ASSESSMENT OF PERSONAL HYGIENE PRACTICES AMONG PUBLIC PRIMARY SCHOOL PUPILS IN OWERRI WEST LOCAL GOVERNMENT AREA IN IMO STATE

BY

BENNETH CHIKAODINAKA OYIBO
REG NO: 20174082585

A THESIS SUBMITTED TO THE DEPARTMENT OF PUBLIC HEALTH, SCHOOL OF POST GRADUATE STUDIES.
FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI,

JUNE, 2023

ASSESSMENT OF PERSONAL HYGIENE PRACTICES AMONG PUBLIC PRIMARY SCHOOL PUPILS IN OWERRI WEST LOCAL GOVERNMENT AREA IN IMO STATE

BY

BENNETH CHIKAODINAKA OYIBO
REG NO: 20174082585

A THESIS SUBMITTED TO THE DEPARTMENT OF PUBLIC HEALTH, SCHOOL OF POST GRADUATE STUDIES.
FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI.

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF PUBLIC HEALTH (MPH) DEGREE IN (ENVIRONMENTAL HEALTH & SAFETY OPTION)

JUNE, 2023

CERTIFICATION

This is to certify that this work, "**ASSESSMENT OF PERSONAL HYGIENE PRACTICE AMONG PUBLIC PRIMARY SCHOOL IN OWERRI WEST LOCAL GOVERNMENT AREA, IMO STATE**" was carried out by **BENNETH, CHIKAODINAKA OYIBO (20174082585)** in partial fulfillment for the award of the degree of Master of Public Health (MPH in Environmental Health and Safety) in the Department of Public Health, Federal University of Technology, Owerri.

.....
Prof. A.N. Amadi
(Principal Supervisor)

08/12/2023
.....
Date

.....
Dr. (Mrs) C.O.A. Amadi
(Co-Supervisor)

09/12/2023
.....
Date

.....
Dr. U.M. Chukwuocha
(Head of Department)

08/12/23
.....
Date

.....
Rev.Sr.Prof. E.T. Oparaocha
(Dean, School of Health)

8/8/2023
.....
Date

.....
Prof. B.O. Eseonu
(Dean, Postgraduate School)

.....
Date

.....
Prof. Oyedunni Arulogun
(External Examiner)

.....
Date

II

DEDICATION

This work is dedicated to my father, late Layreader Monday Dike and my father-in-law, Late Benneth Emenaike. To my amiable husband Mr Ndubuisi James and children, Marvellous, Emmanuel, Annabel and Grace, for their love and support given to me on the course of writing this work.

ACKNOWLEDGEMENTS

I sincerely thank the Almighty God for making all things possible for me to actualized my dream despite the setbacks. I take pleasure in acknowledging my Supervisors; Prof. A.N. Amadi and Dr. (Mrs) C.O.Amadi severely contributed for my knowledge and skills in research practice and supervision. Their advise, love and encouragement have contributed immensely to the success of this work. The Head of department (Public Health), Dr. U.M. Chukwuocha, for his tireless effort in supporting us and making it possible for us to actualize our dreams. I also wish to acknowledge the assistance I received from Prof. P.U.Agbasi, Dean (SOHT), Prof. I.N.S Dozie, Rev. Sr. Prof. E. Oparaocha, Prof. (Mrs) E. A. Nwoke, Prof. (Mrs) Sally Ibe; who also help to achieve this success. To my lecturers, Dr. Uduji G. Dr. C. Okereke; Dr Ebirim C.I. Dr C. Iwuala, Dr. (Mrs B, Nworuh; Dr. G. Iwuoha, Dr U.G Ekeleme, Mrs Okorie O.M and Dr. Winne Dozie, who encouraged and make contributions to my work. Also, l want to thank my colleagues and the Non-Academic Staff of Public Health Departments for their support. I cannot forget to acknowledge my research assistants; Miss Joy, Mrs Esther, Mrs Chidinma and Innocent David for their contributions towards the success of my work. My sincere gratitude is also extended to The Registrar of Environmental Health Council of Nigeria (EHCON), Dr. Yakubu Mohammed Baba, The Zonal Director (EHCON South-East), San Kevin Okafor and all my colleagues at work, who in various ways motivated me to complete my work.

