

**KNOWLEDGE AND PRACTICES OF MENSTRUAL HYGIENE
AMONG ADOLESCENT FEMALE APPRENTICES IN LAGELU
LOCAL GOVERNMENT AREA, IBADAN**

BY

Zaynab Bolanle FOLARANMI

B.Sc. Physiology (LAUTECH)

MATRIC. NO.: 203747

A Project in the Department of Health Promotion and Education submitted to

Faculty of Public Health

In partial fulfilment of the requirements of the degree of

**MASTER OF PUBLIC HEALTH
(HEALTH PROMOTION AND EDUCATION)**

of the

UNIVERSITY OF IBADAN

SEPTEMBER, 2019

ABSTRACT

In Nigeria, as in most developing countries, problems of lack of facilities, menstrual hygiene education session in communities and time for observing good menstrual hygiene practice continue to exist in various communities. Moreso, literatures on menstrual hygiene management among adolescents at work places especially the informal settings are very scanty. Therefore, this study assessed knowledge and practices of menstrual hygiene among adolescent female apprentices in Lagelu Local Government Area of Ibadan, Oyo State.

A multi-stage sampling technique was used to select 421 post menarche adolescent apprentices between the ages of 10-19 years in the study area. A quantitative method involving use of semi-structured pre-tested interviewer-administered questionnaire was used to collect data on Socio-demographic characteristics, knowledge, practices and factors influencing menstrual hygiene among respondents. Ethical approval was obtained from Oyo State Ethical Review Board before the commencement of the study. Knowledge was measured on a 15-point scale; score of <8 was classified as poor, $\geq 8 < 11$ as fair and ≥ 11 was classified as good. A 12-point menstrual hygiene practice scale was used to assess respondents practice; score <7 was rated poor while score ≥ 7 was rated good. Data were analysed using descriptive and inferential statistics with aid of Statistical Packages for Social Sciences version 21.

Mean age at menarche was found to be 13.4 ± 1.4 years. Majority of the respondents (96.2%) were single, 3.5% were married. More so 50.3% of the respondents were Muslims and 49.5% were Christians. Majority of respondents (77.4%) were aware of menstruation before menarche and 50.8% possessed good knowledge of menstruation. However, only 22.6% correctly knew that menstrual blood comes from the uterus and 55.5% did not know the normal length of menstrual cycle. Factors significantly associated with knowledge of respondents on menstruation include father's level of education ($p=0.001$) and mother's level of education ($p=0.001$). Although, half of the respondents had good knowledge of menstruation, 85.7% possessed poor menstrual hygiene practice. Factors significantly associated with respondents' practice included lack of private washing facilities for cloth and napkin ($p=0.050$), private disposal facilities for disposable absorbent materials ($p=0.015$), lack of menstrual hygiene education session ($p=0.003$). Regression analysis confirmed that those who had pre-menarcheal training ($p=0.025$, OR=0.4), access to menstrual hygiene education ($p=0.001$, OR=8.3), those without facilities for promoting safe menstrual hygiene practices ($p=0.008$, OR= 6.4) and those

who do not know whether there are facilities for this purpose ($p=0.026$, $OR=2.8$) were those who had poorer practice.

Half of the respondents in this study have good knowledge of menstruation which did not translate to good menstrual hygiene practice as most respondents lacked time and resources to practice good menstrual hygiene practices. Hence, the need for providing menstrual hygiene education to respondents by mothers and other relevant stakeholders to create more awareness of the risk associated with poor menstrual hygiene, the need for provision of cleaning and private disposal facilities in order for menstrual hygiene practice of respondents to be improved.

Keywords: Menarche, menstruation, adolescent female apprentices, menstrual hygiene

Word count: 482

UNIVERSITY OF IBADAN LIBRARY

DEDICATION

This research work is dedicated to God, my parent and my siblings for their sacrifice, moral support and encouragement that brought me to this stage in my academic career.

UNIVERSITY OF IBADAN LIBRARY

ACKNOWLEDGEMENT

There are a number of people without which this research might not have been written and to whom I am greatly indebted.

To my supervisor, Professor Oyedunni S. Arulogun for the ways in which you lovingly supported and challenged me throughout the course of the work. You consistently allowed this work to be my own but steered me in the right direction whenever you thought I needed it. I would also like to appreciate Dr. M.A. Titiloye. The door to your office was always open whenever I ran into trouble spot or had questions about my research. Thank you for knowing when to push and when to let up.

My sincere appreciation to the Acting Head of Department, Dr. O.E Oyewole and all other lecturers in the department of Health Promotion and Education without whom the knowledge and ideas needed for this work would not have been acquired.

To Mr. Adejumo, thank you for the support you gave in the analysis of this research, your contribution went a long way in making this work a success.

My appreciation also goes to my husband (Abdul Fatah Solanke), my parents (Alhaji and Alhaja Zakariyyah Folaranmi) and my siblings for being my source of inspiration and encouragements that kept propelling me thus bringing me this far in my academic career. Thank you all for engaging in the struggle and discomfort with me.

I also express my profound gratitude to Mr. Abdul Akeem Giwa and Mr. Tayo Akinpelu, Director, Youth Future Savers Initiative, Abeokuta for your financial and moral support.

I would also like to appreciate Network on Behavioural Research for Child Survival in Nigeria (NETBRECSIN) for the beneficial technical support provided to make this work a success.

Finally to my friend, Kameel Alebiosu and all my learning partners in the department who played important roles along the journey as we mutually provided encouragements to each other at those times when it appeared difficult to continue and thus making sense of the various challenges that came our way. Thank you all.

CERTIFICATION

This is to certify that this study was carried out by FOLARANMI Zaynab Bolanle (Matriculation Number: 203747) in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria under my Supervision.

SUPERVISOR

OYEDUNNI S. ARULOGUN

**(B.Ed., M.Ed., MPH, PhD (Ib.), FRSPH (UK), CCST (Nig.), Dip HIV Mgt & care
(Israel))**

Professor, Department of Health Promotion and Education,
Faculty of Public Health, College of Medicine,
University of Ibadan,
Oyo State, Nigeria.

TABLE OF CONTENTS

Title page	i
Abstract	ii
Dedication	iv
Acknowledgement	v
Certification	vi
Table of contents	vii
List of tables	x
List of figures	xii
Glossary of abbreviations	xiii
Definition of terms	xiv

CHAPTER ONE: INTRODUCTION

1.1	Background to the study	1
1.2	Statement of the problem	2
1.3	Justification for study	2
1.4	Research questions	3
1.5	Broad objectives	4
1.6	Specific objectives	4
1.7	Research hypotheses	4

CHAPTER TWO: LITERATURE REVIEW

2.1	Introduction	5
2.2	The concept of menstruation	5
2.3	Knowledge of menstruation	6
2.4	Potential health risks of poor menstrual hygiene management	7
2.5	Menstrual hygiene practices	8
2.6	Factors influencing menstrual hygiene practices of adolescents	10
2.7	Conceptual framework	11

CHAPTER THREE: METHODOLOGY

3.1	Study design	14
3.2	Description of study site	14
3.3	Study population	15
3.4	Inclusion criteria	15
3.5	Exclusion criteria	15
3.6	Sample size determination	15
3.7	Sampling procedure	16
3.8	Data collection method	16
3.9	Validity of instrument	16
3.10	Reliability of instrument	17
3.11	Data management and analysis	17
3.12	Ethical consideration	17

CHAPTER FOUR: RESULTS

4.1	Socio-demographic characteristics of respondents	19
4.2	Awareness and knowledge of menstruation among respondents	24
4.3	Menstrual hygiene practices of respondents	30
4.4	Factors influencing menstrual hygiene practices of participants	36
4.5	Hypotheses testing	48
4.6	Result of logistic regression analysis	54

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1	Discussion	57
5.1.1	Respondents' socio-demographics	57
5.1.2	Awareness and knowledge of menstruation	57
5.1.3	Practices of menstrual hygiene	58
5.1.4	Factors influencing menstrual hygiene knowledge and practice of respondents	60
5.2	Conclusion	61
5.3	Recommendation	61
	References	63

Appendices	68
Appendix I: Questionnaire (English version)	68
Appendix II: Questionnaire (Yoruba version)	75
Appendix III: Informed consent (English version)	82
Appendix IV: informed consent (Yoruba version)	85
Appendix V: Ethical approval	87

UNIVERSITY OF IBADAN LIBRARY

LIST OF TABLES

Table 4.1.1	Socio-demographic characteristics of respondents	20
Table 4.1.2	Nature of apprenticeship of respondents	21
Table 4.1.3	Educational attainment of Parents of respondents	22
Table 4.1.4	Occupation of Parents of respondents	23
Table 4.1.5	Age at menarche	25
Table 4.2.1	Awareness of menstruation before menarche among participants	26
Table 4.2.2	Knowledge of menstruation among respondents	27
Table 4.2.3	Knowledge of potential health risks associated with poor menstrual hygiene among respondents	29
Table 4.2.4	Menstrual knowledge score of respondents	31
Table 4.3.1	Distribution of use of washable/re-usable material among respondents	32
Table 4.3.2	Types of absorbent materials use during menstruation among respondents	33
Table 4.3.3	Hygiene practices during menstruation among respondents	34
Table 4.3.4	Disposal of used sanitary material among respondents	35
Table 4.3.5	Restrictions practiced during menstruation among respondents	37
Table 4.3.6	Menstrual hygiene practice score of respondents	38
Table 4.4.1	Predisposing factors influencing menstrual hygiene practices of respondents	39
Table 4.4.2	Enabling factors influencing menstrual hygiene practices of respondents	40
Table 4.4.3	Environmental factors influencing menstrual hygiene practices among respondents	41
Table 4.4.4	Re-inforcing factors influencing menstrual hygiene practices among respondents	42
Table 4.4.5	Intra personal factors influencing menstrual hygiene practices among respondents	44
Table 4.4.6	Interpersonal factors influencing menstrual hygiene practices among respondents	45
Table 4.4.7	Community and organizational factors influencing menstrual hygiene practices among respondents	46

Table 4.4.8	Cultural issues related to menstruation among respondents	47
Table 4.5.1	Relationship between age and menstrual hygiene practice score of respondents	49
Table 4.5.2	Relationship between level of education and menstrual hygiene score of respondents	50
Table 4.5.3	Relationship between marital status and menstrual hygiene score of respondents	51
Table 4.5.4	Relationship between religion and menstrual hygiene score of respondents	52
Table 4.5.5	Relationship between respondents' Parents' level of education and knowledge score of respondents	53
Table 4.5.6	Respondents knowledge score and menstrual hygiene practices	55
Table 4.6	Logistic regression analysis of factors influencing menstrual hygiene	56

LIST OF FIGURES

Figure 2.1	Diagrammatic representation of PRECEDE model	12
Figure 2.2	Diagrammatic representation of Social Ecological Model	13
Figure 4.2.1	Knowledge of absorbent products use for menstrual bleeding among Participants	28

UNIVERSITY OF IBADAN LIBRARY

GLOSSARY OF ABBREVIATIONS

SPSS	Statistical Package for Social Science
UIS	UNESCO Institute for Statistic
UNESCO Organization	United Nations Educational, Scientific and Cultural
UNICEF	United Nations Children’s Fund
WHO	World Health Organization

UNIVERSITY OF IBADAN LIBRARY

OPERATIONAL DEFINITION OF TERMS

Menstruation: Monthly shedding of the endometrial lining in form of menstrual fluid, which exits the uterus through the cervical opening and the body through the vagina

Menstrual hygiene: Women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials

Menarche: Initiation of menstruation

Adolescent female Apprentices: These are girls between the ages of 10-19 years learning any form of handiwork or skill.

UNIVERSITY OF IBADAN LIBRARY

CHAPTER ONE

1.1 Background to The Study

Menstruation is a normal physiological process during the females' reproductive ages and it involves the monthly shedding of the endometrial lining in form of menstrual fluid, which exits the uterus through the cervical opening and the body through the vagina (Aniebue, Aniebue, and Nwankwo, 2009). Menstruation is also called monthly bleeding, menses, menstrual course, menstrual period and period.

Adolescence is an important stage in life. This is because it marks the transition from childhood to adulthood. World Health Organization defines adolescence as the age group 10-19 years (WHO, 2013). Menarche is one of the important and normal changes that occur in adolescent girls. The age of first menstruation also known as menarche varies in individual. It occurs between the age of 11 and 15 years. A study conducted among school girls in Benin City, Nigeria reported the mean age of menarche among secondary school girls to be 13.44 years (Onyiriuka, Ehirim and Abiodun, 2013).

Menstruation, despite being a normal phenomenon is given little attention. In most cultures, Nigeria inclusive, the subject of menstruation and puberty hygiene are not adequately discussed at home or in the community at large. This problem is more observed in rural areas due to poorly educated nature of the environment as well as cultural issues ascribing lots of myths and misconceptions to menstruation. There is a lot of silence regarding menstruation in most developing countries. It was reported by House, Mahon and Cavill, (2012) that young girls often grow up with little knowledge of menstruation because their mothers and other women shy away from discussing the issue with them.

Lack of knowledge can lead to many practices which can be harmful especially among out-of-school adolescents who according to UIS and UNICEF (2015) stated that their population in the sub-Saharan region has grown from 21 million in 2000 to 23 million in 2013. Because they are not enrolled in school, these category of adolescents are therefore mostly found learning one vocation or the other in places without adequate facilities or roaming about the street without having access to cleaning and toilet facilities at the right time. Research conducted in India showed that use of cloth during menstruation was higher among rural and out-of-school girls (Khanna, Goyal and Bhawsar, 2005). If this is so, staying out of the house in places without adequate cleaning and toilet facilities during menstruation alongside lack of time and knowledge of good hygiene for almost the whole

day will predispose these adolescents to health risks such as urogenital and other infections. Therefore, this study investigated the level of knowledge and menstrual hygiene practices among out-of-school adolescent girls who are apprentices.

1.2 Statement of the problem

There is need for every adolescents to possess a good knowledge of menstruation and best practices required for the process even before menarche as this will help them understand how the process should be managed as well as prevent health problems relating to poor hygiene practices. In addition, out-of-school adolescents are faced with problems of lack of money to purchase sanitary materials considering the low socioeconomic status of their parents. They also possess poorer menstrual knowledge and practices compared to their in-school counterparts (Khanna, Goyal and Bhawsar, 2005). Research has shown that use of cloth for example during menstruation was higher among rural and out-of-school girls (Khanna et al., 2005). Cloth is not an ideal absorbent for menstruation especially since the time and facilities to be hygienic with its use is lacking among adolescents and its infrequent change can lead to skin and other infections as they have the tendency to harbor bacteria especially when wet. Poor menstrual hygiene practices can increase susceptibility to reproductive tract infection which has become a silent epidemic that devastates women's lives (Dasgupta and Sarkar, 2008).

The problem of poor facilities and waste disposal cannot be over emphasized in most parts of Nigeria, Ten (2007) stated that inappropriate disposal of absorbents used during menstruation contribute to the growing urban waste in developing countries. Indiscriminate and unsafe disposal of menstrual absorbents can lead to environmental pollution. It can also lead to an increased risk of infecting others with diseases like Hepatitis B especially when there is direct contact with the blood by others (House et al., 2012). Hence the need to garner more information on the level of knowledge and hygiene practices relating to menstruation among out-of-school adolescents.

1.3 Justification for Study

Most of the existing literatures addressing menstruation and menstrual hygiene practices among adolescents are school-based and these studies attached poor knowledge and practices on the issue to increased school absenteeism which can invariably lead to poor academic performance. The out-of-school adolescents who constitute larger part of

adolescents in most rural areas due to reduction in rate of enrolment in schools among this group are being neglected.

However, the ill-health effects associated with poor menstrual knowledge and practices goes beyond school absenteeism as reproductive tract infection known to be common among rural and out-of-school adolescents as a result of poor menstrual hygiene knowledge and practices can persist till adulthood leading to more complications such as infertility. It is therefore believed that conducting this study among out-of-school adolescents will help in the design of health promotion and education programs that will help to improve practices relating to menstruation among this set of adolescents.

