Sani Kankia and Theresa Tsav that ensured questionnaires were filled correctly and each team collected and submitted to the team leads in an envelope. Prior to data collection, there was a day orientation and training of the 8 field data collectors who were all females, this was anchored by the researcher herself with the support of the two research assistants. The features of the orientation were basically on the objectives of the study, content clarity and research ethics.

The list of schools was given by the state universal education board and focal schools were chosen collectively (SUBEB and researcher). The researcher got approval from various education authorities, copies were made available to the team leads for easy access to the school authorities (Head teachers or principals). Due to sensitivity of the study topic, the students felt so shy to participate, however, with the assistance of the teachers and ice breaking exercise, the student felt more relaxed with the team. Finally, filled questionnaires were collected from the students, packaged and submitted to the team lead.

### **3.11 Data Analysis**

Collected data were cleaned, coded and ran using SPSS version 16.0. The statistical analysis was done as follows:

#### **3.11.1 Univariate Analysis**

These are used to describe the distribution of one variables. Descriptive statistics; frequencies and percentages were used on continuous variables such as socio-demographic variables.

#### **3.11.2 Bivariate Analysis**

Cross tabulation test was done to establish the significance between all the variables while Chi-square square and Fisher Exact Test was used to find out

whether there is a relationship between categorical (nominal or ordinal) variables and level of MHM practice.

### **3.12 Ethical Consideration**

Approval from the Katsina State Health Research Ethics Committee (HREC) of the Ministry of Health was obtained with the ethics assigned approval number MOH/ADM/SUB/1152/1/143 before proceeding with study.

Formal written permission was also obtained from two education authorizing bodies; Katsina State Science and Technical Education Board and Ministry of Education in respect of the four schools selected for the study. The school heads, assigned teachers and students were sensitized respectively on the purpose of the study. Ice breaking and rapport was built with menstruating adolescent girls in each school and their verbal and written consents was also obtained before questionnaires were administered. Confidentiality of responses given by participants were maintained by excluding any aspect of personal identification tag from the questionnaires. The pre-designed, pretested and structured questionnaire containing related variables; knowledge, belief and practice to address the research questions was administered under the guidance of research team and assigned teachers

## CHAPTER IV

### RESULTS

This study was aimed to assess the knowledge, belief and practice on menstrual hygiene management among menstruating in-school girls of ages between 10-19 years (adolescence) in Katsina state Nigeria. It also looked at the factors or variables that may affect positively or negatively the practice of good menstrual hygiene and possible relationship that exist between independent variables and practice of good Menstrual Hygiene Management.

In light of the above, self-report was conducted at the field for 395 participants among the four Junior Secondary Schools that participated in this study. The data was analyzed by SPSS version 16.0.

This chapter therefore presents the findings of the study, the outputs and results obtained from the research scheduled Schools below

Table 5: showing the number and percent of respondents per school

School	No.	%
Govt Girls JSS, Kankia	180	45.6
Govt Girls Secondary Sch, Mashi	133	33.7
Govt Girls Technical.College. C, Charanchi	63	15.9
Govt Girls Junior Sec Sch, Dutsin Safe, Kaita	19	4.8
Total	395	100

#### 4.1 The prevalence (percentage) of practice on MHM

According to this study and data below in table 4, practice level was categorized into three levels of Low, Moderate and high. As could be deduced from the table, there are 83 (21%) respondents that was found to have low practice, 271 (68.6%) of the respondents were at moderate level while 41 (10.4%) of the respondent have high level of practice.

Table 6: The level of practice of 395 participants

Practice level	Score	No.	%
Low	0-6	83	21.0
Moderate	7-8	271	68.6
High	10-15	41	10.4
<b>Total</b>		<b>395</b>	<b>100</b>

#### 4.2 Socio-demographic characteristics

In this study, four government girls' junior secondary schools were sampled according to the proportion of the population. Among the participants, girls within the modal age of 14-15 and 12-13 were of the highest number; 199 (50.4%) and 108 (27.3%) respectively. Majority of the respondents were from JS one and 3 while a handful of them are from JS 2. Consequently, as much as 383 (97%) and 882 (96%) were of Moslem religion and of Hausa ethnic group in Nigeria. The data in the table shows that 316 (80%) of the respondents live with their parents and few (55:13.9%) were also found to live with their mothers alone. The level of education of the fathers of the respondents were majorly of literacy level of reading and writing in any language as little population of 28.9% have high school diploma. However, the mothers tend to be more in level of their education as 33.9% of them have diploma from high school. The fathers 240(60.8%) of the respondents are mainly of government employment while majority of the mothers 148 (37.5%) have their occupation as house wife. Furthermore, 96.5 percent of the respondents



accepted of having TV/Radio in their houses, 42.6 percent followed by 23.6% of the respondents indicated they had their menarche between 14-16 and 11-13 years respectively while 16.5% could not recall their age at menarche. Meanwhile as many as 36.7% of the respondents say that their family monthly income is less than ₦10,000 (27\$, 285.7Thbt) whereas 20.3% do not actually know the amount of income that accrued to the family. The astonishing data here is that 150 (38%) of the respondents says their length of menses is above 7 days, 133(33.7%), 133 (33.7%) 3-4 days' duration and 101(25.6%) 5-7 days.

Table 7: Socio-demographic characteristics of 395 participants of the four Junior Secondary Schools

	No.	%
<b>School name</b>		
Govt Girls JSS, Kankia	180	45.6
Govt Girls JSS, Mashi	133	33.7
Govt Girls Technical.College, Charanchi, Junior Section	63	15.9
Govt Girls JSS, Dutsin Safe	19	4.8
<b>Age</b>		
10 - 13Yrs	125	31.6
14- 15Yrs	199	50.4
16 - 19Yrs	71	18
<b>Class</b>		
Junior Secondary School 1	101	25.6
Junior Secondary Sec School 2	82	20.8
Junior Secondary School 3	212	53.7
<b>Ethnicity</b>		
Hausa	383	97
Fulani	8	2.0
Igbo	1	0.3
Yoruba	3	0.8
<b>Religion</b>		
Moslem	382	96.7
Christian	8	2.0

Traditionalist	4	1.0
Orthodox	1	0.3
Present living with		
My mother and father	316	80.0
My mother only	55	13.9
My father only	13	3.3
Step Mother and my father	8	2.0
Step farther and my mother	3	0.8
Father education		
Illiterate ( cannot read & write)	19	4.8
Literate ( able to read & write)	161	40.8
Pry Sch 1- 3 grade	18	4.6
Pry Sch 4 - 6 grade	7	1.8
Junior Sec Sch 1 – 3	57	14.4
Senior Sec Sch 1 – 3	19	4.8
College Diploma and Above	114	28.9
Mother educational		
Illiterate ( cannot read & write)	29	7.3
Literate ( able to read & write)	114	28.9
Pry Sch 1- 3 grade	18	4.6
Pry Sch 4 - 6 grade	11	2.8
Junior Sec Sch 1 – 3	24	6.1
Senior Sec Sch 1 – 3	65	16.5
College Diploma and Above	134	33.9
Occupation of Father		
Farmer	64	16.2
Government Employee	240	60.8
Merchant/Trade	52	13.2
Private Organization Employee	13	3.3
Daily Laborer	26	6.6
Occupation of Mother		
Farmer	31	7.8
Government Employee	89	22.5
Merchant/Trade	100	25.3

Private	Organization		
Employee		14	3.5
Daily Laborer		13	3.3
House wife Only		148	37.5
Pocket money			
Yes		363	91.9
No		32	8.1
Have a TV or / and Radio			
Yes		381	96.5
No		14	3.5
Age at first menses/period			
10 - 13Yrs		153	38.7
14 - 15Yrs		169	42.8
16 - 19Yrs		8	2.0
Do not know		65	16.5
Family Monthly income			
Less than 10,000		145	36.7
10,000 - 50,000		41	10.4
51,000 - 100,000		28	7.1
101,000 - 150,000		42	10.6
151,000 - 200,000		59	14.9
No idea		80	20.3
length of your menses/ period			
1 - 2 Days		11	2.8
3 - 4 Days		133	33.7
5 - 7 Days		101	25.6
Above 7Days		150	38.0

#### 4.3 Knowledge on MHM

The table below reflects the categories of knowledge into three (3) levels of low knowledge if the score is below 60%, moderate knowledge if the score is between the range of 60-79% and high knowledge if the score is above 80%. From the table, the data shows; 225 (57%) have low knowledge, 157(39.7%) have moderate knowledge and 13 (3.3%) have high knowledge regarding menstruation and its hygiene management.

Table 8: Knowledge of 395 Participants

Knowledge Level	No.	%
Low (<60%)	225	57.0
Moderate (60% - 79%)	157	39.7
High ( $\geq$ 80%)	13	3.3
	<b>395</b>	<b>100</b>

The table below shows the response items by respondents concerning their knowledge on menstruation. Among the respondents, 158(40%) knew that menses is physiological, others are of the opinion that it is cause by god and some said is pathological, however, as much as 60% of the respondent did not have the basic knowledge on the what menstruation is. Concerning, the channel through which menses flows, 90.4% did not know as well as 61% did not know the cause of menses. 31.9% knew the intervals between one menses and the next whereas 58.1% did not know. In regards to duration, age at menarche, colour, smell and unhygienic nature of menses, majority actually show they know about them as none of these mentioned item have less than 50%.

Table 9: Parameters for assessing Knowledge of the respondents

	Correct Answers	
	No.	%
Menstruation is Physiological.	158	40.0
The cause of Menstruation is Hormone.	154	39.0
Menstrual blood is releases from the Uterus.	38	9.6
The age most girls usually experience first Menses is between 10 -15.	290	73.4
The duration of normal Menstruation, in normal person is 2 – 7 days.	281	71.1

The interval between two Menstrual cycles is between 24 to 28 days.	126	31.9
Menstrual blood have foul odor during Menstruation, No	282	71.4
Menstrual blood is unhygienic, No	214	54.2
Menses have colour, Yes	326	82.5

#### 4.4 Belief on MHM

The table below shows the responses of 395 participants on existing beliefs according to their culture and religion about menstruation which in turn may positively or negatively impacts on the level of practice of menstrual hygiene management. The data in the table below indicates that higher number of not less than 216 and 54% of the respondents agree there are existing beliefs which have cultural and religious undertone as against 179 (45.3%) that disagree such belief exists.

Table 10: The 395 respondents on their Belief regarding menstruation and its management.

	Agree	
	No.	%
Menstruation girls are forced to practice restrictions during menses	306	77.5
Menstruation is a sign of impurity of the girl or woman	278	70.4
Menstruating girl or woman is not allowed to fast	243	61.5
It is not allowed for menstruating girl or woman to pray	216	54.7
Menstruating women or girls are restricted from entering Mosque	223	56.5
It is a forbidden for a menstruating girl or women to touch or hold holy Quran	216	54.7
Girls or women undergoes purification after menses	349	88.4

#### 4.5. Myths and Misconception regarding menstruation

Myths and misconception as stated in the operational definition is the individuals wrong or false belief on things that does not exist in realities however, it exists in their subconscious. From the table 8 below, it could be seen that as high as 210(53.2%) respondent out of 395 agreed as against 185 (46.8%) participants that disagreed there are myths about menstruation.

Table 11: Features of Myth/Misconceptions on menstruation and its practice.