TABLE OF CONTENTS

TITLE PAGE i

CERTIFICATION iii

DEDICATION iv

ACKNOWLEDGEMENT v

ABSTRACT vi

TABLE OF CONTENT vii-x

CHAPTER ONE

INTORDUCTION

1.1 BACKGROUND TO THE STUDY 1

1.2 STATEMENT OF PROBLEM 4

1.3 OBJECTIVE OF THE STUDY 5

1.3.1 GENERAL OBJECTIVE 5

1.3.2 SPECIFIC OBJECTIVES 5

1.4 RESEARCH QUESTION 5

1.5 RESEARCH HYPOTHESIS 6

1.5.1 NULL HYPOTHESIS 6

1.5.2 ALTERNATIVE HYPOTHESIS 6

1.6 SCOPE/LIMITATIONS OF THE STUDY 6

1.7 SIGNIFICANCE OF STUDY 6

1.8 OPERATIONAL DEFINITION OF TERMS 6

CHAPTER TWO

LITERATURE REVIEW

2.1 CONCEPTUAL FRAMEWORK 8

2.1.1 OVERVIEW OF HYGIENR AND PERSONAL HYGIENE PRACTICES 7

2.1.2 VARIOUS TYPES OF PERSONAL HYGIENE PRACTICES 8

2.1.3 MENSTRUAL HYGIENE AS A PERSONAL HUGIENE PRACTICE AMONG PUBLIC PRIMARY SCHOOL PUPILS. 12

2.1.4 KNOWLEDGE AND ATTITUDES OF PERSONAL HYGIENE 15

2.1.5 PRACTICE AND BENEFITS OF PERSONAL HYGIENE AMONG SCHOOL AGE CHILDREN 17

2.1.6 CONDITIONS INFLUENCING PERSONAL HYGIENE PRACTICES 19

2.1.7 INTERVENTION STRATEGIES FOR ELIMINATING POOR PERSONAL HYGIENE PRACTICES AMONG PROMARY SCHOOLS 22

2.2. THEORETICAL FRAMEWORK 22

2.2.1 HEALTH BELIEF MODEL 22

2.2.2 THEORY OF PLANNED BEHAVIOUR 23

2.2.3 TRANS THEORETICAL MODEL 23

2.3 EMPIRICAL STUDY 24

CHAPTER THREE

MATERIALS AND METHODS

3.1	STUDY DESIGN	28
3.2	AREA OF THE STUDY	28
3.3	STUDY POPULATION	29
3.3.1	INCLUSION CRITERIA	29
3.3.2	EXCLUSION CRITERIA	29
3.4.	SAMPLING	29
3.4.1	SAMPLE SIZE DETERMINATION	29
3.4.2	SAMPLE METHODS	31
3.5	INSTRUMENT FOR DATA COLLECTION	32
3.6	VALIDITY OF INSTRUMENTS	32
3.7	RELIABILTY OF INSTRUMENTS	32
3.8	METHOD OF DATA COLLECTION	33
3.9	METHOD OF DATA ANALYSIS	33
3.10	ETHICAL CONSIDERATION	33

CHAPTER FOUR

RESULTS

4.1	SOCIO DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS	34
4.2	KNOWLEDGE OF PERSONAL HYGIENE PRACTICE AMONG RESPONDENTS	36
4.3	HUGIENE PRACTICES AMONG RESPONDENTS	38