More so, discussing menstruation and menstrual hygiene among them will create awareness, improve knowledge of menstrual process and sensitize these adolescents on certain needs related to its hygienic management such that they understand the need to take care of their absorbent even if it is cloth they have access to and/or can afford rather than engaging in risky sexual practices to get money for disposable sanitary absorbent which can further expose them to other health issues such as abortion and being infected with sexually transmitted infections. Exposing them to this study will also provide them confidence to be at necessary places, punctual at work and do regular activities without losing their self-esteem as well as ensure a sustainable and easy solution to prevent infections and indiscriminate disposal of sanitary materials which may arise due to poor menstrual hygiene.

1.4 Research Questions

The following are the research questions that will guide the conduct of this research:

1. What is the level of knowledge of adolescent female apprentices in Lagelu Local Government area on menstruation?
2. What are the practices of menstrual hygiene among adolescent female apprentices in Lagelu Local Government area?
3. What are the factors that influence menstrual hygiene practices of adolescent female apprentices in Lagelu Local government area?

1.5 Broad Objective

The broad objective of this research was to investigate knowledge and practices of menstrual hygiene among adolescent female apprentices in Lagelu Local government area of Ibadan, Oyo state.

1.6 Specific Objectives

The specific objectives were to:

1. Assess the level of knowledge of menstruation among adolescent female apprentices in Lagelu Local government area.
2. Identify menstrual hygiene practices among adolescent female apprentices in Lagelu Local government area.
3. Determine the factors influencing menstrual hygiene practices adolescent female apprentices in Lagelu Local government area.

1.7 Research Hypotheses

The following Null hypotheses were tested:

1. There is no significant association between socio-demographic characteristics of respondents and menstrual hygiene practices.
2. There is no significant association between knowledge of respondents and menstrual hygiene practices.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Menstruation is an integral and normal part of human life, indeed of human existence and menstrual hygiene is fundamental to the dignity and wellbeing of women and girls, it is an important part of the basic hygiene, sanitation and reproductive health services to which every women and girl has a right (House et al., 2012). Unfortunately, inadequate menstrual hygiene is a major problem for women and girls in most developing countries. The reasons for this are not farfetched. The strong cultural belief attached to menstrual process in many communities makes it difficult for women and other individuals in the community to talk about this issue publicly. Therefore, young girls who are supposed to understand the menstruation process even before menarche are left in the dark which adversely affect their preparation as well as personal hygiene.

Lack of access to appropriate sanitary materials and facilities is another major challenge facing girls in many developed countries. In most rural areas, parents cannot afford to purchase sanitary material for their adolescent girls because of poverty (Johnson, 2010). More so, private space, soap and water supply for washing hands, sanitary materials and genitals are lacking. This call for investigating the status of knowledge and hygiene practices relating to menstruation especially among out-of-school adolescents since research on this area appear to be scanty among this group. This will help policy makers as well as health professionals to plan programs which will help improve menstrual knowledge and practices among this target group.

2.2 The Concept of Menstruation

Menstruation is a normal physiological process during the females' reproductive ages and it involves the monthly shedding of the endometrial lining in form of menstrual fluid, which exits the uterus through the cervical opening and the body through the vagina (Aniebue et al., 2009). Girls start to menstruate typically (time of menarche) during puberty or adolescence. Age of menarche varies from one individual to another. Studies suggest that menarche tends to appear earlier in life as sanitary, nutritional and economic conditions of a society improve (Abioye-Kuteyi, Ojofeitimi, Aina, Kio, Aluko et al., 1997; Ikaroha, Mbadiwe and Igwe, 2005; Kaplowitz, 2006). A study conducted among school

girls in Benin City, Nigeria reported the mean age of menarche among secondary school girls to be 13.44 years (Onyiriuka, Ehirim and Abiodun, 2013). The period between the first day of a menstrual period to the onset of the next menstrual period is called a menstrual cycle. This is usually around 28 days but varies between 21 and 35 days. The bleeding generally lasts between two and seven days, with some lighter flow and some heavier flow days. The cycle is often irregular for the first year or two after menstruation begins (House et al., 2012).

2.3 Knowledge of Menstruation

Menstruation plays an important role in the health of a woman, it is crucial that a woman obtains accurate knowledge about menstruation and learns to accept menstruation as a positive, natural part of her life (Singh, Devi and Gupta, 1999). Menstrual education is an important aspect of health education. However, many girls receive little to no information concerning puberty, the biology of menstruation or hygiene methods to manage menstruation and as a result, many are uncomfortable, insecure and ashamed to manage their menstruation (Sommer and Sahim 2013). Several studies, particularly from low-income countries show that a very high number of girls start menstruating without having any idea of what is happening to them and why (Neginhal, 2010; Jothy and Kalaiselv, 2012; McMahon, Winch, Caruso, Obure, Ogutu, Ochari and Rheingans, 2011). A study conducted by Gupta and Gupta (2001) in India on menstruation among adolescents concluded that adolescents suffer from a range of negative feelings such as guilt, fear, shock and inferiority complex as a result of lack of awareness regarding their growth process. Other studies in the same country also supported this (Thakre, Reddy, Rathi, and Ughade 2011; Raina and Balodi 2014). It is likewise stated that 51% of girls in Afghanistan and 82% in Malawi were unaware of menses before menarche (House et al., 2012).

In contrast to this, level of awareness of menstruation is found to be higher in most communities in Nigeria. A study showed that 96.42% had heard about Menarche before menstruation and a little above half of the respondents have good knowledge on menstruation and its hygienic practices (Fehintola, Fehintola, Aremu, Idowu, Ogunlaja and Ogunlaja, 2017). However, in few other parts of Nigeria, high level of awareness does not translate to good knowledge of menstruation among most adolescents as a research conducted in Sokoto showed that despite an awareness level of 97%, only few of the girls (6.5%) correctly knew that menstruation is normal especially when it occurs in early

adolescence, only 33.8% knew that a menstrual cycle extends from first day of a period to the beginning of the next period and only 2.5% of the subjects knew correctly that the normal menstrual cycle varies between 21 to 35 days (Lawan, Yusuf and Musa, 2010).

House et al. (2012) ascribed shock at first menstruation among adolescents to the sight of blood coming out of the vagina making girls think they are sick or dying or believe they have done something wrong and will be punished. The importance of knowledge of menstruation cannot be overemphasized as it is a major factor which predisposes adolescents to good menstrual hygiene practices. Indeed, the consequences of inadequate pre-menarcheal training in adolescents can be devastating. Inappropriate menarcheal experience, adverse effect of menstruation on schooling and social life, use of unhygienic material as menstrual absorbent and unacceptable methods of disposal for menstrual absorbents were more common in girls who did not have pre-menarcheal training than those who did (Aniebue et al., 2009).

In Ethiopia girls are most comfortable receiving information on menstrual hygiene from a female teacher, their mother, health personnel, friends or sister(s). In Kenya only 12% would be comfortable to receive the information from their mother. In Afghanistan, Iran, Kenya and Malawi girls learned about menstruation from their mothers, grandmothers, friends and classmates (House et al., 2012). In Nigeria, the main source of menarcheal information are mothers of adolescents (Fenintola et al., 2017; Gharoro, 2013; Oche, Umar, Gana and Ango 2012; Aniebue et al., 2009) while other sources of information reported for Nigeria include teachers, health workers, sisters and grandmothers.

The need for men and boys to be knowledgeable about menstruation has also been pointed out. This is important because these categories of individual will be an enabling factor for girls to have an effective menstrual hygiene. However, men and boys typically know even less, meanwhile, when they understand menstruation and menstrual hygiene, they can support their wives, daughters and mothers, students, employees and peers (House et al., 2012).

2.4 Potential Health Risks of Poor Menstrual Hygiene Management

Knowledge of potential health risks associated with poor menstrual hygiene can be a reinforcing factor for adolescents to maintain good menstrual hygiene. There is lack of evidence on the actual risks to health associated with menstrual hygiene, however, it is known that the pH of the vagina is less acidic at the time of menstruation and this makes yeast infections such as thrush (Candidiasis) more likely. Likewise, during menstruation, the plug of mucus normally found at the opening of the cervix opens to allow blood to

pass out of the body, this creates a pathway for bacteria to travel back into the uterus and pelvic cavity and hence it is assumed that the risk of infection is higher than normal during menstruation (House et al., 2012).

Some practices during menstruation according to research can lead to certain health risks. Frequent douching (forcing liquid into the vagina) can facilitate the introduction of bacteria into the uterine cavity (McKee, Baquero, Anderson and Karasz, 2009). In addition, urinary tract infections are believed to be among the most common form of infection in girls and women of menstruating age and this is found out to be due to unhygienic practices (Groen, 2005). After adjusting for other contributing factors, a study also confirmed that wealth and place where a woman changes her pads during menstruation were factors associated with bacteria vaginosis. This indicate that improved socio economic status is associated with overall better hygiene leading to lower susceptibility to bacteria vaginosis and other infections. The study also revealed that use of reusable pads was strongly associated with symptoms and with bacteria vaginosis/urinary tract infection status (Das, Baker, Dutta, Swain, Sahoo1 et al., 2015).

2.5 Menstrual Hygiene Practices

The United Nations defines adequate menstrual hygiene management as “women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials (Sommer and Sahim, 2013). However, in most low-income countries, girls and women face substantial barriers to achieving adequate menstrual management. House et al. (2012) pointed out that taboos surrounding menstruation exclude women and girls from many aspects of social and cultural life as well as menstrual hygiene services. Such taboos include not being able to touch animals, water points, or food that others will eat, and exclusion from religious rituals, the family home and sanitation facilities. As a result, women and girls are often denied access to water and sanitation when they need it most. House et al(2012) quoted that 51% of girls in Iran do not take a bath for eight days after the onset of their period, 84% of girls in Afghanistan never wash their genital areas, 80% of girls in Afghanistan and 39% of girls in India use water but no soap for washing their menstrual protection, 30% of girls in Malawi do not use the latrine when menstruating, this was also noted by 20% of women in

communities in India, 11% of girls in Ethiopia and 60% of girls in India only change their menstrual cloths once a day.

An effective menstrual hygiene practice is very important for healthy living. It has been rightly observed that women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to reproductive tract infection and its consequences ((Das et al., 2015; Dasgupta and Sarkar, 2008; Mudey, Kesharwani, Mudey and Goyal, 2010).

Various materials are used as absorbent for menstrual blood, research has shown that girls in most low-income countries around the world, Nigeria inclusive tend to use old cloths, tissue paper, cotton or wool pieces or some combination of these items to manage their menstrual bleeding (Abioye-Kuteyi, 2000; Adhikari, Kadel, Dhungel and Amandal, 2007; Adinma and Adinma, 2008; Averbach, Nuriye, Sahin-Hodoglugil, Musara, Chipata and Van der Straten, 2009; Dasgupta and Sarkar, 2008; Jewtt and Ryley 2014; Khanna et al., 2005; Lawan et al., 2010; McMahan et al., 2011;Oche et al., 2012; Fehintola et al., 2017). However, qualitative studies has it that girls who know about commercial sanitary products may prefer these products because they are seen as more comfortable and less likely to leak, unfortunately for many girls such products are usually unaffordable, and/or unavailable(Averbach et al., 2009; Jewtt and Ryley 2014; McMahan et al., 2011; Crofts and Fisher, 2012; Sommer, 2010).

Re-usable cloth or other materials which have the tendency to become soiled faster may not be the best product for managing menstrual bleeding among adolescents. This is because the requirements for maintaining its hygiene such as time, effort and resources may not be assured. However, use of clothes/rag and toilet roll during menses is still very common (79.65%) among majority of adolescents in Nigeria (Fehintola et al., 2017). Use of these re-usable materials was even found to be higher among rural and out-of-school adolescents (Khanna, et al., 2005). Other studies in Nigeria reported a high percentage of use of sanitary pad among respondents (Lawan, Yusuf and Musa, 2010; Oche, Umar, Gana and Ango 2012).

The practice of indiscriminate disposal of sanitary material is another issue in most developing countries, Fehintola et al. (2017) in her study showed that majority of adolescents disposed absorbent material without wrapping it and disposed it in the toilet, an act which she reported unsightly and can lead to breeding place for insects. In contrary, few other research indicated that majority of their respondents burn or wrap the absorbent materials used during menses and disposed of it in place used for solid waste disposal (Madhusudan and Mahadeva, 2014; Dasgupta and Sarkar ,2008; Mudey et al., 2010;

Thakre, Reddy, Rathi, Pathak and Ughade, 2011). Another poor practice found to be common in most part of Nigeria and other countries outside Nigeria is the use of soap and water to wash the genitalia (Omidvar et al., 2010; Thakre et al., 2011; Oche et al., 2012; Raina and Balodi, 2014). This practice is a wrong one as it can distort the natural biological nature of the genitalia and predisposes to infection. Several factors have been found to influence the menstrual hygiene practices of adolescents.

2.6 Factors Influencing Menstrual Hygiene Practices of Adolescents

Knowledge of factors influencing menstrual hygiene practices among out-of-school adolescents can help to plan for intervention to improve hygiene practices among this group. Several factors can be responsible for menstrual hygiene practices. Some of these include parent level of education, age of adolescent, menstruation awareness and information, knowledge of menstruation, adolescent level of education, exposure to advertisement, socio-economic status of the family (Santina, Wehbe, Ziade and Nehme, 2013; Lee, Chen, Lee and Kaur, 2006; Sommer, 2010; Prateek and Saurabh, 2011; Poureslami, Mohammad and Osati-Ashtiani 2002). Access to places where girls can manage menstruation-related washing in privacy and comfort, access to water, hygiene and sanitation facilities at school, household or community are other factors that can be considered.

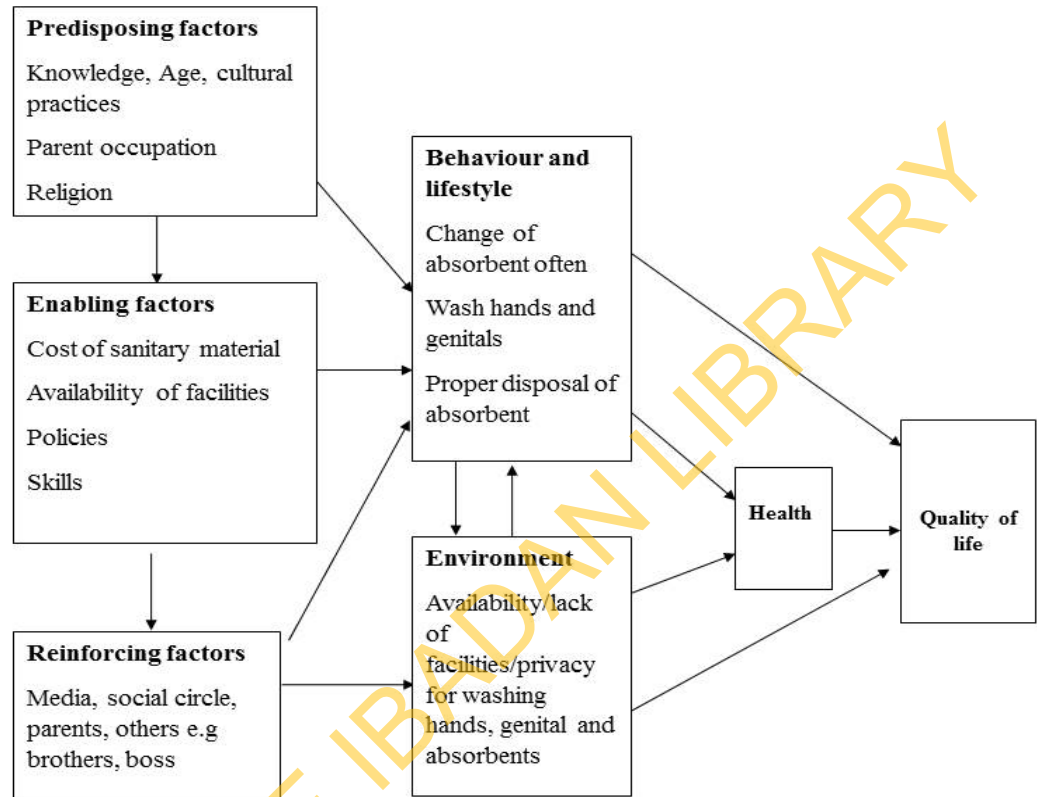
A study conducted in Ethiopia indicated that there was a significant association between menstrual practice and age of the adolescents, grade level, prior information about menstruation before menarche, exposure to advertisement of sanitary products and knowledge of menstrual hygiene with the likelihood of good menstrual practice among girls who had exposure to advertisement being two times higher compared to girls who had no exposure to advertisement and girls with good knowledge on menstrual hygiene being two times more likely to have good practice compared to girls with poor knowledge (Fisseha, kebede and Yeshita 2017).