	Agree	
	No.	%
It is a taboo for girls or women to have sex during menstruation	221	55.9
It is generally believed that immediate disposal of used pads are used for rituals which leads to barrenness	254	64.3
Spreading or drying washed re-usable pad or cloths for menses under the sun is a taboo	224	56.7
Do menstruating girls restricted from interacting with men?	210	53.2
Albinos are children conceived during Menstruation	218	55.2
Consumption of sugary foods lead to heavy flow during menses	341	86.3
Sexual intercourse relieves menstrual cramp	223	56.5

#### 4.6 Enabling Factors associated with MHM in school and house environment

As stated in the operational definition section, enabling factors are those factors that facilitates or supports the menstruating girl child to properly, adequately and timely manage menses with confidence and dignity. The availability of these facilities will boost the girl child's confidence in handling menstrual flow without difficulty. The data in the table below shows the various facilities and materials

that if in place will influence in a great way the level of good hygiene practice by the respondents.

Table 12: Enabling factors influencing menstrual hygiene management in school and home environment.

		No.	%
Preferred sanitary material	Tissue/ Toilet roll	56	14.2
	Cloth	59	14.9
	Sanitary		
	Towel/Pad	280	70.9
Availability of commercial menstrual materials within your school or community	Yes	247	62.5
	No		
Average of money spent more than 500 naira in a month on menstrual material?	Yes	53	13.4
	No		
Provision of menstrual materials for the adolescent girl	Self	350	88.6
	School		
	Authorities	12	3
	Father and Mother	33	8.4
Access to clean toilet at all times	Yes	367	92.9
	No	28	7.1
Type of school toilet	Water Cistern (WC)	61	15.4
	Pour flush	58	14.7
	Ventilated		
	Improved Pit		
	Latrine (VIP)	77	19.5
	Local Pit Latrine	199	50.4
Type of toilet in the homes	Water Cistern (WC)	58	14.7
	Pour flush	157	39.7
	Ventilated		
	Improved Pit		
	Latrine (VIP)	43	10.9
	Local Pit Latrine	135	34.2
	None	2	0.5
Type of water facility at school	Motorized		
	Borehole (Patavegar, Kapilashrami,	57	14.4

	Rasheed, & Pathak)		
	Hand Pump		
	Borehole (HPBH)	291	73.7
	Hand Dug Open Well	30	7.6
	Improved Hand Dug Well	11	2.8
	None	6	1.5
	Motorized Borehole (Patavegar et al.)	118	29.9
Type of water facility at home	Hand Pump Borehole (HPBH)	128	32.4
	Hand Dug Open Well	79	20
	Improved Hand Dug Well	30	7.6
	None	40	10.1

#### 4.7 Practice on MHM

The table below shows the result regarding number and percentage of respondents concerning menstrual hygiene management and practice by each items in the questionnaire as follows: 91.4% prefers use of sanitary pad than other materials which could be used in managing menses. Consequently, 62.3% are using commercially made sanitary pad, 10.8% and 26.9% respectively are using tissues and cloths respectively. Out of those using cloths as pad, 86% do wash their rags with water and soap, of which 35% dries under the sun while a huge other do dry them under the bed or inside the room. As few as (64)16,2% are changing their sanitary towels twice or more, the rest do change once a day, 8.9% disposes used pad in dustbin while others dispose in open filed or latrines, however, as much as 60% wraps their used pads before disposing. Among the respondents, 47.8% changes pant more than once, while as few as 7.8% bath more than once. The amazing thing here is that they are so conscious of their genitalia hence, 88.4% and 61% washes their genitaila and with water and soap. Handwashing seem to be the most practiced among the respondents thus 92.2% washes their hand after handling pads and 85.2% uses water and soap for hand washing



**Table 13: Parameter used for assessing menstrual hygiene practice**

	Yes	
	No.	%
Using absorbent material during menstrual period	361	91.4
Commercially made sanitary pads are used during menses	225	62.3
Toilet Roll / Tissue Paper are being used during Menstruation	39	10.8.
Cloths or rags are used during Menstruation	97	26.9
If cloth are used as pad, the cleaning is by washing with water and soap	66	68.0
Washed cloths are dried under the sunlight	34	35.0
Sanitary towels should be changed tice or more daily change the cloth/pad in a day?	64	16.2
Disposal of used pad should be in dustbin	35	8.9
Used pads should be wrapped with plastic bag before disposal	237	60
Panty should be changed twice or more per day	189	47.8
Bath during Menses should be twice or more daily	31	7.8
Cleaning of genitalia during menstruation is important	349	88.4
Genitalia should be cleaned with water and soap	213	61.0
Washing of hands after changing the pad is important	364	92.2
Hands should be washed with soap and water after changing of pads	310	85.2

#### 4.8.0 Factors or independent variables associated with MHM practice

For the findings to determine if there is any association that existed between the independent categorical variables and practice of MHM, cross tab Pearson chi-square was used.

##### 4.8.1 Association between socio demography characteristics and practice of MHM

In this section and from the data in the table 14 below, out of the fourteen questions on socio-demography of the respondents regarding their family support and their personal experiences regarding menstruation, four responses showed that there is an association between the respondent's ethnicity and the level of practice with P-value < 0.001, Fathers and mothers' occupation with <0.002 and <0.006 respectively, the length of menstruation also shows association with practice of MHM by <0.017.

*Table 14: Association between Socio-demography and Practice*

	Total (n)	Practice level						P-value <sup>1</sup>
		Low		Med		High		
		No.	%	No.	%	No.	%	
	395							
Age								0.13
10--13	125	26	20.8	93	74.4	6	4.8	
14-15	199	40	20.1	132	66.3	27	3.6	
16-19	71	17	23.9	46	64.8	8	11.3	
Class								0.09
Junior Sec School 1	101	19	18.8	75	74.3	7	6.9	
Junior Sec School 2	82	16	19.5	51	62.2	15	18.3	
Junior Sec School 3	212	48	22.6	145	68.4	19	9.0	
Ethnicity								<0.01 <sup>a</sup>
Hausa	383	82	21.4	266	69.5	35	9.1	
Fulani	8	0	0.0	4	50.0	4	50.0	
Igbo	1	1	100	0	0.0	0	0.0	
Yoruba	3	0	0.0	1	33.3	2	66.7	
Religion								0.47 <sup>a</sup>

	Moslem	382	80	20.9	263	68.8	39	10.2	
	Christian	8	1	12.5	5	62.5	2	25.0	
	Traditional ist	2	2	50.0	2	50.0	0	0.0	
	Orthodox	1	0	0.0	1	100.0	0	0.0	
	lives with at present								0.27 <sup>a</sup>
	My mother and father	316	71	22.5	217	68.7	28	8.9	
	My mother only	55	7	12.7	38	69.1	10	18.2	
	My father only	13	3	23.1	9	69.2	1	7.7	
	Step Mother&m y father	8	1	12.5	5	62.5	2	25.0	
	Step father&my mother	3	1	33.3	2	66.7	0	0.0	
	Father's educational level								0.20 <sup>a</sup>
	Illiterate ( cannot read & write)	19	6	31.6	13	68.4	0	0.0	
	Literate ( able to read & write)	161	37	23.0	106	65.8	18	11.2	
	Pry Sch 1- 3 grade	18	2	11.1	15	83.3	1	5.6	
	Pry Sch 4 - 6 grade	7	0	0.0	6	85.7	1	14.3	
	Junior Sec Sch 1 - 3	57	6	10.5	46	80.7	5	8.8	
	Senior Sec Sch 1 - 3	19	7	36.8	11	57.9	1	5.3	
	College Diploma and Above	114	25	21.9	74	64.9	15	13.2	
	Mother's educational level								0.31 <sup>a</sup>
	Illiterate	29	4	13.8	24	82.8	1	3.4	
	Literate	114	28	24.6	70	61.4	16	14.0	
	Pry Sch 1- 3 grade	18	5	27.8	13	72.2	0	0.0	
	Pry Sch 4 - 6 grade	11	2	18.2	9	81.8	0	0.0	

	Junior Sec								
	Sch 1 - 3	24	5	20.8	18	75.0	1	4.2	
	Senior Sec								
	Sch 1 - 3	65	17	26.2	39	60.0	9	13.8	
	College								
	Diploma-								
	Above	134	22	16.4	98	73.1	14	10.4	
Occupation of Father									<b>&lt;0.01</b>
	Farmer	64	16	25.0	45	70.3	3	4.7	
	Government								
	Employee	240	51	21.2	165	68.8	24	10.0	
	Merchant/ Trade	52	9	17.3	40	76.9	3	5.8	
	Private Organization								
	Employee	13	3	23.1	9	69.2	1	7.7	
	Daily Labourer	26	4	15.4	12	46.2	10	38.5	
Occupation of Mother									<b>&lt;0.01<sup>a</sup></b>
	Farmer	31	6	19.4	24	77.4	1	3.2	
	Government								
	Employee	89	14	15.7	67	75.3	8	9.0	
	Merchant/ Trade	100	21	21.0	75	75.0	4	4.0	
	Private organization								
	Employee	14	2	14.3	9	64.3	3	21.4	
	Daily labourer	13	5	38.5	4	30.8	4	30.8	
	House wife Only	148	35	23.6	92	62.2	21	14.2	
permanent pocket money									0.35
	Yes	363	75	20.7	248	68.3	40	11.0	
	No	32	8	25.0	23	71.9	1	3.1	
Have a TV or / and Radio									0.14 <sup>a</sup>
		381	77	20.2	264	69.3	40	10.5	
		14	6	42.9	7	50.0	1	7.1	
Age at first menses/period									0.6
	8 - 10 Yrs.	52	18	34.6	29	55.8	5	9.6	1

11 - 13 Yrs.	101	12	11.9	81	80.2	8	7.9
14 - 16Yrs	169	34	20.1	117	69.2	18	10.7
17 - 19Yrs	8	2	25.0	5	62.5	1	12.5
Don't know	65	17	26.2	39	60.0	9	13.8
Monthly income of family							0.32
Less than 10,000	145	28	19.3	105	72.4	12	8.3
10,000 - 50,000	41	13	31.7	26	63.4	2	4.9
51,000 - 100,000	28	7	25.0	19	67.9	2	7.1
101,000 - 150,000	42	4	9.5	33	78.6	5	11.9
151,000 - 200,000	59	13	22.0	37	62.7	9	15.3
No idea	80	18	22.5	51	63.8	11	13.8
Length of menses/ period							0.02 <sup>a</sup>
1 - 2 Days	11	5	45.5	6	54.5	0	0.0
3 - 4 Days	133	23	17.3	93	69.9	17	12.8
5 - 7 Days	101	13	12.9	75	74.3	13	12.9
Above 7Days	150	42	28.0	97	64.7	11	7.3

1.P-value by  $\chi^2$   
 a. P-value from Fisher Exact Test

#### 4.8.2 Association between knowledge and practice of MHM by the respondents.

From the table below, it is established by the P values or level of significance that there is association that exist between knowledge and practice of menstrual hygiene management by <0.026.