4.4 BARRIERS INFLUENCING THE PRACTICES OF PERSONAL HYGIENE AMONG RESPONDENTS 42

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 DISCUSSION 44

5.2 CONCLUSION 46

5.3 RECOMMENDATION 46

REFERENCES 29

POPULATION OF PUBLIC PRIMARY SCHOOLS PUPLS IN OWRRI WEST LOCAL GOVERNMENT AREA IN IMO STATE

QUESTIONNAIRE

THE TWELVE PUBLIC PRIMARY SCHOOL SYSTEMATIC RANDOM SELECTED

ABSTRACT

Personal hygiene is the practice of maintaining cleanliness of one's own body and it is seen as a global issue among school children. This study was aimed on the assessment of personal hygiene practice among public primary school pupils in selected primary schools in Owerri West LGA in Imo State. A cross-sectional study design was employed and a self-administered questionnaire was used for data collection. The study population consisted of primary school pupils at Owerri West LGA and multistage sampling technique was used to select 427 respondents. Ethical approval was obtained from the Department of Public Health, FUTO. Results from the study showed that majority of the respondents 41.2% (176), were at the age group 10-12years, and majority of the respondents were Christians 89.5% (382). Findings from the study revealed that majority of the respondents 57.8% (247) aware of personal hygiene practice with 60.7% (259) of the respondents obliged to knowledge that personal hygiene including bathing, washing your hands, brushing your teeth, etc. The study showed that majority 61.6% (263) of public primary school pupils in Owerri West LGA always brush their teeth daily and 57.4% (245) also affirmed they cut their nails always as a mark of hygiene practice. Considering the Barriers influencing personal hygiene practice, majority of the respondents 83.4% (356) indicated lack of adequate water supply as a challenge to practice of hygiene which means that the Owerri West community service lack water provision at school and community at large. The study concluded that there is a need for regular reinforcement to sustain the gains particularly with areas of assessment in the study showing that hygiene provisions are of water is lacking. Poor hygiene practice contributes account for majority of the illnesses together with other infectious diseases among school children. The study recommended effective health education and government provision of social amenities in the public primary schools.

Key words: Personal Hygiene, Assessment, Sanitation, school, Social Amenities

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Personal hygiene is an important and a global public health issue among school age children (World Health Organization, 2017). Hygiene refers to practices associated with ensuring good health and cleanliness (Goel & Kundan, 2011). Personal hygiene is the practice of maintaining cleanliness of one's own body (Goel & Kundan, 2011). Good hygienic care as well as practices in terms of personal hygiene contributes to a large extent on factors relating to healthful living and prevention of hazards from diseases (Loughlin, 2016). These health risk factors are directly related to some important daily activities implicated with worthy operational actions and obligatory responsibilities, such as washing hands before meals and after defecation with soap, brushing teeth at least twice a day specially after breakfast and after meals, taking bath with soap regularly, keeping nails short and taking regular exercise (Kumie & Ali, 2013).

Also it is Imperative to note that hygiene as an old concept related to medicine, as well as to personal and professional care practices. It involves practices and conditions that help to maintain health and prevent the spread of diseases as well as practices that deal with the preservation of health (Raghava, 2015; Rabiei *et al.,* 2012).

Regular hygienic practices may be considered good habits by a society while the neglect of hygiene can be considered disgusting, disrespectful, or even threatening (Lukacs & Largaespada, 2016; Lalani *et al.*, 2015). Maintaining personal hygiene is necessary for many reasons such as personal, social, health, psychological or simply as a way of life. Sharda and Shetty (2018) noted that keeping a good standard of hygiene helps to prevent the development and spread of

infections and disease. This phenomenon therefore makes hygiene practices a great tool in predictive and preventive medicine processes. This comes at the back of the huge acknowledgement received by predictive and preventive medicine by global and regional organizations such as the Organization of United Nations, the European Union, and the National Institute of Health (Goel & Kundan, 2011).

It is estimated that unsafe water, and lack of sanitation and hygiene every year claim lives of more than 1.5 million of school age children from diarrhea (Czerwinski, 2016). Poor hygiene behavior is a major problem in developing countries among school children (Loughlin, 2016). Hygiene and sanitation related diseases are a huge burden in developing countries; causing many people to fall ill even to die (World Health Organization, 2010). A large fraction of the world's illness and death is attributable to communicable diseases due to Poor hygiene (Snow, White GL & Kim, 2018). Sixty- two percent and 31% of all deaths in Africa and Southeast Asia respectively are caused by infectious disease (Snow *et al.*, 2018). This trend is especially notable in developing countries where acute respiratory and intestinal infections are the primary causes of morbidity and mortality among young children.

Inadequate sanitary conditions and poor hygiene practices play major roles in the increased burden of communicable disease within these developing countries and according to Sharda and Shetty (2018), the morbidities arising due to poor personal hygiene practices are more evident in the slum areas because of high population density, spread of respiratory infection, inadequate water supply, lack of sanitary facility, diarrhea and warm infestation, inadequate nutrition leading to anemia, malnutrition and vitamin deficiency. Education must be provided to increase the level of knowledge. Schools are acknowledged as important places for developing health promotion and influencing health-related behaviours including hygiene-related behaviours (Scott,

Curtis, & Rabie, 2017; Raghava, 2015). Once habits are established in adolescence, they tend to be long-lasting and difficult to alter in adulthood (Raghava, 2015). Thus, children educated in an effective way whilst at school may become adults who observe good hygiene practices. Knowledge influences people health. Through basic education and public knowledge individuals become aware of the meaning of self-protection and personal hygiene (Lukacs & Largaespada, 2016). Assessment of personal hygiene of school children have been found to increase significantly after education (Kumar *et al.,* 2017). In Nigeria, dental caries constitutes one of the major oral health problems with its prevalence being particularly high among young children and adolescents and the occurrence closely related to oral hygiene and socio economic class (Lukacs & Largaespada, 2016). There are many studies about the Assessment and practices of personal hygiene which were done on different groups and there are limited research findings to determine knowledge and practices of personal hygiene among primary school pupils in Nigeria (Oswald *et al.,* 2018; Lukacs & Largaespada, 2016; Raghava, 2015). These hygiene practices are enforced to them to help curb or reduce their risk of developing infections or long lasting ailments due as a result of poor practice of these activities (Sharda & Shetty, 2018).