2.7 Conceptual Framework

Two conceptual frameworks will be used for this research so as to capture and measure all necessary variables relevant to menstrual hygiene practices among the target group.

1. The PRECEDE model will be used for this research. The model is a diagnostic tool which is used to analyze certain health behaviors. This model considers three main factors influencing health-related behaviour. These factors include:
 - Predisposing factors: include factors which motivate or provide a reason for a behaviour
 - Enabling factors: These are factors which enable persons to act on their predispositions
 - Reinforcing factors: Include factors which come into play after behaviour has been initiated, they encourage persistence of behaviors by providing continuing rewards or incentives.
2. The social ecological model: The Social Ecological Model (SEM) is a theory-based framework for understanding the multifaceted and interactive effects of personal and environmental factors that determine behaviors, and for identifying behavioral and organizational leverage points and intermediaries for health promotion within organizations. There are five nested, hierarchical levels of the SEM: Individual, interpersonal, community, organizational, and policy/enabling environment. For this research, the policy level of this framework will not be assessed.

Figure 2.1: Diagrammatic representation of PRECEDE framework



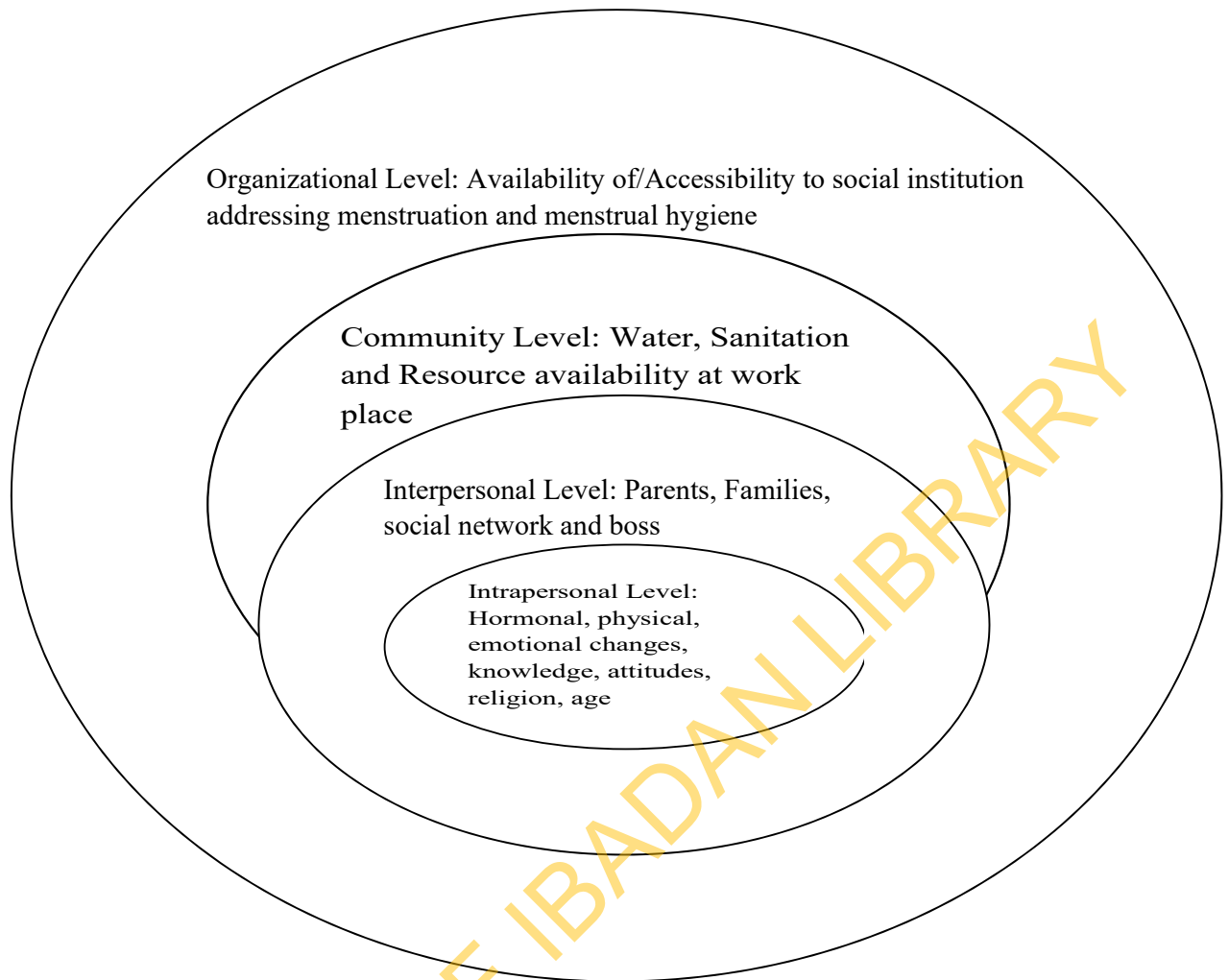


Figure 2.2: Diagrammatic representation of Social Ecological Model

CHAPTER THREE

METHODOLOGY

3.1 Study Design

Descriptive cross-sectional study design involving the use of semi-structured interviewer-administered questionnaire was used for this study.

3.2 Description of Study Site

The study site for this research was Lagelu Local Government Area of Ibadan in Oyo state. The Local Government has a projected estimated population of 167,828 in 2010 compared with total population of 148, 133 and adolescents population of 34, 161 according to the 2006 census. It has a land area of 310.850 square kilometers. It shares boundaries with Egbeda Local Government to the East and Iwo Local Government in Osun state to the West, Ibadan North Local Government to the North and Akinyele Local Government, Ibadan North East Local Government to the South. The Local Government Area consists of over 1076 towns and villages including the principal towns of Lalupon, Lagun, Monatan, Ofa, Ejioku, Oyedeji, Kelebe, Sagbe, Elegbaada, Olowode, Wofun, Ogburo, Kutayi, Apatere, Olorunda, Ogunjawa, Ile-Igbon, Iyana Church, Odo Oba, Sukuru and Akinsawe. Lagelu local government is subdivided into 14 wards:

Ajara/Opeodu	Apatere/Kuffi/Ogunbode/Ogo
ArulogunEhin/Kelebe	Ejioku/ Igbon/Ariku
Lagelu Market/Kajola/Gbena	Lagun
Lalupon I	Lalupon II
Lalupon III	Ofa-Igbo
Ogunjana/Olowode/Ogburo	Ogunremi/Ogunsina
Oyedeji/Olode/Kutayi	Sagbe/Pabiekun

Seven wards which represent 50% of the total were used for this study.

3.3 Study Population

The study population was adolescent girls who are apprentices in Lagelu Local government area of Ibadan. Adolescent girls here referred to girls within the age of 10-19 years (WHO, 2013). While apprentices are girls learning tailoring, hairdressing, catering, trading as well as other vocations where females can be found.

3.4 Inclusion Criteria

Adolescent girls who are apprentices and had attained menarche were those included in this study.

3.5 Exclusion Criteria

Adolescent girls who are in-school and those yet to attain menarche were excluded from this study.

3.6 Sample Size Determination

The sample size for this study was estimated using Leslie Kish formula for single proportion which is as follows;

$$n = \frac{Z^2pq}{d^2} \text{ (Leslie Kish Formula, 1965)}$$

Where:

n = sample size,

Z_{α} = standardized normal deviation which is a constant (1.96) at 95% confidence interval.

P = 44.07% = 0.4407 prevalence of menstrual knowledge deficiency among secondary high school girls in Ogbomoso (Fehintola *et al.*, 2017).

Q = 1 – P (1 – 0.4407) = 0.5593; d = 0.05 at 95% confidence interval

$$n = \frac{Z^2pq}{d^2} = \frac{1.96^2 \times 0.4407 \times 0.5593}{0.05^2} = 379$$

Considering a Non-response rate of 10% = 380 / 1-10% = 421

3.7 Sampling Procedure

A three stage multi stage sampling procedure was used to select 421 adolescent female apprentices in the study site

- The first stage involved selection of 7 wards among the 14 wards in the local government area by purposive sampling. This was because only wards which comprise of high population of adolescent female apprentices were considered.
- The second stage was selection of one community each from the seven wards by simple random sampling
- The third stage was recruitment of adolescents who met the inclusion criteria from identified shops by convenience sampling.

3.8 Data Collection Method

A quantitative data collection method was used for this study. A semi-structured interviewer administered questionnaire was used to collect the required information from respondents in the selected communities in the Local Government area by the researcher and three other trained female research assistants. Four research assistants were recruited and trained for two days. Three of the trained research assistants assisted with the data collection eventually. The questionnaire was divided into four sections which are:

- Section A: Socio-demographic characteristics of respondents
- Section B: Knowledge of menstruation among respondents
- Section C: Menstrual hygiene practices of respondents
- Section D: Factors influencing menstrual hygiene practices of respondents

3.9 Validity of Instrument

There was an extensive review of literature to ensure appropriate content and face validity. Construct validity was also ensured by making sure that variables in the conceptual and theoretical framework were well represented in the instrument. The instrument was also given to my supervisor as well as an expert in the Faculty of Public Health to help ascertain the quality of the instrument.

3.10 Reliability of Instrument

The drafted questionnaire was field tested among 10% of the sample size, which was 42 female apprentice girls in Ido Local government. The retrieved field tested questionnaire was subjected to Cronbach alpha analysis and a reliability coefficient of 0.7 was considered.

3.11 Data Management and Analysis

Data collection took a period of 3 weeks. Data collected was checked for completeness and accuracy. Copies of questionnaire were cleaned, sorted, coded. Only 398 out of the 421 questionnaires administered were correctly filled. Data was processed and analyzed using Statistical Packages SPSS version 21. For the knowledge section, 15 questions were used to assess the respondents, every correct response for questions in section on knowledge of menstruation and menstrual hygiene practices was scored 1 while wrong responses attracted 0. For the practice section, nine questions were asked from respondents to assess their practice. Use of sanitary pad as an absorbent attracted 2 points while use of other absorbents attracted 0 point considering the non-ideal nature for this set of materials. Every other correct response in the practice section attracted one point while wrong response attracted no point. Result is presented using descriptive statistics such as means and percentages with standard deviation. For the knowledge section, score of <8 was classified as poor, $\geq 8 < 11$ as fair and ≥ 11 was classified as good. For the practice section, scores of seven and above was regarded as good practice while scores below seven are regarded as poor practice. Chi-square was also used to test if there are significant differences between the categorical variables e.g knowledge of menstruation and menstrual hygiene practices. For all statistical analysis, a P-value less than or equal to 0.05 was considered significant.

3.12 Ethical Consideration

Ethical approval was obtained from Oyo state Ethical Review Board prior to commencement of the study. Verbal informed consent was also obtained from participants after providing them with information and benefits of the research. They were assured that information provided by them will be kept confidential for them to be sincere with responses to be provided and that they were free to withdraw from the research if need arises. Only female apprentice adolescents who gave their voluntary consent were

recruited into the study. Permissions of the heads of artisan association were also gotten to facilitate easy conduct of the research among the target group.

UNIVERSITY OF IBADAN LIBRARY

CHAPTER FOUR

RESULTS

4.1 Socio-demographic characteristics of respondents

The socio-demographic characteristics of respondents are presented in table 4.1.1. Majority 350 (87.9%) falls within the age of 15-19 while 48 (12.1%) falls within the age of 10-14 years with mean age being 16.7 ± 1.9 . Over half (236) of the respondents have their highest level of educational attainment to be secondary school. This is followed by those with some secondary school with the frequency of 106. Thirty seven (37) of the respondents have tertiary level of education, fourteen (14) of them have only primary school education while five (5) of the respondents have no formal education.

Majority of the respondents (96.2%) were single, 3.5% were married while one of them (0.3%) was cohabiting. Over half of the respondents (91.2%) were Yoruba, ten (2.5%) of the respondents were Hausa, 12 (3.0%) were Igbo, while 3.6% were Fulani, Igede, Igbira, Cotonou or Togolese. The table also indicated that two hundred (50.3%) of the respondents were Muslims, one hundred and ninety seven (49.5%) were Christians while just one (0.3%) was a traditional worshiper. Table 4.1.2 shows the nature of apprenticeship of respondents, most of them (149) were learning tailoring while other works being learnt include hairdressing, catering, trading, patent medicine, shoe and bag making, decoration, make-up, wristwatch repairing and computer training.

Majority (204) of fathers of respondents have secondary school as their highest level of educational attainment, 107 have tertiary level of education while 39 have no formal education. Similarly, for mothers of respondents, majority of them (203) had secondary school as their highest level of educational attainment, 82 had tertiary level of education while 49 had no formal education (Table 4.1.3). Table 4.1.4 highlighted the occupation of parents of respondents. For the fathers majority (127) were artisans while the majorities (276) of mothers were traders. Eighty eight of fathers of respondents were civil servants while thirty four of the mothers were civil servants. Fifty nine of the fathers were also reported by respondents to be farmers.

Table 4.1.1: Socio-demographic characteristics of respondents (n=398)

Socio-demographic characteristics	Freq	%
Age		
10-14	48	12.1
15-19	350	87.9
Mean age=16.75±1.895		
Highest level of educational attainment		
No formal education	5	1.3
Primary school	14	3.5
Some secondary school	106	26.6
Secondary school	236	59.3
Tertiary education	37	9.3
Marital status		
Single	383	96.2
Married	14	3.6
Cohabiting	1	0.3
Tribe		
Yoruba	363	91.2
Igbo	12	3.0
Hausa	10	2.5
Others*	13	3.6
Religion		
Islam	200	50.3
Christianity	197	49.5
Traditional	1	0.3

**Others: Fulani, Igede, Igbira, Cotonou and Togolese*

Table 4.1.2: Nature of apprenticeship of respondents (n=398)

Nature of apprenticeship	Freq	Percent (%)
Tailoring	149	37.4
Trading	82	20.6
Hairdressing	72	18.1
Catering	42	10.6
Patent medicine	42	10.6
Make up	5	1.3
Shoe and bag making	2	0.5
Computer training	2	0.5
Decoration	1	0.3
Wristwatch repairing	1	0.3

UNIVERSITY OF IBADAN LIBRARY

Table 4.1.3: Educational attainment of Parents of respondents

Parents' level of education	Freq	%
Fathers' level of education (n=397)		
No formal education	39	9.8
Primary education	24	6.0
Some secondary school	23	5.8
Secondary school	204	51.4
Tertiary education	107	27.0
Mothers' level of education (n=398)		
No formal education	49	12.3
Primary education	49	12.3
Some secondary school	15	3.8
Secondary school	203	51.0
Tertiary education	82	20.6

Table 4.1.4: Occupation of Parents of respondents

Occupation of parents	Freq	Percent (%)
Fathers' occupation (n=397)		
Artisan	127	32.0
Trading	108	27.2
Civil servant	88	22.2
Farming	59	14.9
Personal work	9	2.3
Cleric	5	1.3
Retired	1	0.3
Mothers' occupation (n=398)		
Trading	276	69.3
Artisan	57	14.3
Civil servant	34	8.5
Farming	18	4.5
Housewife	9	2.3
Cleric	2	0.5
Health worker	2	0.5

Table 4.1.5 shows age at menarche among respondents, majority of the respondents 318 (79.9%) started menstruating between the age of 10-14 years while only 80 (20.1%) of them started between the age of 15-19 years.

4.2 Awareness and Knowledge of Menstruation among Respondents

The level of awareness of menstruation before menarche among respondents is presented in Table 4.2.1. On inquiry, 308(77.4%) of respondents said they were aware of menstruation before menarche. Majority of the respondents (68.5%) said their mother was their source of information on menstruation. This was followed by teacher (51.3%), while 37.7% had their sisters as their source of information. Only 1.6% had their boss as their source of information.