*Table 15: Relationship between knowledge and practices*

	Total (n)	Practice level						P- value <sup>1</sup>
		Low		Medium		High		
		No.	%	No.	%	No.	%	
	395							
Knowledge level								0.026
Low	225	49	21.8	145	64.4	31	13.8	
Moderate/High	170	34	20.0	126	74.1	10	5.9	

1. P-value by x2

#### 4.8.3. Association between beliefs and practice

The data shows that there is a relationship or an association between the belief on restrictions placed on menstruating women with the level of hygiene practice they exhibit during menstruation by <0.000 while other belief did not hold water.

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Table 16: Association between beliefs and practices

	Total (n)	Practice level						P- value <sup>1</sup>
		Low		Medium		High		
		No.	%	No.	%	No.	%	
	395							

Menstruation  
girls are forced  
to practice  
restrictions  
during  
menses?

**<0.01**

Disagree	89	22	24.7	48	53.9	19	21.3	
Agree	306	61	19.9	223	72.9	22	7.2	
Menstruation is a sign of impurity of the girl or woman								0.335
Disagree	117	30	25.6	75	64.1	12	10.3	
Agree	278	53	19.1	196	70.5	29	10.4	
Menstruating girl or woman is not allowed to fast								0.093
Disagree	152	37	24.3	105	69.1	10	6.6	
Agree	243	46	18.9	166	68.3	31	12.8	
It is not allowed for menstruating girl or woman to pray								0.815
Disagree	179	39	21.8	120	67.0	20	11.2	
Agree	216	44	20.4	151	69.9	21	9.7	
Menstruating women or girls are restricted from entering Mosque								0.680
Disagree	172	39	22.7	114	66.3	19	11.0	
Agree	223	44	19.7	157	70.4	22	9.9	
It is a forbidden for a menstruating girl or women to touch or hold holy Quran								0.725
Disagree	179	37	20.7	121	67.6	21	11.7	
Agree	216	46	21.3	150	69.4	20	9.3	
Girls or women undergoes								0.399

purification  
after  
menses

Disagree	46	11	23.9	28	60.0	7	15.2
Agree	349	72	20.6	243	69.6	34	9.7

1. P-value by x2

#### 4.8.4. Association between myths/misconceptions and practice of menstrual hygiene management.

Data analysis using the cross tabulation chi-square shows that  $<0.009$  p-value regarding the misconception that menstruating women are restricted from interacting with men or boy counterpart.

Table 17: Association between myths/misconceptions and level of practice

	Total (n)	Practice level				P-value <sup>1</sup>	
		Low	Medium	High	No.	%	
		No.	%	No.			%
395							
It is a taboo for girls or women to have sex during menstruation							
							0.221
Disagree	174	36	20.7	125	71.8	13	7.5
Agree	221	47	21.3	146	66.1	28	12.7
It is generally believed that immediate disposal of used pads are used for rituals which leads to barrenness							
							0.139
Disagree	141	35	24.8	88	62.4	18	12.8
Agree	254	48	83	183	72.0	23	9.1
Spreading or drying washed re-usable pad or cloths for menses under the sun is a taboo							
							0.864
Disagree	171	37	21.6	115	67.3	19	11.1



Agree	224	46	20.5	156	69.6	22	9.8	
Menstruating girls are restricted from interacting with men								<0.01
Disagree	185	39	21.1	136	73.5	10	5.4	
Agree	210	44	21.0	135	64.3	31	14.8	
Albinos are children conceived during Menstruation								0.779
Disagree	177	35	19.8	122	68.9	20	11.3	
Agree	218	48	22.0	149	68.3	21	9.6	
Consumption of sugary foods lead to heavy flow during menses								0.47
Disagree	54	18	33.3	30	55.6	6	11.1	
Agree	341	65	19.1	241	70.7	35	10.3	
Sexual intercourse relieves menstrual cramp								0.294
Disagree	172	40	23.3	111	64.5	21	12.2	
Agree	223	43	19.3	160	71.7	20	9.0	

1.P-value by x2

#### 4.8.5. Association between enabling factors and practice of menstrual hygiene management

The result emanated from the analysis in the table 14 below reveals association that exist with various enabling factors and practice of menstrual hygiene management. Most girls prefer to use commercially produced sanitary pad <0.003, most girls confirm spending less money to procure sanitary pad on monthly basis P=0.033 meaning it is affordable to them, majority <0.028 indicated that they provided sanitary pad by themselves since their parents gives them pocket money on monthly basis, majority of the respondents acclaimed they have pit latrines and other types of latrines in the school thus n association with level of practice of

MHM at <0.000, the respondents also confirmed that they have access to clean latrines or toilets and this shows an association between level of MHM practice by <0.000, while type of water they access at home and school reveal association of P=0.013 and <0.01 respectively which in turn affects level of MHM practice.

Table 18: Association between enabling factors and level of practice

	Total (n)	Practice level						P- value <sup>1</sup>
		Low		Medium		High		
		No.	%	No.	%	No.	%	
preferred sanitary material	395							<b>&lt;0.01</b>
Tissue/ Toilet roll	56	20	35.7	33	58.9	3	5.4	
Cloth Sanitary Towel/Pad	59	16	27.1	33	55.9	10	16.9	
	280	47	16.8	20	73.2	28	10.0	
Commercial made pads are available within your school or community								0.713
No	148	31	20.9	10	70.3	13	8.8	
Yes	247	52	21.1	16	67.6	28	11.3	
More than 500 naira is spent on the average in a month on menstrual material.								<b>0.033</b>
No	342	65	19.0	23	69.9	39	11.1	
Yes	53	18	34.0	32	60.4	3	5.7	<b>0.028<sup>a</sup></b>

Provision of menstrual materials								
Self	350	66	18.9	24	70.6	37	10.6	
School Authorities	12	2	16.7	9	75.0	1	8.3	
Father and Mother	33	15	45.5	15	45.5	3	9.1	
Type of school toilet								<b>&lt;0.001</b>
Water Cistern (WC)	61	14	23.0	37	60.7	10	16.4	
Pour flush Ventilated Improved Pit Latrine (VIP)	58	25	43.1	29	50.0	4	6.9	
Local Pit Latrine	77	17	22.1	56	72.7	4	5.2	
	199	27	13.6	14	74.9	23	11.6	
Type of toilet at home								0.208 <sup>a</sup>
Water Cistern (WC)	58	10	17.2	43	74.1	5	8.6	
Pour flush Ventilated Improved Pit Latrine (VIP)	157	44	28.0	99	63.1	14	8.9	
Local Pit Latrine	43	10	23.3	28	65.1	5	11.6	
None	135	19	14.1	99	73.3	17	12.6	
	2	0	0.0	2	100	0	0.0	
Access to clean toilet at all times								<b>&lt;0.01</b>
Yes	367	68	18.5	26	71.9	35	9.5	
No	28	15	53.6	7	25.0	6	21.4	<b>0.013<sup>a</sup></b>

Type of water facility at school								
Motorized Borehole (Patavegar et al.)	57	18	31.6	35	61.4	4	7.0	
Hand Pump Borehole (HPBH)	291	51	17.5	20	8	71.5	32	11.0
Hand Dug Open Well	30	12	40.0	17	56.7	1	3.3	
Improved Hand Dug Well	11	1	9.1	6	54.5	4	36.4	
None	6	1	16.7	5	83.3	0	0.0	
Type of water facility at home								<0.01
Motorized Borehole (Patavegar et al.)	118	15	12.7	90	76.3	13	11.0	
Hand Pump Borehole (HPBH)	128	33	25.8	85	66.4	10	7.8	
Hand Dug Open Well	79	20	25.3	45	57.0	14	17.7	
Improved Hand Dug Well	30	3	10.0	27	90.0	0	0.0	
None	40	12	30.0	24	60.0	4	10.0	

1. P-value by  $\chi^2$

a. P-value by Fisher exact Test

## CHAPTER V

### DISCUSSION, CONCLUSION AND RECOMMENDATION

This study is a cross-sectional study on 395 menstruating in-school adolescent girls from 4 Government Girls junior secondary school in Katsina state. The study was carried out to find out the proportion of good practice on MHM among adolescent girls in selected schools in the LGAs of Katsina state. Assess the socio-demographic characteristics, knowledge, belief and the practice of MHM among adolescent girls in selected schools in the LGAs of Katsina state and identify the enabling factors that influences menstruating adolescent girls in selected schools in Katsina state to properly manage their menstrual hygiene in school and at home environment. These enabling factors includes: menstrual materials availability, accessibility and affordability, availability of water sanitation and hygiene (WASH) facilities, provision of incinerator or sanitary dustbin, changing room and others.

#### 5.1 Discussions

In this study, an effort has been made to find out the knowledge, beliefs and practices of menstrual hygiene among in-school adolescents.

**Socio-demography:** The age of the respondents of this study are between 10 to 15 years with majority of the menstruating girls being between ages 13 and 15. This was in agreement with (Thakre et al., 2011) which reveal that the age of menstruating girls is between 12-17 years with maximum number of the girls between 13-14 years. Similarly, (Busari, 2012) noted in his study that almost 50% of her participants belong to the age group 14 – 16, followed by ages 11 – 13 and the least is ages 17 – 19 years. The age of most girls at the attainment of menarche is 11 – 13 years, followed by 14-16 years and the average duration is of 4-6 days while the average cycle is 26-28 days. This is tend to partially agree with what (Dipanwita P., 2014)that majority of the girls attain menarche at the mean age of 12-14. The findings from this study also reveal that majority of the respondents are

from JS three (3) 212(53.7%), JS two & One (1) are 183 (46.3%) and are of Hausa ethnic group and mostly moslem 97% and 96.7% respectively. The majority of the respondents 80% and few 13.9% resides with their mothers only. The education of either the father or the mothers are majorly of literacy level 40.8% while 28.9% of the fathers and 33.9% of the mother are with diploma. It also establishes that 60.8% of the fathers and 22.5% of the mothers were in government employment with average monthly income of less than one hundred thousand naira (₦100,000) which is equivalent to 2,857.143 THbt. The above narration reveals that with the majority of the respondent being Hausa of ethnic origin and Moslem religion, there is this culture of women not seen nor heard, this might have impacted on the level of knowledge and practice of MHM that existed among the respondents since most of the mothers are literate house wives with only the men providing for the entire household and all of these will affect the level of hygiene practice of girl child. This finding was in tone with (Lawan et al., 2010).whose study was on similar topic and was carried in Kano, another North-West state of Nigeria. He noted that his respondents were mostly Hausa and of Moslem religion, that their study findings may not be unconnected with cultural difference where parents are not allowed to discuss freely with their children on cognitive development and on issues as sensitive as this. This implies that majority of is respondents never heard of menstruation and menstrual management before their first menarche. This however, shows that the parents may have been given limited information to the girls as there still exists gap in the knowledge regarding menstrual hygiene. Consequently, to the above, this study has established that there is association between ethnicity (0.01), father and mother occupation (<0.01) respectively and length of menstrual flow (0.017) and the level of MHM practice.