1.2 Statement of the Problem

Teenage and young school age children face a lot of infections arising from poor personal hygiene practice and as a result several studies have shown that poor personal hygiene contribute to cross transmission of microorganisms, gum infections, increased rate of infectious illnesses, incidence of food borne outbreaks and reproductive tract infections among these school children (Oswald *et al.,* 2018; Goel & Kundan, 2011). These have been attributed to inadequate knowledge of personal hygiene and its practices among these children. Personal hygiene deficiency diseases have been found to continue to be a serious public health problem in

developing countries like Nigeria and people often affected are school children (Snow, White & Kim, 2018). Moreover, limited studies focused on young children at school have been identified and there is no formal study conducted concerning Assessment of personal hygiene Practices among primary school pupils.

With the zeal among researchers improving and growing day by day, Studies of personal hygiene practice among school age children is seen to have provided vital guides to several educational institutions (World Health Organization, 2017). Data and research on personal hygiene practices improves the knowledge and awareness of teachers at respective institutions to ensure a close eye is kept with these young school wards. The study on the assessment of personal hygiene practice among primary schools at Owerri West Local government area by the researcher will contribute to previous studies and provide a more line of action to government agencies in opening up more channels to improve her educational system. Thus the researcher due to these problems intends to carry out this research on the assessment of personal hygiene practices among primary schools at Owerri west LGA Imo state, Nigeria.

1.3 Objectives/Aims of the Study

1.3.1 General Objective

The general objective of this study was the assessment of personal hygiene practices among public primary school pupils in Owerri west LGA

1.3.2 Specific Objectives

1. To determine the level of knowledge of personal hygiene practice among public primary school pupils in Owerri west LGA.

2. To find out the various hygiene practices among public primary school pupils in Owerri west LGA.
3. To determine the Barriers influencing the practice of various personal hygiene among public primary school pupils in Owerri West LGA

1.4 Research Questions

1. What is the level of knowledge of personal hygiene practice among public primary school pupils in Owerri west LGA?
2. What are the various hygiene practices among public primary school pupils in Owerri west LGA?
3. What are the Barriers influencing the practice of various personal hygiene among public primary school pupils in Owerri west LGA?

1.5 Research Hypothesis

1.5.1. Null Hypothesis (Ho)

Barriers factors such as lack of education, inadequate water supply, lack of time, religious belief and laziness are not significantly associated with the practice of personal hygiene among public primary school pupils in Owerri West LGA.

1.5.2 Alternative Hypothesis

Barriers factors such as lack of education, inadequate water supply, lack of time, religious belief and laziness are significantly associated with the practice of personal hygiene among public primary school pupils in Owerri West LGA.

1.6 Scope/Limitations of the Study

The scope of this study is delimited to provide data on the assessment of personal hygiene practice among public primary school pupils. This research will be limited to public primary schools in Owerri west LGA which shares similar socio demographic characteristics with other primary schools in the country.

1.7 Significance Of The Study

The significance of this study means a lot to the following category of persons who will benefit from this research.

1) **To the Pupils:** This study will help pupils to amplify their practice of personal hygiene and give room for them to understand what oral hygiene, toilet hygiene and its appurtenances means. This study will also provide the line of actions required of these pupils in ensuring that they choose the necessary measures that will assure them of quality health and hygiene.
2) **To Other Researchers in this field:** This study when published will add to the existing literature on the Assessment of personal hygiene practice among primary pupils thus, it will assist the bed of research of future researchers.
3) **To the HeadMaster/Misstres Primary School Authorities:** This study will help the Primary School Authorities in providing the necessary facilities that might be seen to be limiting them from having improved health care and other social health representations. The government through this information provided by the researcher would ascertain if their policies in adolescent and child care is working efficiently.
4) To the general population this would be of great benefit as individuals all around would imbibe towards the results gotten from this study to effect a change.