Table 4.2.2 talks about knowledge of menstruation among respondents. Majority (93.5%) of respondents understands that menstruation is a normal monthly bleeding, 5.8% don't know what it is while 3 (0.8%) of the respondents believe it is blood loss due to child birth. Only 90 (22.6%) of the respondents understand correctly that menstrual blood comes from the uterus. Majority of them (61.6%) believe menstrual blood comes from the vagina. When asked of the causes of menstruation, 139 (34.9%) of respondents don't know the cause while 233 (58.5%) understood that hormones are responsible for menstruation. Over half of the respondents (55.5%) don't know the normal length of menstrual cycle while 346 (86.9%) of them believed that sanitary pad is the ideal absorbent for menstrual bleeding.

Knowledge of different products used by people during menstruation was also inquired from respondents. This is presented in figure 4.2.1 which shows that 96.7% knew that disposable sanitary material is used as menstrual absorbent, 89.9% knew that cloth is also being used while 82.4% are also aware of tissue being used as an absorbent material by some individual. Table 4.2.3 shows knowledge of respondents of potential health risks associated with poor menstrual hygiene of which most of the respondents knew well most of health risk associated with poor menstrual hygiene.

Table 4.1.5: Age at menarche among respondents (n=398)

Age at menarche	Freq	Percent (%)
10-14	318	79.9
15-19	80	20.1

Mean age=13.4± 1.4

UNIVERSITY OF IBADAN LIBRARY

**Table 4.2.1: Awareness of menstruation before menarche among participants
(n=398)**

Information on menstruation	Freq	Percent (%)
Ever heard about menstruation before menarche		
Yes	308	77.4
No	90	22.6
Sources of information*		
Mother	211	68.5
Teacher	158	51.3
Sister	116	37.7
Friends	93	30.2
Health workers	46	14.9
Books	31	10.1
Media	27	8.8
Boss	5	1.6

**Multiple response included*

Table 4.2.2: Knowledge of menstruation among respondents (n=398)

Knowledge of menstruation	Freq	Percent (%)
What menstruation is		
Normal monthly bleeding from the uterus*	372	93.5
Blood loss due to child birth	3	0.8
I don't know	23	5.8
Where menstrual blood comes from		
Vagina	245	61.6
Uterus*	90	22.6
Stomach	2	0.5
Bladder	2	0.5
I don't know	59	14.8
What menstruation can be regarded as		
Normal physiological process*	354	88.9
Pathological process	3	0.8
Mystical rite	1	0.3
I don't know	40	10.1
Causes of menstruation		
Curse of God	25	6.3
Disease	1	0.3
Hormones*	233	58.5
I don't know	139	34.9
Length of normal menstrual cycle		
21-35 days*	174	43.7
>35 days	3	0.8
I don't know	221	55.5
Ideal absorbent for menstrual bleeding		
Sanitary pad*	346	86.9
Others*	52	1.1

**Correct responses*

**Others: Cloth, Tampon, tissue*

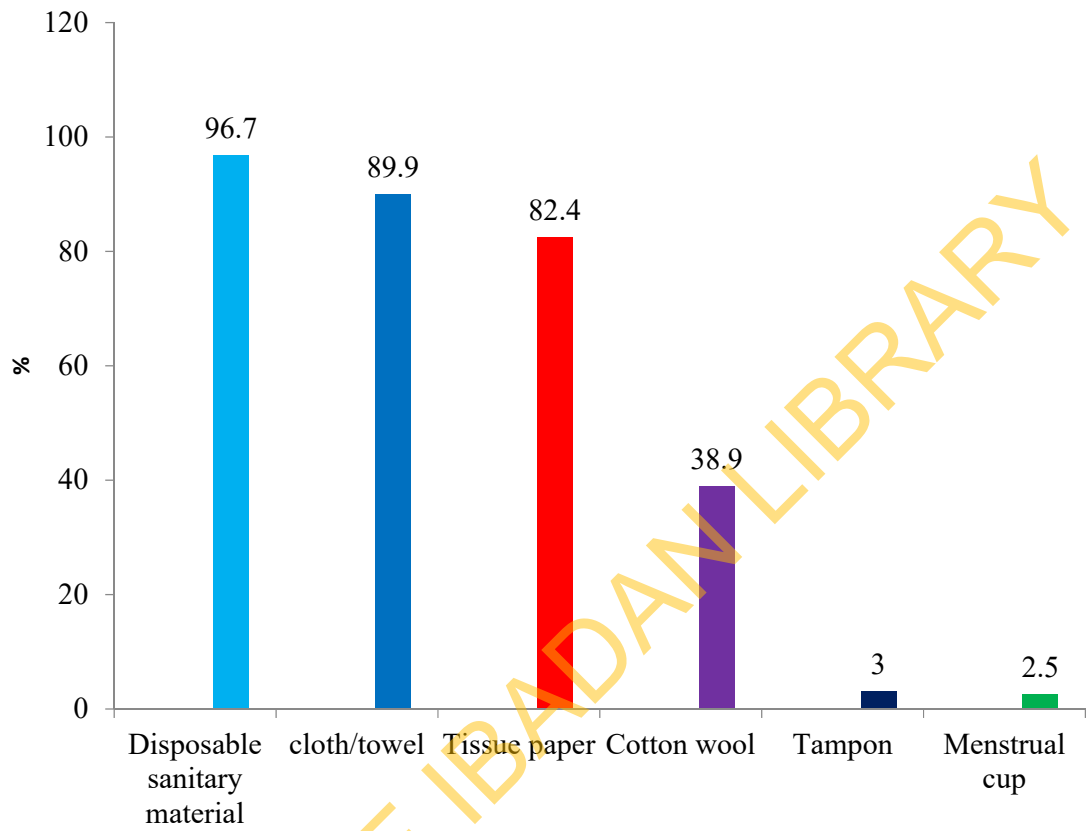


Fig 4.2.1: Knowledge of Absorbent products used for menstrual bleeding

Table 4.2.3: Knowledge of potential health risks associated with poor menstrual hygiene among respondents

Knowledge of potential health risks associated with poor menstrual hygiene*	Freq	Percent (%)
Use of unclean sanitary pads may cause local infection	374	94.0
Use of unclean sanitary pads may cause bacteria to travel up the vagina and enter the uterine cavity	361	90.7
Infrequent change of pads leads to skin irritation and then infection	335	84.2
Use of highly absorbent tampons during a time of light blood loss may lead to toxic shock	111	27.9
Wiping from back to front following urination or defecation may increase likelihood of bacteria introduction into the vagina or urethra	255	64.1
Unsafe disposal of used sanitary materials or blood increase the risk of infecting others especially with hepatitis B	266	66.8
Unprotected sex increase the risk of sexually transmitted infections	354	88.9
Frequent douching can facilitate the introduction of bacteria into the vagina	238	59.8
Lack of hand washing after changing a sanitary material can facilitate the spread of infections	261	65.6

**multiple response included*

Menstrual knowledge score of respondents is presented in table 4.2.4. Over half of the respondents (50.8%) possess good knowledge about menstruation, 42.7% have a fair knowledge while 6.5 % have poor knowledge.

4.3 Menstrual Hygiene Practices of Respondents

Table 4.3.1 indicated that 168 (42.2%) of the respondents use washable and re-usable material while 230 (57.8%) do not use washable and re-usable material. Majority of them (73.8%) said they dry the materials inside the house while only 22.6% dry them outside the house in the sunlight.

The actual distribution of absorbent use during menstruation among respondents is presented in table 4.3.2. Most of the respondents use combination of two or more materials. However, 342 (85.9%) use sanitary pad, 167 (42.0%) use cloth/towel, 59 (14.8%) use toilet paper while other materials used include cotton wool and mattress.

Some of the important hygiene practices of respondents are presented in table 4.3.3. Majority of the respondents (64.1%) use two sanitary materials daily for menstrual bleeding indicating that they only change their absorbent material once daily. Only few of the respondents change their menstrual absorbents twice or more during menstrual bleeding.

Only 118 (29.6%) of the respondents wash their external genitalia with only water during menstruation. Others wash with either soap and water (49.5%) or water and antiseptic (11.3%). Majority of the respondents (61.8%) take their bath twice daily during menstruation. In respect to hand washing during menstruation, majority of the respondents 373 (93.7%) said they wash their hands with soap and water after changing their absorbent material.

Table 4.3.4 explains how menstrual waste is being managed among respondents. The various method of sanitary disposal method among respondents include burning (22.6%), burying (13.3%), flush in water closet (30.9%), throw in dustbins (12.1%), drop in open field (2.5%), throw into pit latrine (5.3%). Some (2.0%) of the respondents also wash the pad before throwing away while few (0.8%) throw into the bush directly. Majority of the respondents (60.2%) do not wrap their used absorbent material before disposing, 37.0% wrap it with plastic bag/nylons while only 2.8% wrap with paper.

Table 4.2.4: Menstrual Knowledge score of respondents (n=398)

Menstrual Knowledge score	Freq	Percent (%)
0-5 (Poor)	26	6.5
6-10 (Fair)	170	42.7
11-15 (Good)	202	50.8

**Mean Knowledge= 10.37*

UNIVERSITY OF IBADAN LIBRARY

Table 4.3.1: Distribution of use of washable/re-usable material among respondents (n=398)

Use of washable/re-usable material	Freq	Percent (%)
Yes	168	42.2
No	230	57.8
Drying of absorbent		
Inside the house	124	73.8
Outside the house in the sunlight	38	22.6
Outside the house without sunlight	6	3.6

UNIVERSITY OF IBADAN LIBRARY

Table 4.3.2: Types of absorbent materials used during menstruation

Types of absorbent materials used*	Freq	Percent (%)
Purchased sanitary pad	342	85.9
Cloth/towel	167	42.0
Toilet paper	59	14.8
Cotton	13	3.3
Mattress	4	1.0
Menstrual cup	2	0.5
Tampon	1	0.3

**Multiple response included*

UNIVERSITY OF IBADAN LIBRARY

Table 4.3.3: Hygiene practices during menstruation among respondents (n=398)

Hygiene practices during menstruation	Freq	Percent (%)
Number of absorbent materials used daily during menses		
1	21	5.3
2	255	64.1
3	106	26.6
≥4*	16	4.1
Material for cleaning external genitalia		
Soap and water	197	49.5
Only water*	156	39.2
Water and antiseptic	45	11.3
Frequency of bath during menstruation		
Once	118	29.6
Twice	246	61.8
Thrice or more*	34	8.5
Hand washing after changing absorbent material		
Wash my hands with soap and water*	373	93.7
Wash my hands with water only	22	5.5
Clean my hands with rag	1	0.3
I don't wash my hands at all	2	0.5

**Correct responses*

Table 4.3.4: Disposal of used sanitary material among respondents

Disposal of used sanitary material	Freq	Percent (%)
I dispose used sanitary pads by		
Flush in water closet	123	30.9
Burning	90	22.6
Burying	53	13.3
Throw in dustbins*	48	12.1
Throw into pit latrine	21	5.3
Drop in open field	10	2.5
Wash and throw away	8	2.0
Throw inside the bush	3	0.8
Material for wrapping used absorbents before disposal		
No wrap	215	60.2
Plastic bag/nylons	132	37.0
Papers*	10	2.8

**Correct responses*

Most of the respondents (50.5%) said they avoid prayers during menstruation. This was followed by those who do not eat certain food (35.4%) during menstruation while 17.8% said they avoid going to party or occasion when they are menstruating. This can be seen as presented in table 4.3.5. Table 4.3.6 highlights menstrual hygiene score of respondents of which majority of respondents (85.7%) possess poor practice while only 14.3% of them possess good menstrual hygiene practices.

4.4 Factors Influencing Menstrual Hygiene Practices of Participants

In table 4.4.1, over half of the respondents (68.1%) were staying with both parents while others stay with relative (10.3%), mother alone (8.3%), guardian (7.0%), father alone (2.3%), husband (2.5%), alone (1.3%) while one person (0.3%) reported staying with boyfriend. Among respondents that reported that they buy sanitary material, mothers (65.8%) were the ones who mostly provided them with the money to purchase it. When asked why they choose the type of absorbent they use, most of the respondents (67.9%) said because it is what they know how to use, some (50.5%) had their reason to be because it is easy to clean, others (45.0) said because it is easy to dispose while few (14.1%) reported their reason to be because they don't have to buy it (Table 4.4.2).

Table 4.4.3 shows environmental factors that can predispose respondents to good menstrual hygiene. On inquiry, only 26.9% have access to cleaning facilities throughout the period of menstruation, few (15.6%) of the respondents were given pre-menarcheal training and only 14.3 % of the respondents said their work gives them time to change their absorbent material as often as expected.

In order to understand factors that may likely reinforce good menstrual hygiene among respondents, information below were collected from respondents. Over half (81.7%) of the respondents said their mother will scold them if they are not clean during menstruation. Respondents who said they have access to media advert on menstruation and menstrual hygiene practices are 55.5% while only 48.0% of them said their boss encourage them to have good hygiene during menstruation (Table 4.4.4).

Table 4.3.5: Restrictions practiced during menstruation among respondents

Restrictions practiced during menstruation*	Freq	Percent (%)
Avoid prayers	201	50.5
Avoid certain food	141	35.4
No restriction	92	23.1
Avoid cooking and other house chores	26	6.5
Avoid certain type of dress	2	0.5
Avoid stress and travelling	2	0.5
Avoid wearing white garment to church	1	0.3

**Multiple response included*

UNIVERSITY OF IBADAN LIBRARY

Table 4.3.6: Menstrual hygiene practice score of respondents (n=398)

Menstrual hygiene practice score	Freq	Percent (%)
1-6 (Poor)	341	85.7
7-12 (Good)	14.3	14.3

**Mean practice score=4.95*

UNIVERSITY OF IBADAN LIBRARY

Table 4.4.1: Predisposing factors influencing menstrual hygiene practices of respondents

Predisposing factors influencing menstrual hygiene practices	Freq	%
Person living with presently		
Both Parents	271	68.1
Relative	41	10.3
Mother alone	33	8.3
Guardian	28	7.0
Husband	10	2.5
Father alone	9	2.3
Alone	5	1.3
Boyfriend	1	0.3
Buying of sanitary material		
Yes	350	87.9
No	48	12.1
Source of money to purchase sanitary material		
Mother	231	65.8
Pocket money	48	13.7
Relative	23	6.6
Guardian	20	5.7
Father	18	5.1
Boyfriend	6	1.7
Husband	3	0.9
Boss	2	0.6

Table 4.4.2: Enabling factors influencing menstrual hygiene practices of respondents

Why do you choose the type of absorbent you use*	Freq	%
It is the one I know how to use	269	67.6
It is easy to clean	201	50.5
It is what I can afford to buy	189	47.5
It is easy to dispose	179	45.0
It is the one available	77	19.3
I don't have to buy it	56	14.1

**Multiple response included*

UNIVERSITY OF IBADAN LIBRARY

Table 4.4.3: Environmental factors influencing menstrual hygiene among participants

Environmental factors influencing menstrual hygiene*	Freq	%
Aware of potential health risks related to poor hygiene	328	82.4
Know what it means to have a good menstrual hygiene	177	44.5
I have access to cleaning facilities throughout the period of menstruation	107	26.9
Given pre-menarcheal training	62	15.6
My work gives me time to change my absorbent material as often as expected	57	14.3
It has been long I started menstruation	41	10.3

**Multiple response included*

UNIVERSITY OF IBADAN LIBRARY

Table 4.4.4: Reinforcing factors influencing menstrual hygiene practices among respondents

Reinforcing factors influencing menstrual hygiene practices*	Freq	%
My mother will scold me if I am not clean during menstruation	325	81.7
My friends encourage me to change my menstrual absorbent often	243	61.1
I have access to media advert on menstruation and menstrual hygiene	221	55.5
My boss encourages me to have good hygiene especially during menstruation	191	48.0

**Multiple response included*

UNIVERSITY OF IBADAN LIBRARY

Factors which are related to respondents and can affect their menstrual hygiene practices including perception and belief are presented in table 4.4.5. One hundred and eighteen of the respondents said it is harmful to dance or run during menstruation, 109 said menstrual blood contains dangerous substances, 70 of them said pain during menstruation means one is sick and 18 of them said menstruation is a disease.