**Knowledge:** The result emanated from assessment of knowledge and level of practice shows that majority of the respondents 225 (57%) have low knowledge level of menstruation and its practice, 157 (39. 7%) have moderate knowledge and 13 (3,3%) have high knowledge of menstruation and menstrual hygiene management. 61% of the respondents did not know that menses is physiological as against 40% that knew, 61% of the respondents did not know the cause of

menstruation, as they attributed it to cause of the God while only 40% knew it is caused by hormone. Regarding which part of the body do menses flow from, as much as 357 (90.4%) did not know that menses flows from the uterus, (9.6%) knew whereas others noted it flows from the vagina. Out of the 395 participants 281 (71.1%) knew the duration of menses, 114 (28.9%) did not know. 290 (73.4%) knew the age of menarche as against the 105 (26.6%) that did not know, 269 (68.1%) did not know the cycle as against 126 (39.9%) that knew. The above finding of this study conforms to that of (Busari, 2012), (Patel, 2015), (Thakre et al., 2011), (Geethu et al., 2017), (Adhikari, Kadel, Dhungel, & Mandal, 2007) (Aluko et al., 2014), (Abioye-Kuteyi, 2000) that noted that the knowledge of their respondents regarding menstruation and its management is low, poor, fair, insufficient or inadequate thus need to be addressed. In contrast to the findings of this study, (Dipanwita P., 2014) and (Lawan et al., 2010) noted that there is high knowledge among his respondents as 85.05% and 87.5 respectively have correct knowledge regarding menses as against 15.04% that ascribe menses to the curse of the god, However, this study was able to establish in general term an association between knowledge and level of practice at  $P=0.026$  significance level, it intones that the level of MHM hygiene practiced by respondents is linked to their level of knowledge. This general finding conforms to findings from other studies; (Dipanwita P., 2014) states that knowledge on menstrual hygiene was positively associated with practice on MHM with a significance level of  $P<0.0$ , (Lawan et al., 2010) also noted that association between knowledge and MHM practice with  $P=0.05$ . Regrettably this study did not carry out analysis to determine the strength of the association.

**Culture-Myths:** Furthermore, this study have learnt from the respondents (306)77.5% that there exist serious false cultural and religious beliefs which may have affected their level of hygiene practice. There is belief that women or menstruating girls are restricted in doing so many things. This according to this study shows a relationship to practice with  $P<0.01$ . (Patel, 2015) noted that 100% of his respondents' encounter different types of restriction during menses which ranges from not permitted to be in places of worship o engage in any religious

activities, banned from doing routine household work and eating of certain types of food. He goes further to attribute to poor MHM practice. This same opinion was held by Thakre et al when he noted that his respondents face similar restrictions however few of them were found significant to his study. (Dipanwita P., 2014) noted in their studies that there are taboos and superstitions regarding menses which are very prevalent in the rural areas as maximum restrictions were found on religious activities. In as much as these beliefs are insignificant to this study except the restrictions, there are some restrictions like not allowed to pray, fast or being to mosque; in a Moslem culture or religion, it is mandatory that “ablution” are performed before any religion activities and this to me means cleansing oneself before encountering Allah and invariably fellow humans. If menstruating women or girls are not allowed to join in these activities, the tendency may lead to practicing very poor hygiene of not bathing regularly, not changing and cleaning genitalia

Majority of the respondents agree that in their socio cultural context, there are some misconceptions and false beliefs or myths that may influence the level of menstrual hygiene practice. 55.9% agree that women do not have sex during menstruation while 14.1% disagree to that. 64.3% agree that disposing used pads will attract barrenness as a result of using it for money rituals. This particular false belief may positively influence the girls to practice proper disposal of used sanitary towels or pad the significant aspect of the myths is the restriction that menstruating girls should not interact with boys, the association is  $P < 0.01$ . However, this may affect the level of MHM practice among adolescents that attempts to practice hygiene during menses bearing in mind they are meeting with their opposite sex as friend but the reverse will be the case if such false beliefs are allowed to be nurtured in their feeble minds. Another aspect of the myths which need to be flagged up and addressed properly is the misconception that washed menstrual cloths should be dried in the house or under the bed, and that of sex is relieves dysmenorrhea or abdominal menstrual cramp. In a similar observation, (Dipanwita P., 2014) opined that 71.6% of his respondents confirm taboos and superstitions around menses especially in rural communities and this have negative impacts on the attitude and possible practice of menstrual hygiene. Most studies that included socio-cultural,



religion beliefs, taboos, misconceptions and myths, did not actually show the association they have on menstrual hygiene practice nor knowledge. Each scholar tried to bring out the consequences those may have on either knowledge or practice of menstrual hygiene based on the responses emanated from their participants; (Aluko et al., 2014) and (Abioye-Kuteyi, 2000) state that there is still misconception about menses among in-school adolescent girls in Niger, (Thakre et al., 2011) noted in his concluding part that “there is need to reinforce and encourage safe and hygienic practices among adolescent girls and bring out all the traditional beliefs, misconceptions and restrictions regarding menstruation”, (Sommer & Sahin, 2013) in their comparative study stressed that the on-going beliefs, taboo and myths that been restricting girls activities need to be addressed, (Dipanwita P., 2014) noted that taboo and superstition regarding menses are prevalent in rural areas where maximum restrictions were found on religious activities become order of the day.

**Practice:** The study reveal the proportion of the respondents that practice good hygiene were as follows: 83 (21%) are practicing poor hygiene, 271(68.6%) practice good hygiene at moderate level while as low as 41 (10.4%) practice good hygiene at high level. This shows that maintaining high level of good hygiene during menses is very paramount. This was also indicated in various studies carried out by (Thakre et al., 2011), (WaterAid, 2013), (El-Gilany et al., 2005) the hygiene related practices of women in developing countries during menstruation are considerably important as they affect women’s health by increasing their vulnerability to infections. Regarding feminine materials preferred to be used during menstruation, the majority (70.9%) prefer to use sanitary pad, however some few others prefer using tissue (14.2%) and rags or cloths (14.9%). This was probably linked to the level of family income or level of knowledge since many noted that sanitary pads are readily available but not affordable to some people. However, it is noted in this study that majority of the respondents provides sanitary pads on monthly basis, this has an association of  $P=0028$ , this may affect the level of hygiene practice in the school if the school authorities could not attend and provide for the basic need of the girl child The choice of rags or reusable materials

as found in a study by (Lawan et al., 2010) that few students that use these materials other than pads do so due to inability to afford sanitary pads while Patel added due to difficulty in disposing sanitary pad. On the actual use of feminine absorbent material, this study recorded as much as 91.4% of respondents indicate that they use sanitary pad, the remaining few still make use of clothes. In conformity with the above, (Dipanwita P., 2014) observes that 71.72% of his respondents were using sanitary pad while as few as the remaining agreed to have been using cloth. In contrast, (Busari, 2012), (Patel, 2015), (Thakre et al., 2011) noted that majority of their various studies use rags or old clothes and re-use them while fewer number use sanitary pad. (Dipanwita P., 2014), (Patel, 2015) noted that commonly there are challenges and difficulties adolescents face with washing, drying and storing of cloths or rags. The usual practice those using rags or clothes is to wash and re-use it, however, there are issues that emanate from such practices such as drying the washed menstrual clothes under the sun and storing it hygienically. This study reveal the 23.3% that uses cloths, 67% of them wash the sanitary cloth with water and soap and 32.4% wash with only water. From the same group using cloth for absorbing menstrual blood, as few as 34.7 dry it under the sun while the rest 34.7% and 31-1% dry inside the room and under the bed, this still confirms what (Dipanwita P., 2014), that out of 100% of his respondents, 40.54% agreed spreading their washed menstrual cloth under the sun whereas the others dry inside the house and store in a bag in the bathroom. Patel observed from his respondents that girls (33.8%) face the problem of water, privacy, drying and storing hence these washed clothes are hidden in unhygienic places. some He goes further to affirm that others respondents do regular change of any form of absorbent materials used. They also increase bathing during menses. In a similar observation as high as 68.9% were using sanitary napkins or cloth, this is as a result of none availability, inaccessibility, affordability and disposal issues. About 90.36% of the girls practice changing at least twice or thrice a day while 44.85% change theirs only at night (Dipanwita P., 2014). (Busari, 2012), ties this kind of attitude to mother's level of education or literacy; girls from literate household uses sanitary pads while those from poor and illiterate mothers tend to use rags and old clothes more. Similarly on this, (Thakre et al., 2011) uphold that type of absorbent materials

used is of great concern since re-usable cloths could lead to infection if not hygienically handled. He goes further to reiterate that rural girls mostly use rags and re-use it after washing with soap and water. This choice of using rag is also tied to lack of awareness, none availability, cost and low economic status. However in this study, use of absorbent materials is found to be associated with the level of practice with a significance level of  $<0.01$ , such was found in Dipanwita's study that relationship found among the use of other materials are statistically significant ( $P<0.01$ ). Another aspect of practice of MHM is the disposal of used sanitary materials, this was found to practice by 81.5% of the respondents that disposes in the toilet while other throw in the dustbin alongside other domestic waste with 60% of the respondents wrapping with plastic as against 32.2% wrapping with paper. Thakre et al noted that majority of his respondent disposes of their used materials via burning while 39.79% threw them with their routine waste. Regarding maintaining personal hygiene during menses, this study found that 84.4 bath during menses only once, 88.4 indicated washing of their genitalia, with 53.9% using water and soap, 28.9% use only water while 17.2% use tissue. Out of the 395 sampled, 92.2% agrees to wash their hand after changing and 78.5 does so with water and soap while 21.5% does with water only. The above reflects a similar finding by (Thakre et al., 2011), (Patel, 2015) and (Dipanwita P., 2014). The above shows that for high level of good menstrual hygiene to be effectively practiced, there is need for regular bathing at least 3 times a day, menstruating girls should pay special attention to washing of genitalia during menses with soap and water however caution should be taken to avoid excessive doing of this as some medical school of thought warned against regular washing of the genitalia with soap to avoid irritation and dryness of mucosa as advised by some medical experts. In general term, this findings, show moderate to low level of hygiene practice level amongst the 395 respondents. This agrees with the findings from other studies; (Abioye-Kuteyi, 2000), (Adinma & Adinma, 2008), (Rajakumari, 2015))  $<50$ , (Juyal et al., 2012) 48.1%, (Geethu et al., 2017) 15.67%, (Dasgupta & Sarkar, 2008) 11.25% that noted that the practice level on MHM by their respondents were found to be on low, bad, fair, no or moderate. However, some other studies tend to contradict the above findings; (Lawan et al., 2010) 88.7%, (Dipanwita P., 2014)

71,72%, (Shah et al., 2013) 68.9% were of good practice while (Aluko et al., 2014) used majority were at good practice,

**Enabling Factors:** The practice of good menstrual hygiene from all indications as seen in this study and other related studies are hinged to providing an enabling environment or factors which will facilitate the adolescent girls to manage their menstruation better and with dignity within school and home environment. This is in line with the respondents opinion that if there is gender friendly latrines in schools and residences that easily accessible, regular access to water, provision of sanitary pad that are affordable, provision of cloak or changing room, availability of incinerators and others menstrual hygiene management will be high in schools and community. From this study, there is existing relationship between enabling factors and level of good practice of menstrual hygiene. Majority 70.9% of the respondents prefer use of commercially produced absorbent materials and this shows an association of  $P < 0.01$  to level of hygiene practice which is moderate, consequently majority could not afford it and this is also found to be significant to practice with  $P < 0.01$ . Majority of the respondent indicates that they provide sanitary pads or materials by themselves and it is also reveal to be significant to practice with  $P = 0.028$ . Provision or availability of and accessibility to clean latrine is found to be associated with level of hygiene practice with  $P < 0.01$  respectively. The availability of toilet especially gender friendly types is key to bosting and sustaining good MHM in both schools and communities. Furthermore type of water facility accessed in school and home goes a very long way in influencing good MHM among menstruating girls as this was found to be significant with  $P = 0,013$  and  $P < .01$  respectively. (Thakre et al., 2011) in his study, noted that as few as 11.37% of their respondents change their sanitary materials at school due to lack of facilities. Dipanwita et al also buttress this when they reiterate that 45.28% of their respondents change their sanitary material at school and the schools have separate latrines for each gender with running water. Blaise of WSSCC identify lack of access to sanitation facility and scarcity of adequate MHM facilities are considered as very challenging for women in participating in the society and for absenteeism of the menstruating girl child(Sommer et al., 2015) stated the need for

creating enabling environment for the girl child to manage her menses with confidence; adequate latrines with locks on the door and water tap inside, water availability, provision of sanitary pad and under pants for adolescent girls that could not afford will make a difference and improve good hygiene practice and reducing gender discrimination.