1.8 Operational Definitions

- **Assessment:** Assessment is the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what pupils know, understand, and can do with their knowledge as a result of their educational experiences.
- **Practice:** the actual application or use of an idea, belief, or method, as opposed to theories relating to it.
- **Hygiene:** conditions or practices conducive to maintaining health and preventing disease, especially through cleanliness.
- **Personal Hygiene:** is how you care for your body. This practice includes bathing, washing your hands, brushing your teeth, and more.
- **Primary School:** a school for children between the ages of about five and eleven and usually offering general, technical, vocational, or primary-preparatory trainings.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviewed related literatures, journals, articles, publications and related materials on the assessment of personal hygiene practice on public primary school pupils. This chapter tends to utilize conceptual frameworks, empirical and theoretical frameworks related to the study.

2.1 Conceptual Framework

2.1.1 Overview of hygiene and Personal hygiene practices

Hygiene is a series of practices performed to preserve health. According to the World Health Organization (WHO), Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. Personal hygiene refers to the things we do to clean and care for our bodies (World Health Organization, 2017). Dirt, bodily secretions, food particles, and even germs can accumulate on our bodies if we don't clean ourselves regularly (Lalani *et al.,* 2015). The implementation of habits that help us stay clean not only prevents this accumulation, but also provides added personal and social benefit (Kumie & Ali, 2015). The aim of personal hygiene is to promote standards of personal cleanliness, within the setting of the condition where

people live. Personal hygiene includes bathing, clothing, washing hands and toileting, care of nails, feet, teeth, spitting, coughing, sneezing, personal appearance, and inculcation of clean habits when young (Global Handwashing Day, 2010). Many people equate hygiene with 'cleanliness,' but hygiene is a broad term. It includes such personal habit choices as how frequently to take a shower or bath, wash hands, trim fingernails, and wash clothes (Lukacs & Largaespada, 2016). It also includes attention to keeping surfaces in the home and workplace, including bathroom facilities, clean and pathogen-free. Some regular hygiene practices may be considered good habits by the society, while the neglect of hygiene can be considered disgusting, disrespectful, or threatening. Hygiene promotes comfort, safety, and health. The skin is the body's first line of defense against disease. Intact skin prevents microbes from entering the body and causing an infection (Kumie & Ali, 2015). Likewise, mucous membranes of the mouth, genital area, and anus must be clean and intact. Besides cleansing, good hygiene prevents body and breath odors. It is relaxing and increases circulation.

2.1.2 Various Types of personal hygiene practices

Several personal hygienic are usually being advised to school children by their teachers, parents and elder ones during school age (Kumar *et al.,* 2017). These hygiene practices are enforced to them to help curb or reduce their risk of developing infections or long lasting ailments due as a result of poor practice of this (Sharda & Shetty, 2018). Assessing their personal hygiene, several studies require that the researcher is able to identify the various types of hygienic practices among these school children particularly at primary level (Sharda & Shetty, 2018). They are;

- **Oral hygiene practice**

Oral health is an essential component of a person's health. According to World Health Organization (WHO), about 60 percent to 90 percent of children and nearly every adult in the world have dental cavities (Tanny *et al.,* 2016). According to American Dental Association (ADA), oral health is a functional, structural, aesthetic, physiologic, and psychosocial state of well-being and is essential to an individual's general health and quality of life (Folayan, Khami & Folaranmi, 2012).

Poor oral health is related to significant morbidity and mortality (World Health Organization, 2017). According to a study done in the USA, it was concluded that the frequency of emergency department visits because of preventable dental conditions has increased by 16 percent since 2006 (American Dental Association, 2014). Poor oral hygiene has a significant impact on general health and is associated with various systemic diseases (Folayan, Khami & Folaranmi, 2012). The systemic diseases also have an impact on oral diseases. According to a review article, poor glycemic control is associated with an increased risk of severe periodontitis (Tanny, Komabayashi & Long, 2016). A study done on Indian students concluded that teenagers were unable to correctly assess their dental hygiene. The authors attributed this to a lack of oral health self-assessment skills, which resulted in poor oral hygiene (Sharda & Shetty, 2018). Considering the fact that primary pupils are more knowledgeable and aware of health problems, they would be able to maintain appropriate dental hygiene.