Only 65 (16.3%) of the respondents said they miss work during their period with reasons being fear of staining clothes (53.8%), pain (84.4%), feeling of uncomfortable or tiredness (71.9%), lack of places to wash or change at work (34.4%), lack of disposal material for sanitary products (32.8%), no pads (26.6%) and fear of being made fun of (15.6%).

Other factors especially those related to families of respondents are presented in table 4.4.6. Over half (74.1%) of the respondents are from nuclear family type while few (25.9%) are from extended family. Respondents have their pocket money ranging between 50 to 800 naira with majority collecting between 50 to 210 naira daily which made them to be categorized as being below poverty level. Table 4.4.7 highlights some community and organizational factors that may influence menstrual hygiene practices of respondents. It was reported by 35.4% of the respondents that there are no facilities or programmes in their community for promoting safe and private menstrual hygiene for girls while 35.2% do not know if there any programme or facilities for this purpose.

Table 4.4.8 shows that 5 out of the respondents want certain aspects of their tradition to be included in menstrual hygiene education. Some of the specific tradition mentioned by respondents include parents asking them not to go near guys (0.5%), not to talk to guys (0.3%), Islamic tradition of not observing solat during menstruation (0.3%) and myth surrounding disposal of used absorbent material (0.3%).

Table 4.4.5: Intrapersonal factors influencing menstrual hygiene among respondents

Intrapersonal factors influencing menstrual hygiene	Freq	Percent (%)
Menstruation is a disease	18	4.5
Pain during menstruation means one is sick	70	17.6
It is harmful for a woman's body to dance or run during her menstruation	118	29.6
Menstrual blood contains dangerous substances	109	27.4
I am happy with myself during my period	285	71.6
I am as good as other people during my period	266	66.8
I am more confident during my menstruation than when I am not	223	56.0
Missing work because of period		
Yes	65	16.3
No	333	83.7
Reason for missing work during period*		
I am afraid of staining my clothes	35	53.8
I am afraid of others making fun of me	10	15.6
Periods can cause pain	54	84.4
Periods can make me feel uncomfortable or tired	46	71.9
There is nowhere for girls to wash and change at work	22	34.4
There is nowhere to dispose of sanitary products	21	32.8
I do not have sanitary pads	17	26.6

**Multiple response included*

Table 4.4.6: Interpersonal factors influencing menstrual hygiene among respondents (n=398)

Interpersonal factors influencing menstrual hygiene	Freq	%
Type of family		
Extended	103	25.9
Nuclear	295	74.1
Daily pocket money (naira)		
50-100	126	31.7
110-210	150	37.7
220-320	43	10.8
330-430	9	2.3
440-540	25	6.3
550-650	2	0.5
660-760	3	0.8
770-870	1	0.3
No pocket money	39	9.8

Table 4.4.7: Community and organizational factors influencing menstrual hygiene

Community and organizational factors influencing menstrual hygiene	Freq	%
Facilities and programmes in community for promoting safe and private menstrual hygiene for girls*		
Any kind of absorbent material distribution programme	17	4.3
Private disposal facilities for disposable absorbent materials	45	11.3
Menstrual hygiene education session	62	15.6
Private washing facilities for cloth napkin	70	17.6
I don't know	140	35.2
No programme	141	35.4

**Multiple response included*

Table 4.4.8: Cultural issues related to menstruation among respondents

Cultural issues related to menstruation among respondents	Freq	%
Existence of traditions to be included in menstrual hygiene education		
Yes	5	1.3
No	393	98.7
Specific tradition or belief		
Not to go near guys	2	0.5
Not to talk to guys	1	0.3
Islamic tradition of not observing solat during period	1	0.3
Myth surrounding disposal of absorbent material	1	0.3

UNIVERSITY OF IBADAN LIBRARY

4.5 Hypotheses Testing

Hypothesis one: There is no significant difference between socio-demographic characteristics and practice or knowledge of respondents.

Table 4.5.1 shows that out of 48 respondents that are 10-14 years of age, 44 (91.7%) have poor practice while only 4 (8.3%) possessed good practice. Out of those in the 15-19 years category, 84.9% had poor practice while only 15.1% had good practice. The p-value (0.207) was found not to be statistically significant, we therefore fail to reject that there is no statistically significant difference between the ages and practice of respondents.

The relationship between level of education and menstrual hygiene of respondents was also found not to be statistically significant as Fisher's Exact P-value equals 0.499 at 3 degree of freedom. However, improved menstrual hygiene was observed with improving level of education. This is presented in table 4.5.2.

Table 4.5.3 explains that out of 4 participants that were married, 13 (92.9%) had poor practice, and 327 (85.4%) out of those that were single (383) had poor practice. The relationship was found not to be statistically significant as Fisher's Exact P-value equals 0.745 at 2 degree of freedom. Relationship between religion and menstrual hygiene was also found not to be statistically significant as Fisher's Exact P-value equals 0.217 at 2 degree of freedom (Table 4.5.4).

Table 4.5.5 shows that there is a statistically significant difference ($P=0.001$) between fathers' level of education and menstrual knowledge of respondents at degree of freedom equals 6. The relationship between menstrual knowledge score of respondents and mothers' level of education was also found to be statistically significant ($P=0.001$) at degree of freedom equals 6.

Table 4.5.1: Relationship between age and menstrual hygiene practice score

Age Category	Menstrual Hygiene Score			X^2	df	P-value
	Poor (%)	Good (%)	Total (%)			
10-14	44 (91.7)	4 (8.3)	48 (100)	1.595	1	0.207*
15-19	297 (84.9)	53 (15.1)	350 (100)			
Total	341 (85.7)	57 (14.3)	398 (100)			

*Not significant

UNIVERSITY OF IBADAN LIBRARY

Table 4.5.2: Relationship between level of education and menstrual hygiene practice score

Level of education	Menstrual Hygiene Score			Fisher's exact	df	P-value
	Poor (%)	Good (%)	Total (%)			
No formal education	5 (100.0)	0 (0.0)	5 (100)	2.222	3	0.499*
Primary school	13 (92.9)	1 (7.1)	14 (100)			
Secondary school	294 (86.0)	48 (14.0)	342 (100)			
Tertiary education	29 (78.4)	8 (21.6)	37 (100)			
Total	341(85.7)	57(14.3)	398 (100)			

*Not significant

UNIVERSITY OF IBADAN LIBRARY

Table 4.5.3: Relationship between marital status and menstrual hygiene practice score

Marital status	Menstrual Hygiene Score			Fisher's exact	df	P-value
	Poor (%)	Good (%)	Total (%)			
Married	13 (92.9)	1 (7.1)	14 (100)	0.863	2	0.745*
Single	327 (85.4)	56 (14.6)	383 (100)			
Cohabiting	1 (100.0)	0 (0.0)	1 (100)			
Total	341(85.7)	57(14.3)	398(100)			

*Not significant

UNIVERSITY OF IBADAN LIBRARY

Table 4.5.4: Relationship between religion and menstrual hygiene practice score

Religion	Menstrual Hygiene Score			Fisher's exact	df	P-value
	Poor (%)	Good (%)	Total (%)			
Islam	165 (82.5)	35 (17.5)	200 (100)			
Christianity	175 (88.8)	22 (11.2)	197 (100)	3.792	2	0.217*
Traditional	1 (100.0)	0 (0.0)	1 (100)			
Total	341(85.7)	57(14.3)	398 (100)			

*Not significant

UNIVERSITY OF IBADAN LIBRARY

Table 4.5.5: Relationship between respondents' parents' level of education and knowledge

Scores

Fathers' level of education	Knowledge score of respondents				X ²	df	P-value
	Poor (%)	Fair (%)	Good (%)	Total (%)			
No formal education	5 (12.8)	21 (53.8)	13 (33.3)	39	23.438	6	0.001*
Primary school	5 (20.8)	5 (20.8)	14 (58.3)	24			
Secondary school	11 (4.8)	106 (46.7)	110 (48.5)	227			
Tertiary education	4 (3.7)	38 (35.5)	65 (60.7)	107			
Total	25(6.3)	170(42.8)	202(50.9)	397			
Mothers' level of education							
No formal education	3 (6.1)	28 (57.1)	18 (36.7)	49	17.525	6	0.001*
Primary school	7 (14.3)	19 (38.8)	23 (46.9)	49			
Secondary school	14(6.4)	97 (44.5)	107 (49.1)	218			
Tertiary education	2 (2.4)	26 (31.7)	54 (65.9)	82			
Total	26(6.5)	170(42.7)	202(50.8)	398			

**Significant*

Hypothesis 2: There is no statistical difference between knowledge of menstruation and menstrual hygiene practices of respondents.

Table 4.5.6 indicates that the percentage of poorness of practice was found to decrease with improved knowledge of menstruation. Although the relationship between respondents knowledge and practice was found not to be statistically significant ($P=0.223$), hence, we fail to reject the null hypothesis.

4.6 Result of Logistic Regression Analysis

Regression analysis result indicates that factors which had more influence on the practice of the respondents (participants with poorer practice) included access to pre-menarcheal training ($p=0.025$), access to menstrual hygiene education session programmes in the community ($p=0.001$), lack of facilities for promoting safe and private menstrual hygiene for girls ($p=0.026$) and lack of awareness of whether there are facilities for this purpose in the community at all ($p=0.008$). Other factors were not significant (table 4.6).

Table 4.5.6: Respondents knowledge score and menstrual hygiene practices

Knowledge score	Practice Score			X ²	df	P-value
	Poor (%)	Good (%)	Total (%)			
Poor (0-5)	23 (88.5)	3 (11.5)	26 (100)	0.808	2	0.223*
Fair (6-10)	148 (87.1)	22 (12.9)	170 (100)			
Good (11-15)	170 (84.2)	32 (15.8)	202 (100)			
Total	341(85.7)	57(14.3)	398 (100)			

*Not significant

UNIVERSITY OF IBADAN LIBRARY

Table 4.6: LOGISTIC REGRESSION ANALYSIS OF FACTORS INFLUENCING MENSTRUAL HYGIENE PRACTICES OF RESPONDENTS

FACTORS INFLUENCING MENSTRUAL HYGIENE PRACTICES	Sign.	Exp (β)	Lower	Upper
Enabling factors				
Aware of potential health risks related to poor hygiene	0.401	0.688	0.287	1.646
Have access to cleaning facilities throughout the days	0.200	1.650	0.767	3.550
Was given pre-menarcheal training	0.025*	0.444	0.218	0.904
Reinforcing factors				
Have access to media advert on menstruation and menstrual hygiene	0.167	0.650	0.354	1.197
Encouraged by friends to change my menstrual absorbent often	0.757	1.099	0.604	2.000
Encouraged by boss to have good hygiene especially during menstruation	0.558	1.203	0.649	2.227
Father gives me extra money to purchase sanitary material for my menstruation	0.616	0.850	0.451	1.602
Intrapersonal factors				
Pain during menstruation means one is sick	0.275	1.619	0.682	3.846
Menstrual blood contains dangerous substances	0.532	1.244	0.627	2.469
Happy with myself during my period	0.495	0.780	0.382	1.592
I am as good as other people during my period	0.576	1.212	0.618	2.379
I am more confident during my menstruation than when I am not menstruating	0.135	1.569	0.870	2.830
Community/organization factors				
Private disposal facilities for disposable absorbent materials	0.941	1.047	0.316	3.469
Menstrual hygiene education session	0.001*	8.260	5.655	12.065
No facilities for promoting safe and private menstrual hygiene for girls at all	0.026*	6.402	1.402	9.184
I do not know if there are facilities for this purpose at all	0.008*	2.773	2.408	4.378

**Significant at 5%; Reference category is Good practice*

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 DISCUSSION

5.1.1 Respondents' socio-demographic characteristics

In Nigeria as in most developing countries, issues surrounding menstruation and menstrual hygiene remain a problem. Most importantly, literatures on menstrual hygiene management among adolescents at work places especially the informal settings are very scanty. In this study, all respondents were adolescent female apprentices and their ages ranged from 10 to 19 years. This is similar to ages of respondents used in previous study (Lawan et al., 2010) and varies from those of other study (Oche et al., 2012). The mean age at menarche was found to be 13.4 ± 1.4 . This was similar to a study carried out in Benin City where the mean age at menarche was found to be 13.44 ± 1.32 and the one carried out in Sokoto (Onyiriuka et al., 2013; Oche et al., 2012). This result varied from study carried out in Ogbomosho (Fehintola et al., 2017) which reported the mean age of respondents at menarche to be 12.5 years.

5.1.2 Awareness and knowledge of menstruation

This study showed that majority of the respondents (77.4%) were aware of menstruation before menarche with major source of information being mothers of respondents. This is consistent with studies carried out in Kano and Ogbomosho (Lawan et al., 2010; Fehintola et al., 2017). Other studies conducted outside Nigeria reported low level of awareness among participants (Thakre et al., 2011; Raina and Balodi 2014). In respect to respondents' knowledge of menstruation, most of the respondents (88.9%) knew that menstruation is a normal physiological process, this is similar to a study carried out by Oche et al in 2012 in Sokoto. This result is contrary to that carried out in Kano which indicated that only few (6.5%) know that menstruation is normal especially when it occurs in early adolescence (Lawan et al., 2010). Although majority (93.5%) of the respondents understands that menstruation is a normal monthly bleeding, only 22.6% correctly know that menstrual blood comes from the uterus. This is because in this study, it was observed from respondents' response that they feel the channel through which menstrual blood comes out of the body which is the vagina is the source of menstrual blood. Study by

(Fehintola et al., 2017) also indicated that only 22.37% of respondents in the study correctly know the origin of menstrual blood.

Although, respondents know that menstruation occurs monthly, over half (55.5%) of them in this study did not know the normal length of menstrual cycle. This may likely affect their preparedness negatively for the process. Overall, half (50.8%) of respondents in this study have good knowledge of menstruation while others have either fair or poor knowledge. This is in contrast to a study carried out in Kano which reported that majority of the respondents have a fair knowledge and only 4% had good knowledge (Lawan et al., 2010).

5.1.3 Practices of menstrual hygiene

Considering menstrual hygiene practices, though some respondents reported use of combination of two or more materials, 42.2% said they use washable and re-usable material when asked whether they do so. This result is similar to findings from other studies (Thakre et al., 2011; Fehintola et al., 2017) and it differs from studies in most part Nigeria which reported high percentage of use of sanitary pad among their respondents (Lawan et al., 2010; Oche et al., 2012). The difference observed in this study and other ones within the country might be due to the fact that this variable was considered a multiple response in our own study.

Among those who used washable material, majority (73.8%) said they dry them inside the house. This is in contrast with other studies which indicated that majority of respondents in their study dry their washable absorbent material outside the house in the sunlight (Thakre et al., 2011; Raina and Balodi 2014). The poor practice of drying washable absorbent material in the house observed in this study which may predispose respondents to reproductive tract infection might be due to shyness of others seeing these materials when spread outside the house. Over all, in this study, majority of respondents (85.9%) used purchased sanitary material which is consistent with findings conducted in Sokoto (Oche et al., 2012) while studies conducted in Saonar, Uttarakhand india and Ogbomosho reported low use of sanitary pad (Thakre et al., 2011; Raina and Balodi 2014; Fehintola et al., 2017). The high rate of purchased sanitary pad in this study can be ascribed to the recent popular sales of pads which contain 2 pieces and sold at a cheaper price. Cotton/towel use among participants in this study is 42% which agree with studies conducted in Ogbomosho (Fehintola et al., 2017) while 19.6 % use other materials such as toilet paper, cotton, mattress, menstrual cup or tampon.

Only few of respondents (30.7%) in this study change their menstrual absorbents twice or more during menstruation. The probable reason for this may be because of lack of facilities to change absorbent as expected at work. This practice is unhygienic as it may expose respondents to reproductive tract infection. This is similar to the study carried out in Ogbomosho where most of the respondents also changed their absorbent material once daily (Fehintola et al., 2017) and varies from that carried out in Sokoto where most of the respondents change menstrual absorbent thrice or more times (Oche et al., 2012). In this study, most respondents (49.5%) use soap and water to wash their genitalia, 11.3% use water and antiseptic while 29.6% use only water. This practice is similar to those reported in other studies which also indicated that most of their respondents use soap and water to clean their genitalia (Omidvar et al., 2010; Thakre et al., 2011; Oche et al., 2012; Raina and Balodi, 2014).