## **5.2 Limitations**

Limitations to this study will include use of local language which is Hausa in designing questionnaire and willingness of conservative Moslem menstruating girls to participate in the study. This study cannot be generalized in Nigeria and other countries.

## **5.3 Expected Benefits and Application**

Misconception and myths on menstruation has led to poor attendance to school and high risk due to poor hygiene practices. The findings and recommendation of this study will avail education curriculum designers and ministries in charge of schools to ensure gender friendly WASH facilities in school and possible inclusion of MHM in school curriculum. Teachers if properly capacitated on MHM will in turn sensitize parents of the girl child on the need to practice high level of hygiene during menses and possible establishment of health clubs in schools where none exists.

## **5.4 Conclusion**

This study has been able to establish that there is a relationship or association between level of knowledge of the respondents with the level of menstrual hygiene practice. It also identified those enabling factors which when adequately provided will reduce the difficulties adolescent girls face while managing their monthly period. It has also brought out the urgent need for intensified sensitization of traditional and religious leaders for addressing the various societal myths, misconceptions and false beliefs which negatively affects menstrual hygiene management

## 5.5 Recommendations

This study was conducted in four LGAs of Katsina state and a quantitative survey. Owing to the fact that Nigeria is a very vast country with 36 states, six geo-political zones, more than 500 dialects and 371 minor tribes with varying cultures and tradition, the researcher wish to recommend the following for future studies since the findings will not be generalized in Nigeria or other countries.

### A. For further studies:

1. Research on a similar topic be carried out in 3 major tribes of Igbo, Yoruba and Hausa at varying times or concurrently depending on the financial capacity of the researcher.
2. A qualitative research be carried out in the same schools to identify the most acceptable or desired design of MHM friendly WASH facilities to be promoted in schools and also establish the strength of association of the variables.
3. Assessment of Menstrual Hygiene Practices and Absenteeism among high school girls.

### B. For Stakeholders:

1. MHM should be incorporated as a full topic in health education in all secondary school level and basic sciences for primary 5 and 6.
2. Teachers should be exposed to workshop and MHM conferences within the country.
3. Ministry of health should incorporate MHM within reproductive health issues and mothers be meant to understand issues around MH during ante natal care.
4. School authorities should as a matter of urgency initiate establishment of hygiene clubs in every secondary school.

5. There is a dire need for advocacy, sensitization and orientation of community and religious leaders to address all myths and negative beliefs about menstruation and its management.
6. School authorities should endeavor to provide gender and MHM friendly WASH facilities in schools.



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## APPENDIX



จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

## Appendix A Questionnaire

### Questionnaire on assessment of knowledge, Beliefs and Practice of Menstrual Hygiene Management among in-school adolescents in Katsina State Nigeria.

#### Consent form that certify the respondents agreement before the interview

01. Name of the School \_\_\_\_\_

02. Questionnaire Identification Number \_\_\_\_\_

#### Dear Respondent,

I wish to learn of your knowledge, belief and practice regarding menstrual hygiene management (conference). I intend to understand how informed you are on MHM, what are the myths or belief you have concerning menstruation, what menstruation and its management mean to you and finally to understand how you practices hygiene management including disposal of sanitary towel or pads.

This questionnaire was adapted from a similar research work done in Nekemte Western Ethiopia by Wollega University. 2014, UNICEF Indonesia, 2015, WSSCC and UN Women, 2014 and was restructured to suit this study.

Your answers will not be released to any one and your identity will be treated with confidentiality. You are not under any compulsion or forced to respond thus participation is voluntary. Your names are not required to be written in this questionnaire hence anonymity is guaranteed.

Your honest response will assist in giving meaningful recommendations to relevant ministries and stakeholder for improvement in quality of curriculum and provision of Water, Sanitation and Hygiene (WASH) facilities in every school.

Thank you for your time and participation.

Would you be willing to participate in the study? Yes  No

If you decide not to participate in the study, please return the questionnaire to the research assistant.

**Questionnaire Form Identification No \_\_\_\_\_**

Instruction: circle the responses or write the appropriate answer on the space provided.

**STRUCTURED QUESTIONS FOR INTERVIEW OF MENSTRUATING ADOLESCENTS IN 4 SCHOOLS OF KATSINA STATE**

<b>Part 1: Socio-Demographic Variables</b>		
S/No	Questions	Option/Response
	School	
1	Age	_____ (in years)
2	Class	1. JS 3
		2. JS 2
		3. JS 1
3	Ethnicity	1. Hausa
		2. Fulani
		3. Igbo
		4. Yoruba
4	Religion	1. Moslem
		2. Christian
		3. Traditionalist
		4. Orthodox
5	Whom do you live with at present?	1. With my mother and father
		2. With my mother only
		3. With my father only
		4. with step mother and my father
		5. With step father and my mother
6	What is your father's educational level?	1. Illiterate (cannot read and write)
		2. Literate (able to read and write)
		3. Primary school – 1- 4 grade
		4. Primary school – 5- 8 grade
		5. Secondary school

		6. College diploma and above
7	What is your mother's educational level?	1. Illiterate (cannot read and write)
		2. Literate (able to read and write)
		3. Primary school – 1- 3 grade
		4. Primary school – 4- 6 grade
		5. Junior Secondary school – 1-3
		6. Senior secondary school – 4-6
		7. College diploma and above
8	Occupation of father	1. Farmer
		2. Government employee
		3. Merchant/Trade
		4. Private Org. employee
		5. Daily laborer
9	Occupation of mother	1. Housewife only
		2. Farmer
		3. Merchant/Trade
		4. Private Organization employee
		5. Government employee
		6. Daily laborer
10	Do you get permanent pocket money from your parents?	1. Yes
		2. No
11	Does your family have a TV or/and radio?	1. Yes
		2. No
12	At what age did you experience your first menstruation	1.8-10 yrs.
		2. 11-13
		3. 14-16
		4. 17-19
		5. Don't Know
13	Monthly income of your family	1. 10k – 50k,
		2. 51k – 100k,
		3. 101k 150k,

		4. 151k – 200k Naira/Month
14	what is the duration or length of your menstrual flow	1. 1 – 2 days
		2. 3 – 4 days
		3. 5 – 7 days
		More than 7 days
<b>Part II: General Knowledge on Menses and MHM</b>		
1	What is menstruation?	1. Physiological
		2. Pathological
		3. Curse
		4. Other(Specify) _____
2	What is the cause of menstruation?	1. Hormones
		2. Curse of god
		3. Disease
		4. Don't know
3	From which organ does menstrual blood comes?	1. Uterus
		2. Vagina
		3. Bladder
		4. Abdomen
		5. Don't know
4	Do you know the age most girls usually experience their first period?	1. Yes
		2. No
5	Do you know the duration of normal menstruation, in normal person?	1. Yes
		2. No
6	Do you know the interval between two menstrual cycles?	1. Yes
		2. No
7	Do menstrual blood have foul odor during menstruation?	1. Yes
		2. No
8	Is menstrual blood unhygienic?	1. Yes
		2. No
9	Does menses have colour?	1. Yes
		2. No
<b>Part IIIA: Beliefs regarding Menses</b>		



1	Menstruating girls are forced to practice restrictions during menses?	1. Agree
		2. Disagree
2	Menstruation is a sign of impurity of the girl or woman	1. Agree
		2. Disagree
3	Menstruating girl or woman is not allowed to fast	1. Agree
		2. Disagree
4	it is not allowed for menstruating girl or woman to pray	1. Agree
		2. Disagree
5	Menstruating women or girls are restricted from entering mosque	1. Agree
		2. Disagree
6	it is a forbidden for a menstruating girl or woman to touch or hold holy Quran	1. Agree
		2. Disagree
	Girls or women undergoes purification after menses	
<b>Part IIIB: Myths-Misconception of Menses</b>		
1	It is a taboo for girls or women to have sex during menstruation	1. Agree
		2. Disagree
2	It is generally believed that immediate disposal of used pads are used for rituals which leads to barrenness	1. Agree
		2. Disagree
3	spreading or drying washed reusable pad or cloths for menses under the sun is a taboo	1. Agree
		2. Disagree
4	Do menstruating girls restricted from interacting with men?	1. Agree
		2. Disagree
5	Albinos are children conceived during menstruation	1. Agree
		2. Disagree
6	Consumption of sugary foods lead to heavy flow during menses	1. Agree
		2. Disagree

7	Sexual intercourse relieves menstrual cramp	1. Agree
		2. Disagree
<b>Part IV: Practices of Menstrual Hygiene Management (conference)</b>		
1	Do you use absorbent material during period?	1. Yes
		2. No
2	What absorbent material do you use during menstruation? Commercially made sanitary pad	Yes
		No
3	What absorbent material do you use during menstruation? Toilet Roll/Tissue paper	1. Yes
		2. NO
4	What absorbent material do you use during menstruation? Cloth or Rag	1. Yes
		2.No
5	If you are using cloth as pad How do you clean it?	1. Soap &water
		2. Only water
6	If you are using cloth How do you dry the cloth?	1. Sunlight
		2. Inside the house
		3. Under the bed
7	How many times do you change the cloth/pad in a day?	1. Three and more
		2. Once
		3. Twice
8	Where do you dispose your pads?	1. Dustbin
		2. Toilet
		3. Open field or bush or drin
9	Types of pad-wrap used for disposing it?	1. Papers
		2. Plastic bag
		3. Not wrap
10	Number of changing panty per day	1. Once
		2. Twice
		3. Thrice
11	When do you bath during	1. Once daily
		2. twice daily
		3. Three times daily

12	Do you clean your genitalia during menstruation?	1. Yes
		2. No
13	If yes, mostly by what?	1. Water and soap
		2. Only with water
		3. Tissue paper or towel
14	Do you wash your hands after changing the pad?	1. Yes
		2. No
15	If yes, what do use in washing hands after changing of pads?	1. Water only
		2. water with soap
<b>Prat V: Enabling Factors on MHM in school and home environment</b>		
1	What is your preferred sanitary material?	1. Cloth
		2. Sanitary towel/pad
		3. Tissue/Toilet roll
2	Are commercial menstrual materials available within your school or community?	1. Yes
		2. No
3	Do you spend more than ₦700 on the average in a month on menstrual material?	1. Yes
		2. No
4	Who provides menstrual materials for you?	1. Father and Mother
		2. School Authorities
		3. Self
5	What type of toilet do you have in your school?	1. Water Cistern (WC)
		2. Pour Flush
		3. Ventilated Improved Pit Latrine (VIP)
		4. Local pit latrine
		5 None
6	What type of toilet do you have in your house or residence?	1. Water Cistern (WC)
		2. Pour Flush
		3. Ventilated Improved Pit Latrine (VIP)
		4. Local pit latrine
		5 None

7	Do you have access to clean toilet at all times?	1. Yes
		2. No
8	What type of water facility do you access at school?	1. Motorized Borehole (Patavegar et al.)
		2. Hand Pump Borehole (HPBH)
		3. Hand Dug open well
		4. Improved Hand dug well
		5. None
9	What type of water facility do you access at home?	1. Motorized Borehole (Patavegar et al.)
		2. Hand Pump Borehole (HPBH)
		3. Hand Dug open well
		4. Improved Hand dug well
		5. None

### HAUSA TRANLATED QUESTIONNAIR

**Tambayoyi don tantance fahimta da tunani da abubuwan da ake aikatawa game da jinin al'ada a tsakanin 'yanmata da ke makaranta a jihar Katsina, Nijeriya.**

**Takaradar cikewa don neman amincewar wanda ake tambaya kafin a yi tambayar**

01 Sunan

Makaranta.....

02. Lambar

tambaya.....

**Zuwa ga wanda za a tambaya**

Ina neman masaniya game da fahimta da tunani da abubuwan da aka yi amanna da su kuma ake aikatawa a game da sha'anin jinin al'ada. Ina neman sanin yadda kika fahimci sha'anin jinin al'ada wanda ya hada da irin tunanin da kike da shi game da

yadda jinin al'ada yake, sannan da irin yadda kika dauke shi, sai kuma daga karshe in san yadda kike tsaftace jiki da kayan tsanewa kamar su tawul da auduga.

Wannan kundin tambayoyi an samo shi ne daga wani bincike irin wannan da aka taba yi wanda jami'ar Wollega ta amince da shi a shekarar 2004.

Ina ba ki tabbacin cewa ba za a sanar da kowa ba game da amsoshin da kika bayar kuma ba za a bayyana sunan ki ba a matsayin wadda ta bayar da amsoshin. Ba wai an tilasta maki bayar da amsoshin ba ne a'a, sai dai za ki bayar da su ne don ganin damar ki. Ba a bukatar a rubuta sunanki a kan wannan kundin tambayoyi, don haka ba sai kin bayyana sunan naki ba.

Amsoshin gaskiya da za ki bayar za su taimaka wajen bayar da shawarwari masu ma'ana ga ma'aikatu da hukumomin da suka dace tare da dukan masu ruwa da tsaki wajen inganta tsarin manhajjar karatu da samar da ruwa da inganta tsaftar muhalli da ta jiki a kowace makaranta.

Na gode a kan lokacin da za ki bayar don amsa tambayoyin.

Kin amince za ki amsa wadannan tambayoyi? Eh  A.a

Idan har kin yanke shawarar ba za ki amsa tambayoyin ba sai ki mayar da kundin tambayoyin ga jami'in gudanar da binciken.

**Lambar kundin tambayoyi.....**

Umurni: A zagaye amsoshin da aka bayar ko a rubuta amsar da ta dace a cikin filin da aka tanada.

Sashe na daya- Akan sauye-sauyen zaman rayuwa		
Lamba	Tambayoyi	Amsoshi
	Makaranta	
1	Shekaru	.....(yawan shaekaru)
2	Aji	1. Aji 3 karamar sakandare 2. Aji 2 karamar sakandare 3. Aji 1 karamar sakandare 4. Aji 6 firamare 5. Aji 5 firamare 6. Aji 4 firamare
3	Kabila	1. Hausa 2. Fulani 3. Igbo 4. Yoruba 5. Wani ban da su(A bayyana) _____
4	Addini	1. Musulmi 2. Kirista 3. Addinin gargajiya 4. Orthodox 5. Wani daban(A bayyana)_____
5	Tare da wa kuke zaune a gida a halin yanzu? (Ana iya bayar da fiye da amsa daya in da hali)	1. Tare da mamata da Mahaifina 2. Tare da mahaifiyata kadai 3. Tare da mahaifina kadai 4. Tare da kishiyar mahaifiyata da mahaifina

		5. Tare da mahaifiyata da mijinta
6	Yaya zurfin ilimin Mahaifinki yake?	1. Ba ilimi (bai iya karantawa da rubutawa)
		2. Akwai ilimi (yana iya karantawa da rubutawa)
		3. Ya yi firamare daga aji daya zuwa hudu
		4. Ya yi firamare daga aji biyar zuwa takwas
		5. Ya yi makarantar sakandare
		6. Ya yi karatun shaidar Diploma zuwa sama
7	Yaya matsayin ilimin mahaifiyarki yake?	1. Babu ilimi (bat a iya karantawa da rubutawa)
		2. Tana da ilimi (tana iya karantawa da rubutawa)
		3. Ta yi firamare daga aji daya zuwa uku
		4. Ta yi firamare daga aji hudu zuwa shida
		5. Ta yi karamar sakandare daga aji daya zuwa uku
		6. Ta yi karamar sakandare daga aji hudu zuwa shida
		7. Tana da takardar shaidar Diploma zuwa sama
8	Sana'ar Mahaifi	1. Manomi
		2. Maa'ikacin gwamnati
		3. Dan kasuwa
		4. Ma'aikacin kamfani
		5. Lebura
		6. Wani abun daban ( a bayyana)
9	Sana'ar Mahaifiya	1. Matar aure kadai
		2. Manomiya
		3. 'Yar kasuwa
		4. Ma'aikaciyar kamfani
		5. Ma'aikaciyar gwamnati
		6. Mai aikin karfi

		7. Wani abun daban(a bayyana) _____
10	Kina samun wasu kudin kashewa kodayaushe daga wurin iyayenki?	1. Eh 2. A'a
11	Akwai talabijin ko rediyo ko kuma dukan su a gidanku?	1. Eh 2. A'a
12	Kina samun kudi da kanki?	1. Eh 2. A'a
13	Adadin nawa ake samu a gidanku a wata?	_____ Naira
Sashe na biyu: Baki dayan fahimta game da jinin al'ada		
1	Minene jinin al'ada?	1. Abin day a shafi hankali 2. Abin da ya shafi jiki 3. Sihiri 4. Wani abin daban(A bayyana) _____ 5. Ban sani ba
2	Mi ke haddasa jinin al'ada	1. Kwayoyin halittar jiki 2. Fushin ubangiji 3. Cuta 4. Wani abun daban(A bayyana) _____ 5. Ban sani ba
3	Daga wane sashe na jiki ne jinin al'ada yake fitowa?	1. Mahaifa 2. Al'aura 3. Mafitsara 4. Mara 5. Wani abun daban(A bayyana) _____ 6. Ban sani ba
4	A tunaninki daga shekara nawa ne yawancin 'yammata suke fara jinin al'ada?	_____ Yawan shekaru Ban sani ba
5	Kwana nawa ne lafiyayyar mace take yi tana zubar da jinin al'ada?	_____ Yawan kwanaki Ban sani ba



6	Nawa ne adadin kwanaki tsakanin wani jinin al'ada zuwa wani?	_____ Yawan kwanaki.
		Ban sani ba
7	Jinin al'ada yana da wari?	1. Eh
		2. A'a
8	Jinin al'ada yana da kazanta?	1. Eh
		2. A'a
9	Jinin al'ada yana da launi?	1. Eh
		2. A'a
Sashe na huku: Tunani da camfe-camfe da kage-kage game da jinin al'ada		
1	Ana tilasta wa 'yammata kaurace wa wasu abubuwa a lokacin jinin al'adarsu?	1. Haka ne
		2. Bah aka ba ne
2	Jinin al'ada alamar rashin tsarki ne ga budurwa ko babbar mace.	1. Haka ne
		2. Ba haka ba ne
3	Ba a yarda budurwa ko babbar mace mai al'ada ta yi azumi ba	1. Haka ne
		2. Ba haka ba ne
4	Ba a yarda budurwa ko babbar mace mai jinin al'ada ta yi sallah ba.	1. Haka ne
		2. Ba haka ba ne
5	Ba a yarda budurwa ko babbar mace mai jinin al'ada ta shiga masallaci ba	1. Haka ne
		2. Ba haka ba ne
6	Ba a yarda budurwa ko babbar mace mai jinin al'ada ta taba Kur'ani ba.	1. Haka ne
		2. Ba haka ba ne
7	Abun ki ne ga budurwa ko babbar mace mai jinin al'ada ta yi jima'i.	1. Haka ne
		2. Ba haka ba ne
8	An yi amanna da cewa gaggauta zubar da kayan tsane jinin al'ada da aka yi amfani da su yakan sa a yi wani asiri da su wanda kan haddasa wa mace matsalar rashin haihuwa.	1. Haka ne
		2. Ba haka ba ne
9	'Yammata da manyan mata suna yin tsarki bayan sun gama jinin al'ada	1. Haka ne
		2. Ba haka ba ne

10	Shanya kyalle ko tsumman da aka wanke bayan an tsane jinin al'ada ba daidai ba ne	1. Haka ne
		2. Ba haka ba ne
11	Ana hana 'yammata masu jinin al'ada yin mu'amala da maza?	1. Haka ne
		2. Ba haka ba ne
12	Ana haihuwar yara zabaya ne idan an yi jima'i da iyayen su a lokacin jinin al'ada	1. Haka ne
		2. Ba haka ba ne
13	Shan abin sha mai zaki a yana kawo zubar jinin al'ada da yawa	1. Haka ne
		2. Ba haka ba ne
14	Sexual intercourse relieves menstrual cramp	1. Haka ne
	Yin jima'i yana saukaka radadin jinin al'ada	2. Ba haka ba ne
<b>Sashe na hudur: Yadda ake tafiyar da al'amarin jinin al'ada</b>		
1	Kina amfani da kayan tsanewa ko goge jini a lokacin al'ada?	1. Eh
		2. A'a
2	Wane irin kayan tsanewa ko goge jini kike amfani da shi a lokacin al'ada? Auduga ta saidawa	1. Eh
		2. A'a
	Wane irin kayan tsanewa ko goge jini kike amfani da shi a lokacin al'ada? Takardar goge bayan gida/ Kyalle ko yadi	1. Eh
		4. A'a
	Wane irin kayan tsanewa ko goge jini kike amfani da shi a lokacin al'ada? Tsumma	2. A'a
5	Idan kina amfani da kyalle ne ko tsumma wajen tsane jini yaya kike wanke su?	1. Da sabulu da ruwa
		2. Da ruwa kadai
		3. Da wasu ababe (A bayyana su): _____
6	Idan kina amfani da kyalle ko tsumma ne yaya kike shanya su?	1. A rana
		2. A cikin gida