Majority of respondents (93.7%) in our study said they wash their hand with soap and water after changing menstrual absorbent. This is a good practice as it will help to prevent infections in respondents as well as its transmission to others. Proper and safe disposal of menstrual absorbent is part of good menstrual hygiene. In this study, most of the respondents dispose absorbent by flushing in water closet without wrap. This is the same as observed in similar study in Ogbomosho (Fehintola et al., 2017) and varies from other studies which showed that most respondents either burn or wrapped and throw away absorbents (Dasgupta and Sarkar, 2008; Mudey et al., 2010; Thakre et al., 2011; Oche et al., 2012; Madhusudan and Mahadeva, 2014). It is best that sanitary pad should be wrapped and thrown away in dustbins, hence the practice of not wrapping and flushing in toilets, throw in open fields, pit latrines or bushes as observed in this study should be discouraged.

In respect to restrictions practiced during menstruation, in our society, a lot of restrictions are either imposed on menstruating girls as stated by culture or self-imposed. In this study, most of respondents in this study avoid prayers (50.5%). This is a common practice among Muslims all over the world. This finding is in accordance with similar study in Sokoto (Oche et al., 2012) and varies from similar study conducted in Ogbomosho which indicated that most of respondents avoid celebration and festivities. This difference observed in our study and that conducted in Ogbomosho may be due to the fact that majority of respondents in our study were Muslims. Over all, majority of respondents (85.7%) in this study had poor practices of hygiene when it comes to menstruation. This finding agrees

with study conducted in Ogbomoso (Fehintola et al., 2017) with our result indicating even poorer practice which is in concordance with the result of similar study carried out in India in which rate of reproductive tract infection was also found to be higher among out-of-school adolescents (Khanna, Goyal and Bhawsar, 2005). Our respondents in this study belong to the category of out-of-school.

5.1.4 Factors influencing menstrual hygiene knowledge and practice of respondents

Factors found to be significantly associated with knowledge of respondents include father's level of education ($P=0.001$) and mother's level of education ($P=0.001$). There was a tremendous improvement in the knowledge of respondents as the educational level of their father and mother increased. Similar study conducted in Ogbomosho (Fehintola et al., 2017) also reported a statistical significant between respondents knowledge and the level of their parents education.

Although not statistically significant (Fisher's exact $P=0.499$) menstrual hygiene practice of respondents was found to improve with improving level of education. For instance, 100% of those without formal education had poor practice while 7.1% of those who attended primary school had good practice. This increased to 21.6% among those that had one form of tertiary education or the other. This is an indication that menstrual education being taught in school has a positive influence on menstrual hygiene practice.

Menstrual hygiene practice of respondents was also found to improve with improved level of menstrual knowledge. Although not statistically significant (Fisher's exact $P=0.223$), percentage of menstrual hygiene practices of respondents increased as their knowledge of menstruation increased. Therefore, even though we fail to reject that there is no relationship between respondents' knowledge and practice of menstrual hygiene, we cannot categorically say that a relationship did not exist. Study by Lawan et al., 2010 showed an association between knowledge of menstruation and menstrual hygiene practice of respondents with a (Fisher's exact $P < 0.05$).

Factors found to be significantly associated with respondents practice include lack of private washing facilities for cloth and napkin ($P=0.050$), private disposal facilities for disposable absorbent materials ($P=0.015$), lack of menstrual hygiene education session in most of the visited communities ($P=0.003$) as result of regression analysis in this study indicated that respondents categorized into two groups were the ones whose practices were poorer. First were those who said they were given pre-menarcheal training and those who

have access to menstrual hygiene education session in their community. This result is surprising but might be an indication that appropriate and/or inadequate information were not given by those who provided it as thought by respondents. This result also varies from study conducted in Enugu which indicated that respondents in the study who had pre-menarcheal training also had positive menstrual hygiene practices (Aniebue, Aniebue and Nwankwo 2009). The second category are those who said there is no facilities at all in their community to promote safe and private menstrual hygiene and those who do not know whether there are facilities for this purpose. This is as expected as majority of informal settings in this country such as markets and places where most handiwork is being learnt lack facilities for proper menstrual hygiene.

5.2 Conclusion

Despite the good knowledge possessed by half of the participants, majority of them showed poor menstrual hygiene practice. This can be attributed to the fact that mothers who form the highest source of information on pre-menarcheal training provide inadequate and at times inappropriate information. Mores so, most community settings lack facilities required for safe and private menstrual hygiene and when they are present they are underequipped or mismanaged. Since it was observed from this study that the role of education in the possession of good menstrual hygiene cannot be totally erased, there is need to encourage apprentices to go to school in order for their menstrual hygiene practice to be improved.

5.3 Recommendations

Based on the findings from this research, I will like to give the following recommendations which should be a joint role of health promoters as well as stakeholders present within the community structures:

1. There is need for educating mothers so as for them to be able to provide appropriate information on menstruation and menstrual hygiene practices to their adolescent girls.
2. Training of apprentices to improve their skills and to further educate their peers.
3. Provision of more public cleaning and disposable facilities to propagate effective menstrual hygiene within the community.

4. The need to involve CBOs, NGOs and religious groups to provide menstrual hygiene education at community level since most of this adolescents are not present in school where they can have access to this knowledge.
5. Enrolment of this female adolescent apprentices in school will also go a long way to improve their menstrual hygiene practice.

UNIVERSITY OF IBADAN LIBRARY

REFERENCES

- Abioye-Kuteyi, E.A., 2000. Menstrual knowledge and practices amongst secondary school girls in Ile Ife, Nigeria. *Journal of the Royal Society for the Promotion of Health*; 120:23-26
- Abioye-Kuteyi, E.A., Ojofeitimi, E.O., Aina, O.I., Kio, F., Aluko, Y., and Mosuro, O. 1997. The influence of socio-economic and nutritional status on menarche in Nigeria school girls. *Nutrition and Health*; 11(3):185-197.
- Adhikari, P., Kadel, B., Dhungel, S.I., et al., 2007. Knowledge and practice regarding menstrual hygiene in rural adolescent girls of Nepal. Kathmandu. *Kathmandu University Medical Journal (KUMJ)*; 5:382–386.
- Adinma, E.D. and Adinma, J.I. 2008. Perceptions and practices on menstruation amongst Nigerian secondary school girls. *African Journal of Reproductive Health*; 12:74–83.
- Aniebue, U.U., Aniebue, P.N. and Nwankwo, T.O. 2009. The impact of pre-menarcheal training on menstrual practices and hygiene of Nigerian school girls. *The Pan African Medical Journal* 2–9, PMC2984277.
- Averbach, S., Sahin-Hodoglugil, N. and Musara, P. et al. 2009. Duet for menstrual protection: a feasibility study in Zimbabwe. *Contraception*; 79:463–468.
- Crofts, T. and Fisher, J. 2012. Menstrual hygiene in Ugandan schools: an investigation of low-cost sanitary pads. *Journal of Water, Sanitation and Hygiene for Development*; 2:50–58.
- Das, P., Baker, K.K., Dutta, A., Swain, T., Sahoo, S. and Das, B.S. et al. 2015. Menstrual Hygiene Practices, WASH Access and the Risk of Urogenital Infection in Women from Odisha, India. *PLoS One*:10(6):e0130777.
- Dasgupta, A. and Sarkar, M. 2008. Menstrual Hygiene: How Hygienic is the Adolescent Girl? *Indian Journal of Community Medicine*; 33(2): 77-80.
- Fehintola, F. O., Fehintola, A. O., Aremu, A. O., Idowu, A., Ogunlaja, O. A., and Ogunlaja, I. P. 2017. Assessment of knowledge, attitude and practice about menstruation and menstrual hygiene among secondary high school girls in Ogbomoso, Oyo state, Nigeria. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 6(5), 1726-1732.

- Fisseha, M.A., Kebede Y. and Yeshita, H.Y. 2017. Menstrual Hygiene Practice and Associated Factors among Secondary School Girls in Wegera District, Northwest Ethiopia; a Cross-Sectional Study. *Computational Biology and Bioinformatics*. Vol. 5, No. 1, pp. 6-11. doi: 10.11648/j.cbb.20170501.12
- Gharoro L.A. 2013. Menstrual hygiene practices among junior secondary school students in Benin City. *Journal of Educational and Social Research* Vol.3, No 8
- Groen, S. 2005. The course of recurrent urinary tract infections in non-pregnant women of childbearing age, the consequences for daily life and the ideas of the patients. *Nederlands tijdschriftvoorgeneeskunde* 149: 1048–1051. PMID: 15909394
- Gupta, J. and Gupta, H. 2001. Adolescents and menstruation, *The Journal of Family Welfare*, 47(1):1-13
- House Sarah, Thérèse Mahon and Sue Cavill 2012. Reproductive Health Matters Vol. 21, No. 41, Young people, sex and relationships, pp.257-25
- Ikaroha, C.L., Mbadiwe, I.N.C., Igwe, C.U. et al. 2005. Menarcheal age of secondary school girls in urban and rural areas of Rivers State, Nigeria. *Online Journal of Health and Allied Sciences*; 4(2):1-4.
- Jewitt, S. and Ryley, H. 2014. It's a girl thing: menstruation, school attendance, spatial mobility and wider gender inequalities in Kenya. *Geoforum*; 56:137–147.
- Johnson, J.O. 2010. Menstrual Hygiene. Retrieved on 8/8/2011 from <http://www.hygiene.html>.
- Jothy, K. and Kalaiselv, I.S. 2012. Is menstrual hygiene and management an issue for the rural adolescent school girls? *Elixir International Journal*; 44:7223-8.
- Kaplowitz, P. 2006. Pubertal development in girls: secular trend. *Current Opinion in Obstetrics & Gynaecology*; 18(5):487-491.
- Khanna, A., Goyal, R.S. and Bhawsar, R.2005. Menstrual Practices and Reproductive problems: A study of Adolescents Girls in Rajasthan. *Journal of Health Management*, 7(1), 91-107. <https://doi.org/10.1177/097206340400700103>
- Kish, Leslie. 1965. Survey Sampling. New York: John Wiley and Sons, Inc.

- Lawan, U.M., Yusuf, N.W. and Aisha, B.M. 2010. Menstruation and Menstrual Hygiene amongst Adolescent School Girls in Kano, Northwestern Nigeria (*African Journal of Reproductive Health*; 14[3]: 201-207).
- Lee, L.K., Chen, P.C., Lee, K.K. and Kaur, J. 2006. Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. *Singapore Medical Journal*; 47 (10): 869-874.
- Madhusudan, M. and Mahadeva, T.S. 2014. Menstrual hygiene: knowledge and practice among secondary school girls of Hosakote, rural Bangalore. *International Journal of Basic and Applied Medical Sciences*; 4(2):313-20.
- McKee, D., Baquero, M., Anderson, M. and Karasz, A. 2009. Vaginal hygiene and douching: Perspectives of Hispanic men, Culture, Health and Sexuality, vol 11, no 2, pp 159-171.
- McMahon, S.A., Winch, P.J., Caruso, B.A., Obure, A.F., Ogutu, E.A., Ochari, I.A. et al. 2011. The girl with her period is the one to hang her head: reflections on menstrual management among school girls in rural Kenya. *BMC International Health and Human Rights*; 11(7):1-10.
- Mudey, A.B., kesharwani, N., Mudey, G.A. and Goyal, R.C. 2010. A cross sectional study on awareness regarding safe and hygienic practices amongst school going adolescent girls in rural area of Warha District, *India Global Journal of Health.*, 2(2): 225–231.
- Neginhal, V.S. 2010. Knowledge, attitude and practices of menstrual hygiene among secondary school girls in Semi Urban Area, Belgaum District: A cross sectional study, Master of Public Health thesis, KLE University.
- Oche, M. O., Umar, A. S., Gana, GJ. And Ango, J. T. 2012. Menstrual health: the unmet needs of adolescent girls' in Sokoto, Nigeria. *Scientific and Essays* 7 (3), 410–Research 418.
- Omidvar, S. and Begum, K. 2010. Factors influencing hygienic practices during menses among girls from South India-a cross sectional study. *International journal of Collaborative Research on Internal Medicine and Public Health*, 2 (12):411-423
- Onyiriuka, A.N., Frances, A.E. and Philip, O.A 2013. Assessment of age at menarche of Nigerian urban School girls. *Pacific journal on Medical Sciences* Vol.11.No.1.

- Poureslami, Mohammad, and F. Osati-Ashtiani. 2002. Assessing Knowledge, Attitudes, and Behavior of Adolescent Girls in Suburban Districts of Tehran about Dysmenorrhea and Menstrual Hygiene. *Journal of International Women's Studies*; 3(2), 51-61.
- Prateek, S. and Saurabh, R. 2011. A Cross Sectional Study of Knowledge and Practices about Reproductive Health among Female Adolescents in an Urban Slum of Mumbai. *Journal of Family and Reproductive Health*; 5 (4).
- Raina, D. and Balodi, G. 2014. Menstrual Hygiene: Knowledge, Practice and restrictions amongst girls of Dehradun, Uttarakhand, India. *Global Journal of Interdisciplinary Social Sciences*; Vol.3 (4):156-162
- Santina, T., Nancy, W., Fouad, M.Z. and Mona, N. 2013. Assessment of Beliefs and Practices Relating to Menstrual Hygiene of Adolescent Girls in Lebanon. *International Journal of Health Sciences and Research*. December;3; (12).
- Singh, M.M., Devi, R. and Gupta, S.S.1999. Awareness and health seeking behavior of rural adolescent school girls on menstrual and reproductive health problems. *Indian Journal of Medical Sciences*, 53: 439-443.
- Sommer, M. 2010. Where the education system and women's bodies collide: the social and health impact of girls' experiences of menstruation and schooling in Tanzania. *Journal of Adolescence*; 33:521-529.
- Sommer, M. and Sahim, M. 2013. Overcoming the Taboo: Advancing the Global Agenda for Menstrual Hygiene Management for Schoolgirls. *American Journal of Public Health*.103:1556-1559.
- Ten, V. T. A. 2007. Menstrual Hygiene: A Neglected Concern for the Achievement of Several Millennium Development Goals. Europe External Policy Advisor, The Netherlands, [http:// www.eepa.be/wcm/dmdocuments/BGpaper_Menstrual-Hygiene.pdf](http://www.eepa.be/wcm/dmdocuments/BGpaper_Menstrual-Hygiene.pdf), accessed 5 May 2013.
- Tharkre, S., Reddy, M., Rathi, N., Pathak, K. and Ughade S. 2011. Menstrual hygiene: knowledge and practice among adolescent school girls of Saoner, Nagpur District. *Journal of Clinical Diagnostic Research*; 5:1027-33.

UNESCO Institute for Statistics (UIS) and United Nations Children's Fund (UNICEF) 2015. Fixing the Broken Promise of Education for All: Findings from the Global Initiative on Out-of-School Children. Montreal: UIS. <http://on.unesco.org/oosci-global>.