		3. A wani wuri daban (A bayyana)
7	Sau nawa kike canza kyalle ko tsumman a rana?	1. Sau uku ko fiye da haka
		2. Sau daya
		3. Sau biyu
8	A ina kike zubar da audugar?	1. A kwandon shara
		2. A maguji
		3. A cikin masai
9	Nau'in kayan da ake kunshe audugar wajen zubarwa.	1. A cikin takarda
		2. A cikin leda
		3. Ba a kunshewa
10	Sau nawa kike canza wandon kamfai a rana?	1. Sau uku ko fiye da haka
		2. Sau daya
		3. Sau biyu
11	Yaushe kike wanka a lokacin jinin al'ada?	1. A kullum
		2. A ranar farko
		3. A rana ta biyu
		4. Ba ni yi a kowane lokaci
		5. Wata rana dabam(A bayyana)
12	Kina wanke al'aurarki a lokacin jinin al'ada?	1. Eh
		2. A'a
13	Idan kina wankewa, yawanci da mi?	1. Ruwa da sabulu
		2. Ruwa kadai
		3. Magogi
14	Kina wanke hannuwanki bayan kin canza auduga ko tsumma ko kyalle?	1. Eh
		2. A'a
15	Idan har haka ne, da mi kike amfani wajen wanke hannuwa bayan kin canza auduga ko abin tsanewar.	1. Ruwa kadai
		2. Ruwa da sabulu
<b>Sashe na biyar: Abubuwan lura game da tafiyar da al'amarin jinin al'ada a makaranta da gida.</b>		
1	Wane abin tsanewa ko goge jini ne kika fi gwammace wa yin amfani da shi?	1. Tsumma ko kyalle

		2. Tawul ko auduga
		3. Takardar goge bayan gida
		4. Sauran abubuwa (A bayyana) ----- -----
2	Akwai kayan tsanewa ko goge jini na sayarwa a cikin makarantarku?	1. Eh
		2. A'a
3	Nawa kike kashewa akalla a wata don sayen kayan tsanewa ko goge jinin al'ada?	1. Naira 250 zuwa 500
		2. Naira 550 zuwa 800
		3. Naira 850 zuwa 1100
		4. Sama da Naira 1100
4	Wa ke sai maki kayan tsanewa ko goge jinin al'ada?	1. Baba
		2. Mama
		3. Kungiyar SBMC ko PTA
		4. Hukumar makaranta
		5. Wasu daban,( A bayyana) ----- -----
5	Wane irin nau'in masai kuke da shi a makarantarku?	1. Masai mai amfani da ruwa
		2. Masai mai kwami na zamani
		3. Masai mai rami na zamani
		4. Masai na gargajiya
		5 Ba ko daya
6	Wane irin nau'in masai kuke da shi a gidanku?	1. Masai mai amfani da ruwa
		2. Masai mai kwami na zamani
		3. Masai mai rami na zamani
		4. Masai na gargajiya
		5 Ba ko daya
7	Kuna samun damar tsaftace masanku a kowane lokaci?	1. Eh
		2. A'a
8	Wane irin wurin samar da ruwa kuke da shi a makaranta?	1. Famfo mai amfani da inji
		2. Famfon tuka-tuka
		3. Rijiyar kwakware
		4. Rijiyar kwakware ta zamani

		5. Ba ko daya
9	Wane irin wurin samar da ruwa kuke da shi a gida?	1. Famfo mai amfani da inji
		2. Famfon tuka-tuka
		3. Rijiyar kwakware
		4. Rijiyar kwakware ta zamani
		5. Ba ko daya



## Appendix 2

### Ethical Approval



## MINISTRY OF HEALTH KATSINA STATE

State Secretariat Complex IBB Way  
Dandagoro, PMB 2075, Katsina

MOH/ADM/SUB/1152/1/143

24<sup>th</sup> MAY, 2017

#### KATSINA STATE HREC FULL ETHICAL CLEARANCE CERTIFICATE

Re: "Knowledge, Belief and Practice of Menstrual Hygiene Management among in School adolescents in Katsina ."

Katsina HREC assigned number	-MOH/ADM/SUB/1152/1/143
Name of principal investigator	- Stella Ifeoma Okafor-Terver
Address of Principal Investigator	-College of Health Sciences Chulalongkorn University.
Date of receipt of Valid Application	-28/4/2017
Date of HREC meeting and Approval	-24/5/2017

This is to inform you that the research described in the submitted protocol, the consent forms and other participants information materials have been reviewed and given **Full approval** by the Katsina State Health Research Ethics Committee and accordingly by the Honorable Commissioner of Health.

Please note: this approval dates from **24/5/2017 to 1/12/2017**. No participant recruited into this research may be conducted outside these dates.

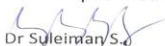
All informed consent forms in this study must carry the Katsina HREC assigned number and the duration of the Katsina HREC approval for the study.

The HREC expects that you submit your application as well an annual report for ethical clearance renewal 3 months prior to the expiration of the study dates. This is to enable you obtain renewal of your approval and avoid interruption of your research.

If there is a delay in starting the research, please inform the Katsina HREC so that starting date can be adjusted accordingly.

No changes are permitted to the research without prior approval by the Katsina HREC except in circumstances outlined in the national code of health research ethics.  
<http://www.nhrec.net>

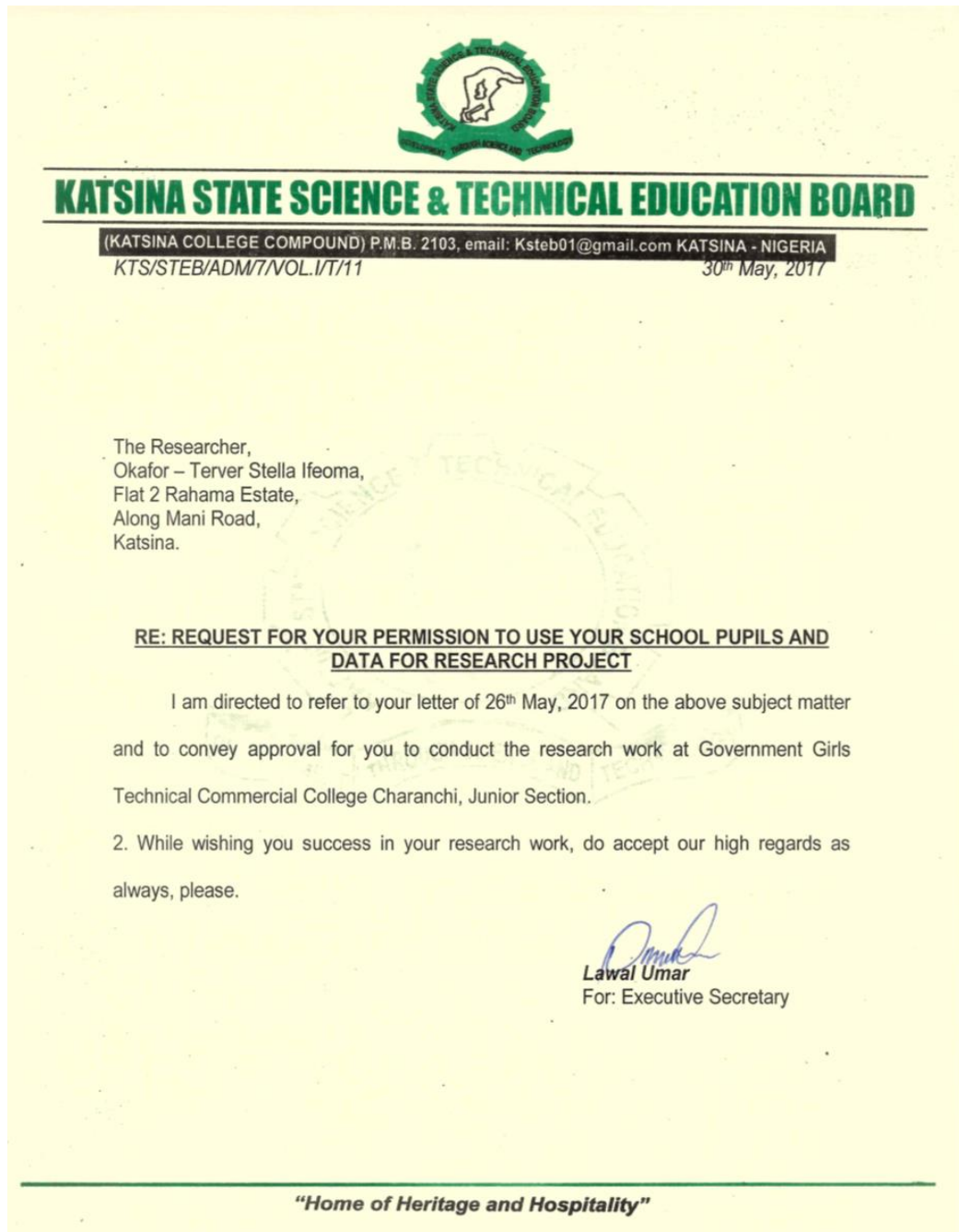
Katsina HREC reserves the right to conduct a compliance assessment to your research site without prior notification.

  
Dr Suleiman S.

Director Public Health  
Chairman, Katsina HREC

### Appendix 3

Authorization letters from Katsina State Ministry of Education and State Science & Technical Education Board





## KATSINA STATE MINISTRY OF EDUCATION

STATE SECRETARIAT COMPLEX

No. 88 IBB Way, Kano Road, P.M.B. 2023, Katsina

Tel: 065-430581, 430725

E-mail: ministryofeducation@yahoo.com  
katsinamoe@yahoo.com

**KTS/MOE/PRS/36/VOLII**

**25th May, 2017**

The Coordinator  
Zonal Education Quality Assurance,  
Mani.

### **INTRODCTION LETTER IN RESPECT OF STELLA IFEOMA OKAFOR**

I am directed to write and introduce the above named bearer as a post graduate student from Bangkok University.

- 2 she want to administer a questionnaire in one of the school under your Zone.
- 3 You are requested to give her all the necessary assistance so as to succeed in her research work please.

**Mukhtar Abdulmumin**  
**C. E .O. (Planning)**  
**For: Honorable Commissioner.**

*“Home of Heritage and Hospitality”*





## KATSINA STATE MINISTRY OF EDUCATION

### STATE SECRETARIAT COMPLEX

No. 88 IBB Way, Kano Road, P.M.B. 2023, Katsina

Tel: 065-430581, 430725

E-mail: ministryofeducation@yahoo.com  
katsinamoe@yahoo.com

**KTS/MOE/PRS/36/VOLII**

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Zonal Education Quality Assurance,  
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**For: Honorable Commissioner.**

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Tel: 065-430581, 430725

E-mail: ministryofeducation@yahoo.com  
katsinamoe@yahoo.com

**KTS/MOE/PRS/36/VOLII**

**25th May, 2017**

The Coordinator  
Zonal Education Quality Assurance,  
Katsina.

### **INTRODUCTION LETTER IN RESPECT OF STELLA IFEOMA OKAFOR**

I am directed to write and introduce the above named bearer as a post graduate student from Bangkok University.

- 2 she want to administer a questionnaire in one of the school under your Zone.
- 3 You are requested to give her all the necessary assistance so as to succeed in her research work please.

A handwritten signature in blue ink, appearing to read 'Mukhtar Abdulmumin'.

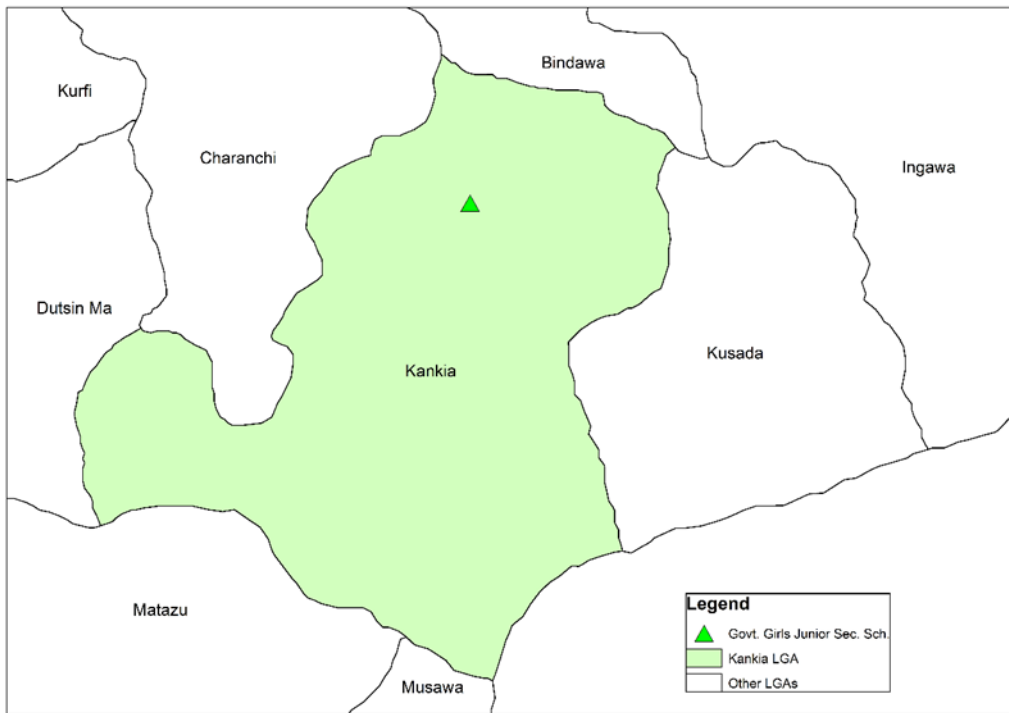
**Mukhtar Abdulmumin**  
**C. E. O. (Planning)**  
**For: Honorable Commissioner.**

*“Home of Heritage and Hospitality”*

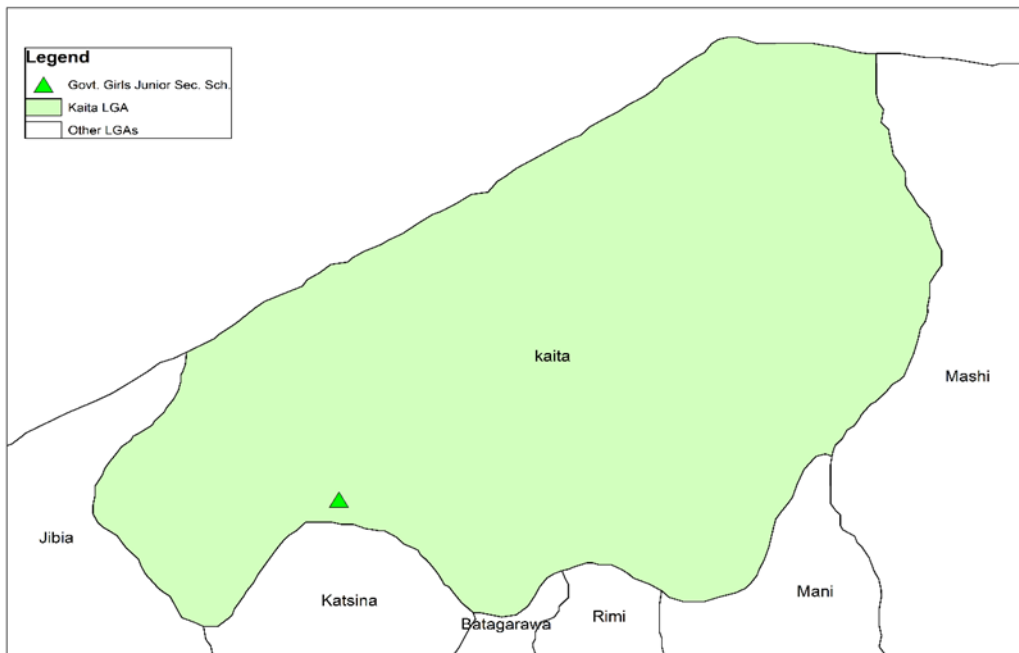
Appendix 4

Maps indicating schools used for study

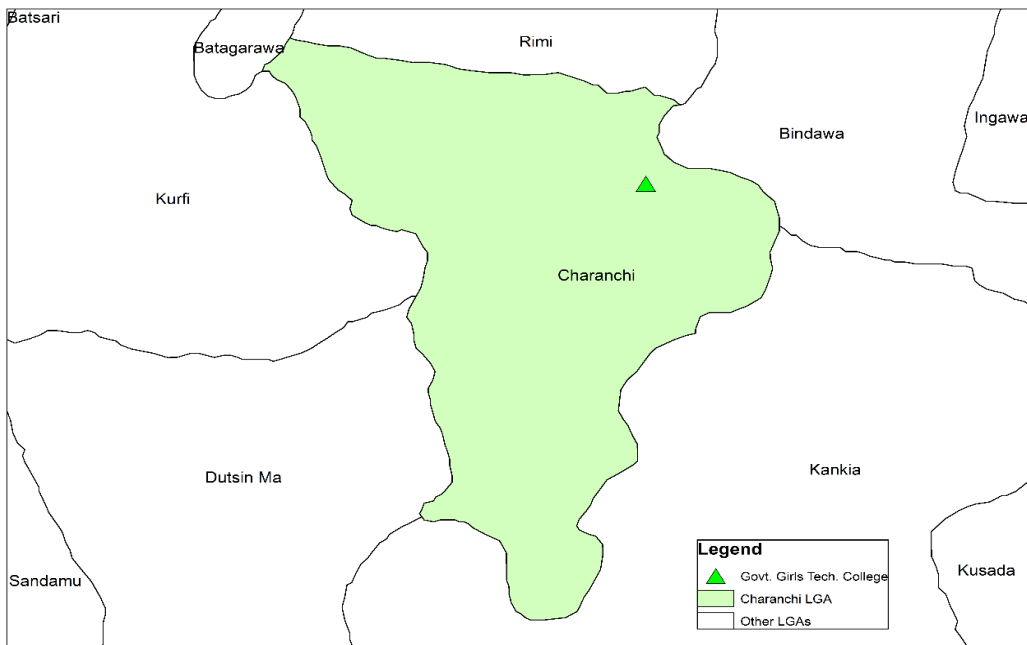
**MAP OF KANKIA LGA SHOWING THE SAMPLED SCHOOL**



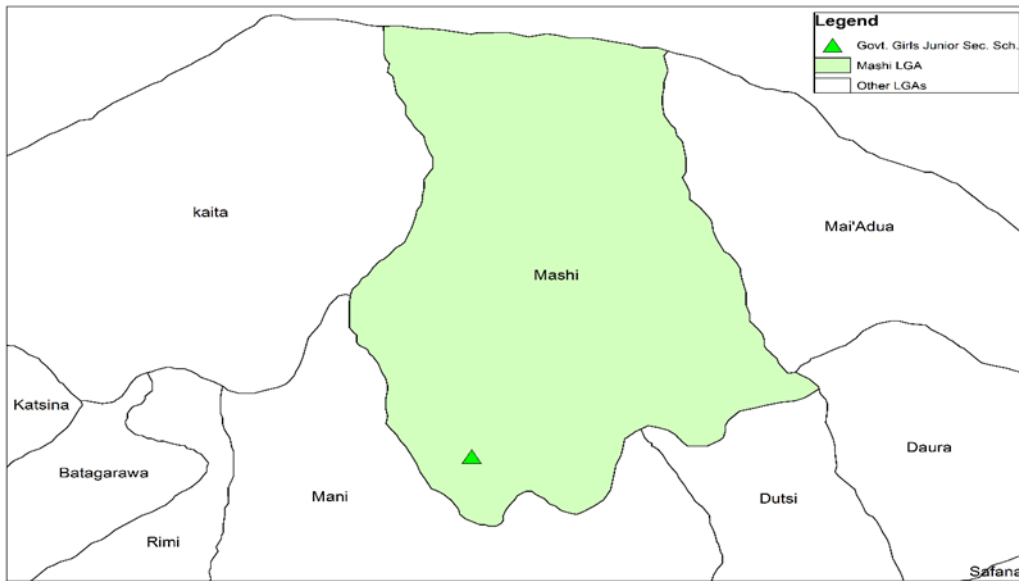
**MAP OF KAITA LGA SHOWING THE SAMPLED SCHOOL**



**MAP OF CHARANCHI LGA SHOWING THE SAMPLED SCHOOL**



**MAP OF MASHI LGA SHOWING THE SAMPLED SCHOOL**



**Appendix 5**

Time Table



Activities	March			April			May			June			July							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Correction to the proposal presented based on the committee comments																				

<p><b>Share with Supervisor for discussion and mentoring</b></p>																	
<p><b>Questionnaire pre-test and review to reflect field experience</b></p>																	
<p><b>Ethical Review and Collection of authorization letter from Katsina state Ethical committee with other authorization documents from ministries</b></p>																	
<p><b>Reviewed questionnaire translation to local language</b></p>																	



<b>Copies of Questionnaire for pre-test and field data collection (435*6 pages)</b>	<b>2610</b>	<b>20</b>	<b>141</b>	<b>4,935</b>
<b>Training of research team on ethics and strategies for data collection (Hall Hiring – 75,000, Tea break – 1600, Lunch – 1850, hiring of projector – 20,000, Intra-city transport allowance – 3,000)</b>	<b>12</b>	<b>166400</b>	<b>449.7</b>	<b>15,740</b>
<b>Payment of Honorarium to 10 Research team for (Negotiated 2 days)</b>	<b>10</b>	<b>10,000</b>	<b>541</b>	<b>18,918</b>
<b>Entertainment to participants during pre-test of questionnaire</b>	<b>45</b>	<b>1000</b>	<b>122</b>	<b>4,256</b>
<b>Transport and feeding allowance to research team for 4 days field data collection</b>	<b>10</b>	<b>3,000</b>	<b>324</b>	<b>11,351</b>
<b>Translation of questionnaire into local language; Hausa</b>	<b>2</b>	<b>10,000</b>	<b>54</b>	<b>1,891</b>



<b>Total</b>			<b>1,631.7</b>	<b>57,109</b>
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## VITA

### Bio-Data

Name Stella Ifeoma Okafor-Terver

Nationality Nigeria

Sex Female

Date of Birth 25th September, 1978

### Educational Background

2010 B.Sc. Public and Community Health Novena University, Ogume

2004 B.Sc. Health Education Nnamdi Azikiwe University, Awka

2000 NCE National Teachers' Institute, Kaduna

1986 & 1987 WAEC Army Day Sec, School, Onitsha

### Work Experience

2000 – 2004 Project Coordinator Nigeria Red Cross, Enugu state Office, Enugu

2006 – 2008 Mobilization Officer Catholic Justice Development and Peace

Commission, Onitsha Ecclesiastical Province, Enugu

2010 - 2014 Consultant WASH Programme, UNICEF, Enugu Field Office

2015 – Date WASH Officer UNICEF, Katsina Zonal Office, Nigeria.