WHO 2013. Facts on adolescent health. Accessed from http://www.who.int/features/factfiles/adolescent_health/en/index.html on 15, march

UNIVERSITY OF IBADAN LIBRARY

APPENDIX I

QUESTIONNAIRE

Serial no:

KNOWLEDGE AND HYGIENE PRACTICES OF MENSTRUATION AMONG ADOLESCENT FEMALE APPRENTICES IN LAGELU LOCAL GOVERNMENT AREA, IBADAN

SECTION A: Socio-demographic characteristics of respondent

Instruction: Kindly answer the following questions by ticking (✓) the correct response as it applies to you

1. Age as at last birthday? _____ (in years)
2. What is your highest level of educational attainment? 1. No formal education []
2. Primary School [] 3. Some Secondary School [] 4. Secondary School []
5. Tertiary Education [] 6. Others (specify) _____
3. What is your community of residence? _____
4. What is your marital status? 1. Married [] 2. Single [] 3. Separated []
4. Divorced [] 5. Cohabiting []
5. What tribe do you belong to? 1. Yoruba [] 2. Hausa [] 3. Igbo []
4. Others (specify) _____
6. What is your religion? 1. Islam [] 2. Christianity []
3. Traditional [] 4. Others (specify) _____
7. Father's level of education? 1. No formal education [] 2. Primary School [] 3. Some secondary []
4. Secondary school [] 5. Tertiary Education []
8. Mother's level of education? 1. No formal education [] 2. Primary school [] 3. Some secondary [] 4. Secondary school [] 5. Tertiary Education []
9. What type of trade/work are you learning? 1. Tailoring [] 2. Hairdressing []
3. Catering []
4. Trading [] 5. Patent medicine [] 6. Others (specify) _____
10. Father's Occupation 1. Civil servant [] 2. Artisan [] 3. Trading [] 4. Farming []
5. Others (Specify) _____

11. Mother's Occupation 1. Civil servant [] 2. Artisan [] 3. Trading [] 4. Farming []
 5. Housewife [] 6. Others (Specify) _____

SECTION B: Knowledge of menstruation among respondent

12. Have you ever heard about menstruation before menarche? 1. Yes [] 2. No [] If no, go to question 14
13. If Yes, what are your sources of information? (Multiple responses allowed)
1. Mother [] 2. Teacher [] 3. Sister [] 4. Friends []
 5. Books [] 6. Media [] 7. Boss [] 8. Health workers []
14. What is menstruation? 1. Normal monthly bleeding from the uterus [] 2. Blood loss due to child birth [] 3. Blood loss from minor cut [] 4. Blood loss due to accident [] 5. I don't know []
15. Menstrual blood comes from where? 1. Vagina [] 2. Uterus [] 3. Stomach [] 4. Bladder []
16. Menstruation can be regarded as ? _____ 1. Normal physiological process []
 2. Pathological process [] 3. Mystical rite [] 4. I don't know []
17. What is the cause of menstruation? 1. Curse of God [] 2. Disease [] 3. Hormones []
 4. I don't know []
18. What is the length of a normal menstrual cycle?
 1. 21-35 days [] 2. >35 days [] 3. I don't know []
19. Which of these products have you heard of? (Please mention all that applies to you)

Products/absorbent materials	
Tampon	
Disposable Sanitary Pad	
Menstrual Cup	
Reusable Pad that you can wash and use again e.g. home-made pad/cloth	
Cotton wool	
Tissue paper	

20. What is the ideal absorbent to be used for menstrual bleeding?

1. Sanitary pad [] 2. Cloth [] 3. Tampon 4. Others (specify)
- _____

Knowledge of potential health risks associated with poor menstrual hygiene among respondent

21. For the statements below, tick (✓) the correct response

	STATEMENTS	Yes	No
A	Use of unclean sanitary pads/materials may cause local infections		
B	Use of unclean sanitary pads/materials may cause bacteria to travel up the vagina and enter the uterine cavity		
C	Infrequent change of pads (wet pads) leads to Skin irritation and then infection if the skin becomes broken		
D	Use of highly absorbent tampons during a time of light blood loss may lead to toxic shock		
E	Wiping from back to front following urination or defecation may increase likelihood of bacteria introduction into the vagina/urethra		
F	Unsafe disposal of used sanitary materials or blood increase the risk of infecting others, especially with Hepatitis B		
G	Unprotected sex increase risk of sexually transmitted infections		
H	Frequent douching (forcing liquid into the vagina) can facilitate the introduction of bacteria into the vagina		
I	Lack of hand washing after changing a sanitary material can facilitate the spread of infections such as Hepatitis B or Thrush		

SECTION C: Menstrual hygiene practices of respondent

22a. Do you use washable and re-usable materials? 1. Yes 2. No

22b. If you use washable and re-usable material, where do you dry them? If no, go to 23

1. Inside the house [] 2. Outside the house in the sunlight [] 3. Outside house without sunlight []
4. Others (Specify) _____

23. What type of absorbent material do you use during menses? (Please tick all that applies to you)

A	Cloth/Towel		E	Toilet paper	
B	Tampon		F	Cotton	
C	Purchased sanitary pad		G	Mattress	
D	Menstrual Cup		H	Others (Specify)	

24. How many absorbent materials do you use daily during menses?

25. My menstrual flow is always _____ 1. Heavy [] 2. Moderate [] 3. Light []

26. Which material do you use for cleaning your external genitalia? 1. Only water [] 2.

Soap and Water []

3. Water and antiseptic []

27. How often do you take your bath daily during menstruation? 1. Once [] 2.

Twice [] 3. Three times or more []

28. After changing my pad, I _____

1. Wash my hands with soap and water [] 2. Wash my hands with water only []

3. Clean my hands with rag [] 4. I don't do any of the above []

29. Types of restrictions experienced during menstruation (Tick all responses that applies to you)

A	Avoid going to party/occasion		D	Avoid prayers	
B	Avoid certain food		E	Others (Specify)	
C	Avoid cooking and other house chores				

30. Where do you store your absorbent material? 1. Bathroom [] 2. I don't store [] 3. I store it with routine cloth [] 4. Others (specify)

31. I dispose my used sanitary pads by _____ 1. Burning [] 2. Burying []

3. Flush in water closet [] 4. Throw in dustbins [] 5. Drop in open field []

6. I don't dispose [] 7. Others (specify) _____

If you do not dispose, go to question 33

32. I wrap used absorbents with _____ before disposing
1. Papers []
 2. Plastic bag/nylons []
 3. No wrap []

SECTION D: Factors influencing menstrual hygiene practices of respondent

33. At what age (in years) did you start menstruating? _____
34. Who are you living with presently? 1. Both parents [] 2. Father alone []
 3. Mother alone [] 4. Relative [] 5. Guardian [] 6. Others (specify)

35. Do you buy sanitary material? 1. Yes [] 2. No [] (if no, go to question 37)
36. I get money to purchase sanitary material from _____ 1. My father []
 2. My Mother [] 3. My Guardian [] 4. Others (specify)

The following considers factors that may likely enable you have a good menstrual hygiene, tick response as it applies to you (multiple response allowed)

37.	I choose the type of absorbent I use because		
A	It is what I can afford to buy	D	It is easy to dispose
B	I don't have to buy it	E	It is the one available
C	It is easy to clean	F	It is the one I know how to use

38. I change my absorbent material often because (multiple response allowed)

A	I am aware of potential health risks related to poor hygiene	
B	It has been long I started menstruation	
C	I have access to cleaning facilities throughout the days and period of menstruation	
D	I know what it means to have a good menstrual hygiene	
E	I was given pre-menarcheal training	
F	My work gives me time to change my absorbent as often as expected	
G	My work place have private facilities (toilets, soaps, water, disposable facilities) that I can use	

39. Reinforcing factors for good menstrual hygiene. Considering the following statements, tick (✓) either 'YES' or 'NO' as it applies to you (multiple response allowed)

S/N	STATEMENTS	Yes	No
A	I have access to media advert on menstruation and menstrual hygiene		
B	My friends encourage me to change my menstrual absorbent often		
C	My mother will scold me if I am not clean during menstruation		
D	My boss encourages me to have good hygiene especially during menstruation		
E	My father gives me extra money to purchase sanitary material for my menstruation		

40. Intrapersonal factor influencing menstrual hygiene

S/N	STATEMENTS	YES	NO
A	Menstruation is a disease		
B	Pain during menstruation means one is sick		
C	It is harmful for a woman's body if she runs or dances during her menstruation		
D	Menstrual blood contains dangerous substances		
E	I am happy with myself during my period		
F	I am as good as other people during my period		
G	I am more confident during my menstruation than when I am not menstruating		

41. Does your period make you miss work? 1. Yes [] 2. No [] if No, go to 43

42. Why do you miss work during your period? (Tick all that applies to you)

S/N	STATEMENT	YES	NO
A	I am afraid of staining my clothes		
B	I am afraid of others making fun of me		
C	Periods can cause pain		
D	Periods can make me feel uncomfortable or tired		
E	There is nowhere for girls to wash and change at work		
F	There is nowhere to dispose of sanitary products		

G	I do not have sanitary pads		
H	Other reason (specify)		

43. What type of family are you from? 1. Extended [] 2. Nuclear [] 3. Others (specify)

44. How much is your daily pocket money in naira? _____

45	Statements	Never	Once/ twice	Many times	Always
A	Over the past year, how often have you gone without enough food to eat?				
B	Over the past year, how often have you gone without enough clean water?				
C	Over the past year how often have you gone without medicine?				

46. What facilities and programmes are there in your community for promoting safe and private menstrual hygiene for girls? (Tick all that applies)

A	Private washing facilities for cloth napkin (such as a tap and basin inside a lockable toilet)	
B	Private disposal facilities for disposable absorbent materials	
C	Any kind of absorbent material distribution programme	
D	Menstrual hygiene education session	
E	Other (specify)	
F	None	
G	I don't know	

47. Are there certain aspects of your traditions that you believe should be incorporated in education surrounding menstruation? 1. Yes [] 2. No [] If yes, go to question 48

48. What specific traditions or belief? _____

Thank you for your time

APPENDIX II

IWE-IBEERE

NO:

APA KINI

Ilana: Dakun dahun awon ibere wonyii nipa lilo ami yi (✓) fun idahun ti o ro pe o to

1. Oto omo odun melo bayi? _____ (So odun ti a bi o)
2. Ibo lo kawe de? 1. Mi o lo si ile iwe rara [] 2. Ile iwe alakobere [] 3. Mo ka die ninu ile iwe eko girama [] 4. Mo pari ile iwe eko girama [] 5. Ile iwe giga [] 6. So omiran _____
3. Agbegbe wo ni oungbe? _____
4. Kini ipo igbeyawo re 1. Mo wa ni ile oko [] 2. Mio ti ni oko [] 3. Mo ti pinya pelu oko mi [] 4. Mo ti ko oko mi sile [] 5. Mo ngbe papo pelu okunrin []
5. Eya wo ni o? 1. Yoruba [] 2. Hausa [] 3. Igbo [] 4. So omiran _____
6. Elesin wo ni o? 1. Musulami [] 2. Igbagbo [] 3. Esin abalaye [] 4. So omiran _____
7. Iwe melo ni baba re ka? 1. Won o lo si ile iwe rara [] 2. Ile iwe alakobere [] 3. Won ka die ninu ile iwe eko girama [] 4. Won pari ile iwe Girama [] 5. Won lo ile iwe giga []
8. Iwe melo ni mama re ka? 1. Won o lo si ile iwe rara [] 2. Ile iwe alakobere [] 3. Won ka die ninu ile iwe eko girama [] 4. Won pari ile iwe Girama [] 5. Won lo ile iwe giga []
9. Ise won ni o yan laayo? 1. Tailor [] 2. Onidiri [] 3. Catering [] 4. Kata kara [] 5. Ogun titta [] 6. So omiran _____
10. Ise wo ni baba re yan laayo? 1. Ise Ijoba [] 2. Onise owo [] 3. Kata kara [] 4. Agbe [] 5. So Omiran _____
11. Ise wo ni mama re yan laayo? 1. Ise Ijoba [] 2. Onise owo [] 3. Kata kara [] 4. Agbe [] 5. So Omiran _____

APA KEJI: Imo nipa nkan osu laarin odo langba ti o ko ie owo

12. Nje ogbo nipa nkan osu ki o to bere si ni see? 1. Beeni [] 2. Beeko []

13. Bi o ba ti gboo ri, nibo/odo tani oti gbo? bi beeko, lo si ibeere kerinla (mu gbogbo esi ti o ba je mo o) 1. Iya mi [] 2. Oluko mi [] 3. Omo iya mi lobirin [] 4. Awon ore mi []

5. Ninu iwe [] 6. media [] 7. Oga mi [] 8. Eleto ilera []

14. ki ni a npe ni ikan osu? 1. Eje dida lati ile omo ni osoosu [] 2. Eje ti oun jade lara nita ntori omo bibi [] 3. Eje ti oun jade lara nitori wipe a ni egbo [] 4. Eje ti oun jade lara tori jamba oko [] 5. Nko mo []

15. Ninu eya ara wo ni eje nkan osu ti nwa? 1. Oju ara [] 2. Ile omo [] 3. Ikun [] 4. Ile ito []

16. Nkan osu je _____ 1. Ohun ti o to lati se/ri [] 2. Nkan ti o niise pelu arun [] 3. Nkan eemo [] 4. Nko mo nkan ti o je []

17. Kini ohun ti oun fa nkan osu? 1. Ibinu olohun [] 2. Aisan [] 3. Awon Homonu [] 4. Nko mo ohun ti oun fa []

18. Ojo melomelo sira won ni oto ki ari nkan osu? 1. 21-35days [] 2. Oju 35 days lo [] Nko mo []

19. Ewo ninu awon wonyi ni oti gbo ri? (mu gbogbo eyi ti o ba to gbo ri)

Tampon	
Pad ti a le junu	
Cup igba eje	
Pad ti ale tun lo ti a ba fo gege bi eyi ti a se nile	
Owu	
Tissue paper	

20. Kini ohun ti o to lati fi gba eje nkan osu? 1. Sanitary pad [] 2. Aso [] 3. Tampon [] 4. So omiran _____

Imo awon jamba ti o nise pelu ilera ti o wa ninu ki a ma se imoto ti o peye ni asiko nkan osu

21. Fun awon gbolohun ti o wa ni isale yii, mu idahun ti o lero pe o to pelu lilo ami yii (✓)

	GBOLOHUN	BEENI	BEEKO
A	Lilo ohun ti a fi ngba eje ti ko mo ni asiko nkan osu le je ki a ko arun		
B	Lilo ohun ti a fin gba eje ti ko mo ni asiko nkan osu tun le je ki kokoro aifojuri (bacteria) wo inu oju ara wa lo si inu ile omo		
C	Ki eyan o ma paro ohun ti a fin gba eje ni asiko ti o ye le je ki oju ara o		

	ma yun ni ti yi o si pada fa jamba fun ara		
D	Lilo ohun igba eje (tampon) ti a se fun eje ti o bapo ni asiko ti eje ti oun jade lara eni o bapo le fa ki kokoro (bacteria) po majele buruku si eni lara		
E	Ki a maa fo abe eni lati furo wa si oju ara nigba ti a ba to tabi yagbe le je ki kokoro (bacteria) wo inu oju ara wa tabi ibi ti ito ngba koja		
F	Ki a maa da eje tabi ju ohun ti afi gba eje nkan osu si ibi ti ko to le je ki a ko arun gege bi arun jedo jedo ran elo miran		
G	Ibalopo lai lo idaabobo ni asiko nkan osu le je ki a ko arun to je mo ibalopo ni kia kia		
H	Titi ose bo oju ara ni gbogbo igba leje ki kokoro (bacteria) wo oju ara wa		
I	Ki a ma maa fo owo leyin ti a ba paro ohun ti a fi ngba eje nkan osu le fa arun jedo jedo tabi egbo oju ara tan ka		

APA KETA: Ise imototo ni asiko nkan osu laarin odolangba ti ko o ko ise owo

21b. Nje ohun igba eje ti o se fo ti o si se tunlo ni oun lo? 1. Yes [] 2. No []

22. Ti o ba je ohun igba eje ti a le tun lo ti a ba fo ni oun lo, bawo ni o se ma nsa won? Ti kii ba se bee, lo si ibeere kerinlelogun 1. Inu ile [] 2. Ita, ninu orun [] 3. Ita, nibi ti ko si orun

23. Kini ohun ti o ma nlo lati fi gba eje ni asiko nkan osu? (Mu gbogbo eyi ti o ba ma nlo)

A	Aso tabi toweli		E	Toilet paper	
B	Tampon		F	Owu	
C	Pad tita		G	Foomu beedi	
D	Cup igba eje		H	So omiran	

24. Ohun igba eje melo ni o ma nlo ni asiko nkan osu re? _____

25. Eje nkan osu mi ma n _____ 1. Po [] 2. Wa ni deede iwon [] 3. Kere []

26. Ki ni o ma nlo lati fi fo abe re? 1. Omi lasan [] 2. Ose ati omi [] 3. Omi ati apakokoro []

27. Eemelo ni o ma nwe ni ojumo nigba ti o ba nse nkan osu? 1. Enkan [] 2. Eemeji [] 3. Eemeta tabi jubelo []

28. Leyin ti mo ba paaro nkan ti mo fi ngba eje ni asiko nkan osu, mo ma n _____

1. Fo owo mi pelu ose at omi [] 2. Fo owo mi pelu omi lasan []

3. Nu owo mi pelu aso [] 4. Mi o ki nse nkankan ninu gbogbo ohun ti e daruko yii

[]

29. Iru awon nkan wo ni oko tabi ti won ko fun o ni asiko nkan osu re? (Mu gboibo eyi ti o kin se)

A	Losi inawo tabi ayeye		D	Gbigba adura	
B	Jije irufe awon ounje kan		E	So omiran _____	
C	Didana ati sise ise ile				

30. Nibo ni o ma nko ohun ti o fi ngba eje nka osu re si? 1. Ile iwe [] 2. Mi o ki nko pa mo []

3. Mo ma nko pelu awon aso mi [] 4. So omiran _____

31. Mo ma nso ohun ti mo ba lo lati fi gba eje ni asiko nkan osu mi nu nipa 1. Didana suun []

2. Ririi mole [] 3. Flush re ni shalanga [] 4. Jiju si inu ile idoti [] 5. Jiju si ori papa []

6. Mi o ki njunu [] 7. So omiran _____

Ti oko ba ki nso ohun igba eje nkan osu re nu, lo si ibeere keta le logbon

32. Mo ma nfi _____ yi ohun ti mo ba lo fi gba eje ni asiko nkan osu siwaju ki nto soonu.

1. Paper [] 2. Ora [] 3. Mi o ki nfi ohun kohun yi []

APA KERIN: Awon okunfa ti o le je ki a ni tabi ki amani imototo ni asiko nkan osu

33. Odun melo ni o nigba ti o bere nkan osu? _____

34. Odo tani o ngbe bayi? 1. Pelu awon obi mi mejeji [] 2. Baba mi nikan [] 3. Mama mi nikan [] 4. Odo molebi mi [] 5. Alagbato [] 6. So omiran _____

35. Nje o ma nra ohun ti o ma nfi gba eje ni asiko nkan osu re? 1. Beeni [] 2. Beeko [] (ti oba je beeko, lo si ibeere ketadinlogoji)

36. Mo ma ngba owo lati ra ohun ti nfi gba eje ni asiko nkan osu lowo _____ 1. Baba mi []

2. Mama mi [] 3. Alagbato mi [] 4. So omiran _____

Awon oro ti o wa ni isale yii ni awon ohun ti a wo wipe o leje ki a ni imototo ti o peye ni asiko nkan osu, mu idahun ti o lero pelu lilo ami yi (✓) (aaye wa lati mu ju idahun kan lo)

37.	Mo yan irufe ohun ti mo ma nlo lati fi gba eje ni asiko nkan osu mi ni aayo nitori				
A	Ohun ni mo lagbara lati ra		D	O rorun lati sonu	
B	Mi o nilo lati raa		E	Ohun ni mo ri lo	
C	O rorun lati fo		F	Ohun ni mo moo lo	

38. Mo ma nparò ohun tí mo ma nfi ngba èjé ní asikò nkan osu mí nitorí wípé (aayé wá látí mu ju idahun kan lo)

A	Mo mo ewu tí o wá nínú àìní imótótó ní asikò yí	
B	Otí pé tí mo tí béré nkan osu	
C	Mo ma nri awon ohun tí mo niilo látí fí sè imótótó ní arowótó mí ní asikò yí	
D	Mí o mo itumo kí eyan o sè imótótó tí o pé yé ní asikò yí	
E	Won ko mí ní èkò tí o jé mo nkan osu kí ntoré béré	
F	Ise mí gba mí layé látí parò ohun tí mo fí ngba èjé ní asikò yí gégé bí o tí to at bí o tí yé	
G	Ile ise mí ní awon ohun tí mo nilo gégé bí ile igbè, osè, omi atí ile idotí látí fí sè imótótó ara mí	

39. Awon wonyi ní awon ohun tí a ró wípé olé jé kí a pá imótótó tí o péyè mo ní asikò nkan osu, mú èyí tí o níisè pelu rẹ látí ara lilo amí yí (✓) (anfani wá látí mu ju idahun kan lo)

S/N	GBOLOHUN	BEENI	BEEKO
A	Mo ma ngbo ipolowo lori imo atí sise imótótó tí o níisè pelu nkan osu		
B	Awon ore mí ma ngba mí niyanju látí rí daju pé mo nparò ohun tí mo fí ngba èjé ní asikò nkan osu		
C	Mama mí yí o bá mí wí tí nko bá sè imótótó ní asikò nkan osu mí		
D	Oga mí ma ngba mí niyanju látí ní imótótó tí o pé yé ní asikò nkan osu mí		
E	Baba mí ma nfun mí ní owó látí fíra ohun tí nfi gba èjé ní asikò nkan osu mí		

40. Awon ohun tí o níisè pelu ara eni tí o sí ní ipa lori imótótó ní asikò nkan osu

S/N	GBOLOHUN	BEENI	BEEKO
A	Aisan ní nkan osu		
B	Irora ní asikò nkan osu tumo sí pé ara eni o yá		
C	Olewú fun obinrin látí sare tabí jó ní asikò nkan osu		
D	Ejé nkan osu ní awon nkan tí o lewú		
E	Inu mí ma ndun sí ara mí ní asinko nkan osu mí		
F	Mo ma ná daada gégé bí awon eniyan miran ní asikò nkan osu mí		

G	Igboya mi ni asiko nkan osu mi ma nju tigba ti mi o ba se nkan osu lo		
---	---	--	--

41. Nje nkan osu re ma nmu o pa ise je? 1. Beeni [] 2. Beeko [] bi beeko, lo si ibeere ketalelogoji

42. Kini idi ti o fi ma npa ise je ni asiko nkan osu re? (Mu gbogbo esi ti o ba je mo o)

S/N	GBOLOHUN	BEENI	BEEKO
A	Mi o fe ki eje o yi mi laso		
B	Mi o fe ki awon eyan o fi mi se yeye		
C	Nkan osu a ma ni ni lara		
D	Nkan osu mi kii rorun fun mi osi ma nje o re mi		
E	Ko si ibi ti eyan ti le we ati paro ohun igba eje ni ibi ise		
F	Ko si ibi ti eyan le ju ohun igba eje si		
G	Nko ni padi		
H	So idi omiran		

Awon ohun ti o nise pelu eniyan ti o si ni ipa lori imototo ni asiko nkan osu

43. Iru idile wo ni oti wa? 1. Extended [] 2. Nuclear [] 3. So omiran _____

44. Elo ni owo ti won ma nfun o nile lojumo? _____ (so iye re ni naira)

45	GBOLOHUN	Ko sele ri	Eekan/e emeji	Opolopo igba	Gbogbo igba
A	Ni awon odun ti o lo seyin, eemelo ni o ko ri ounje ti o to o je?				
B	Ni awon odun ti o lo seyin, eemelo ni o ko ri omi ti o to o lo?				
C	Ni awon odun ti o lo seyin, eemelo ni o ko ri ogun lo				

Awon ohun ti o niise pelu awujo ti o si ni ipa lori imototo ni asiko nkan osu

A	Ohun elo fun fifo aso igba eje nkan osu (gege bi omi ero ati agbada ninu ile igbanse ti o se ti)	
B	Ohun elo fun jiju ohun igba eje nkan osu nu	
C	Irufe eyikeyi eto ti o je mo pinpin ohun igba eje nkan osu	
D	Eto eko lori imototo ni asiko nkan osu	
E	So omiran	

F	Ko si irufe eto bayi	
G	Nko mo	

46. Kini awon ohun elo ati eto ti o wa ni agbegbe re lati gbe imototo ni asiko nkan osu laruge, (Mu gbogbo esi ti o ba ri bee)

47. Nje o ni ninu awon asa ti o gbagbo nini re ti o fe ki o wa ninu eko ti o niise pelu nkan osu?

1. Beeni [] 2. Beeko [] bi beeni, lo si ibeere ejidinlaadota

48. Ewo ni pato ninu awo asa tabi igbagbo yi?

Mo dupe fun asiko re ti o yanda lati lo pelu mi

UNIVERSITY OF IBADAN LIBRARY

APPENDIX III

INFORMED CONSENT FORM

INFORMED CONSENT FORM FOR KNOWLEDGE AND PRACTICES OF MENSTRUAL HYGIENE AMONG ADOLESCENT FEMALE APPRENTICES IN LAGELU LOCAL GOVERNMENT AREA, IBADAN

IRB Research Approval Number:

This approval will elapse on:

Title of research: Knowledge and Practices of Menstrual Hygiene among Adolescent Female Apprentices in Lagelu Local Government Area, Ibadan

Name of researcher: This study is being conducted by Folaranmi Zaynab Bolanle who is a postgraduate student in the department of Health Promotion and Education, Faculty of Public Health, College of Medicine University of Ibadan.

Purpose of research: The purpose of this study is to investigate the knowledge and practices of menstrual hygiene among female apprentice adolescents in Lagelu Local Government Area, Ibadan

Sample size and procedure for data collection: A total of 421 respondents would be recruited for this study using a multi stage sampling procedure to select eligible respondents.

Expected duration of the research and participant(s) involvement: The process of this study will last for two months. The expected time to spend with each participant in filling the questionnaire is fifteen to twenty minutes. You are to provide answers to the questions contained in the questionnaire

Risk(s): There are no physical risks in participating in this study. Also, each participant will be given her privacy to fill questions perceived to be sensitive herself

Cost to participating of joining the research: Participation will cost nothing financially to you as participants. It will however take a little of your time.

Benefit: At the end of the research, findings will be useful in the design of interventions or strategies aimed at promoting effective menstrual hygiene

Confidentiality: All information collected in this study will be given coded numbers. Names of participants will not be written on the questions. In addition, names or any other identifiers will not be used in any publication or report emanating from this study.

Voluntariness: Your participation in this research is entirely voluntary

Consequences of participants' decision to withdraw from the research and procedure for orderly termination of participation: You can choose to withdraw from the research at any time without any penalty. Please also note that some of the information that has been obtained about you before you choose to withdraw may have been used in reports and publications.

Statement of Person Obtaining Inform Consent

I have fully explained the nature and scope of the research to _____ and have provided sufficient information to him/her which is needed by him/her to make informed decision.

Date _____

Signature _____

Name _____

Statement of Person Giving Consent

I have read the description of the research and the research has been explained to me in a language I understand or have been translated into a language I understand. I understand that my participation is voluntary. I know enough about the purpose, methods, risk, and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. Finally, I have received a copy of this consent form and additional information sheet to keep for myself.

Date _____

Signature _____

Name _____

Detailed contact information including contact address, telephone, fax, email and any other contact information of researcher(s), institutional HREC and head of the institution:

This research has been approved by the Oyo State Research Ethical Review Committee and the chairman of this committee can be contacted at Ministry of Health, Secretariat,

Ibadan. In addition, if you have any question about your participation in this research, you can contact the principal investigator

Date _____

Phone _____

Name _____

Signature _____

Name: Folaranmi Zaynab Bolanle

Department: Health Promotion and Education

Phone: 07083048889

Email: folaranmizaynab@gmail.com

PLEASE KEEP A COPY OF THE SIGNED INFORMED CONSENT

UNIVERSITY OF IBADAN LIBRARY

APPENDIX IV

FỌQMU IFOHUNSI TIŞALAYE IMO ATI ISE IMOTOTO TI ONIISE PELU NKAN OSU NI AARIN ODO LANGBA OBIRIN TI O SI NI ILE IWE NI IJOBA IBILE LAGELU, IBADAN

Nomba itẹwọgbà IRB:

Itẹwọgbà yii yoo kọja ni:

Akole iwadi: Imo ati Ise Imototo ti oniise pelu nkan osu ni aarin odo langba obirin tonkose owo ni Ijoba Ibile Lagelu, Ibadan

Oruko oluwadi: Iwadi yi owaye nipasẹ Folaranmi Zaynab Bolanle ti ounse omo Ile-ẹkọ giga ti Ibadan ni ẹka Igbelaruge ati Ẹkọ Ilera

Idi iwadi: Idi iwadi yi ni lati se iwadi imo ati ise imototo ti oniise pelu nkan osun ni aarin odo langba obirin to nkose owo ni ijoba ibinle Lagelu, Ibadan

Ilana fun gbigba data: Lapapo, irinwo ati ookan le logun odo langba obirin to nkose owo ni ijoba ibile Lagelu ni yoo kopa ninu iwadi yii pelu lilo ilana oni ipele lati fi mu awon ti o le kopa

Akokoti a yẹ fun iwadi: Ilana yii yoo siṣe fun osu meji. O ni lati pese idahun si ibeere ti o wa ninu iwe ibeere. Yio gba o ni iseju meedogun si ogun iseju lati dahun awon ibeere naa.

Ewu: Kosi ewu ninu kikopa ninu iwadi yii. Sibesibẹ, igbalaye wa lati dahun awon ibeere ti o ko ba fe so sita fun ra re

Awọn ohun ti iwadi yii yi o gba lowo re: kikopa ninu iwadi yi ki yi o naa o ni ohun kohun, sibesibẹ, yio gba diẹ ninu akoko re.

Anfaani: Ni opin iwadi yi, awọn awari wa yoo wulo lati fi mo irufe eto ti a le gbe kale lati fi gbe imototo ni asiko nkan osu laruge

Asiri: Gbogbo awọn alaye ti a o gba ni iwadi yii ni a o fun ni nomba. Awọn orukọ eniyan ti o dahun kii yoo wa lori awọn ibeere. Ni afikun, a ko ni lo orukọ re tabi awọn ami idanimọ miiran ni eyikeyi lori iwe tabi iroyin.

Iyọda: Ki kopa re ninu iwadi yi da lori titi inu re wa

Ipinnu awon olukopa lati yo kuro ninu iwadi ati ilana fun yiyo kuro: O le yan lati kuro ninu iwadi yii ni igba kigba laisi ijuya kankan. Jowo mo pe diẹ ninu awon alaye ti a ti gba lati odo re saaju ki o to yan lati yo kuro ni a le lo ninu awon iroyin ati awon iwe ase.

Gbolohun ti Eni ti o fe iyanda

Mo tise alaye ni kikun ti o nise pelu didara po fun iwadi yii fun _____ ati wipe moti pese alaye ti o to fun

Ojo _____ **Ibuwo**

Oruko _____

Gbolohun ti Eniyan ti o fe se iyanda


Mo tika apejuwe iwadi yii, atipe won tise alaye re fun mi ni ede ti o ye mi. Mo mo wipe ikopa mi je atinuwa. Mo mo nipa idi, awon ona, ewu, ati awon anfani ti o wa ninu iwadi yii, mo si ti pinnu lati kopa ninu re. O ye mi pe mo le ko lati tesiwaju ninu iwadi yii. Ni akotan, Mo tigba fomu iwadi itewogba ati iwe ifowosi fun ara mi.

Ojo _____ **Ibuwo**

Oruko _____

APPENDIX V
ETHICAL APPROVAL

TELEGRAMS..... TELEPHONE.....



MINISTRY OF HEALTH
DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION
PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No.
All communications should be addressed to
the Honorable Commissioner quoting
Our Ref. No. AD 13/479/ 1125

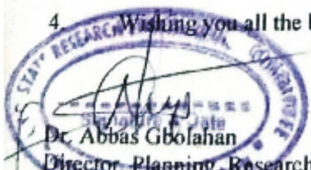
25th February, 2019

The Principal Investigator,
Department of Health Promotion and Education,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan.
Attention: Folaranmi Zaynab

**ETHICS APPROVAL FOR THE IMPLEMENTATION
OF YOUR RESEARCH PROPOSAL IN OYO STATE**

This is to acknowledge that your Research Proposal titled: "Knowledge and Practices of Menstrual Hygiene among Adolescent Female Apprentices in Lagelu Local Government Area, Ibadan " has been reviewed by the Oyo State Ethics Review Committee.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.
3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.
4. Wishing you all the best.



Dr. Abbas Gbolahan
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethics Review Committee