- **Toilet hygiene practices**

In public health perspectives, hygiene measures among primary school pupils are most effective to control the outbreak of novel infectious diseases as well as to reduce the incidence of common respiratory, diarrheal and gastrointestinal illnesses (Lalani, Dasar, & Sandesh, 2015). Personal

hygiene measures are applied to control transmission of bacterial and viral infections in the community.

Regarding use of public toilets, common hygiene measures include hand washing, drying hands, disinfecting or covering the toilet seat surface before use, and flushing the toilet with the lid closed (Scott, Curtis & Rabie, 2017). Studies have shown that skin, gut and vaginal micro-organisms are prevalent on public toilet surfaces (Lukacs & Largaespada, 2016; Lalani, 2015). Infection risks of microorganisms in public toilets are mainly related to infective doses of pathogens. Probability of transmission is high for certain enteric pathogens such as norovirus and enterohemorrhagic E. coli (EHEC) in which < 100 cells are sufficient for infection (Rabiei, Mohebbi & Patja, 2012). It has been shown that disinfection of seats with wipes resulted in a 50-fold reduction in mean bacterial counts. Potentially infectious aerosols may be produced in large quantities during flushing (Lukacs, and Largaespada, 2016). Toilet plume is a contributor to the transmission of enteric diseases usually in primary school toilets (Goel & Kundan, 2011). There has been limited research on various inappropriate behaviors such as spitting into the urinal or toilet bowls and stepping on the toilet seat. Spitting in the urinal is an interesting phenomenon and of special concern as it may increase risk of transferring respiratory diseases when the urine splashes back into the air (Raghava, 2015).

Various factors can affect actual hygiene practices. Studies have shown that individual knowledge and attitudes can influence their practices (Sharda & Shetty, 2018; Scott, Curtis & Rabie, 2017). Demographic factors are also associated with the public's practices of hygiene measures. Females' students are found to be more likely than males to wash their hands after using the toilet (Rabiei, Moebbi & Patja, 2012). Besides, other influencing factors included

family influence, education, and peer influence and work experiences (Scott, Curtis & Rabie, 2017).

A qualitative study on the assessment and knowledge of hygienic practices explored the attitudes of the pupils towards hygiene behaviors by Moutsopoulos, Madianos and Ann (2016) have found some of the public dismissed the hygiene behaviors as they considered them bothersome and inconvenient. Another also thought that infection was difficult to be controlled and one had to "accept fate". And yet, some had a belief that the infection would happen to others instead of themselves (Lalani, Dasar, & Sandesh, 2015). Some psychological studies also found that some people might spit after seeing dirty toilet stuff (Taylor & Ann, 2013; Scott, Curtis & Rabie, 2017; Raghava, 2015). However, little is known about hygiene behaviors in public toilets among Nigerians.

- **Bathing Hygiene**

Bathing or showering among teens of school age is a public health challenge especially among rural areas. After a water-related emergency should only be done with clean, safe water (Czerwinski, 2016). Sometimes water that is not safe to drink can be used for bathing, but be careful not to swallow any water or get it in your eyes. Do not bathe in water that may be contaminated with sewage or toxic chemicals. This includes rivers, streams, or lakes that are contaminated by flood water (Takeda, Koga & Yaegashi, 2010). If you have a drinking water well, listen to your local health authorities for advice on using your well water for showering and bathing. If extensive flooding has occurred or you suspect that your well may be contaminated, contact your local, state, or tribal health department for specific advice on well testing and disinfection (Raghava, 2015).

- **Hand washing**

Several studies have depicted that school age children in rural areas encounter difficulty in the mastery of hand washing primarily due to challenges of water available to them (Raghava, 2015; Sharda & Shetty, 2018; Rabiei, Mohebbi & Patja, 2012; World Health Organization, 2017). It is essential for them to wash and wipe their hands with a warm washcloth before mealtime, after eating, and also cultivating this habit as an integral step in the process of personal hygiene practice (Global Handwashing Day, 2010).

Teachers are tasked in several studies to make it a priority to ask school children to wash their hands every time to encourage good hygiene outside mandatory times of like before meals, after playing outside, after petting an animal, or after being near a sick friend (Raghava, 2015; Sharda & Shetty, 2018; Rabiei, Mohebbi & Patja, 2012)

- **Nail hygiene**

School age children are advised to trim their nails regularly to keep them short and clean (Scott, Curtis & Rabie, 2017). Brush under them with a nail brush or washcloth to rinse away buildup, dirt, and germs. As well as a vital part of personal hygiene practice (World Health Organization, 2017). Tidying your nails helps you prevent spreading germs into your mouth and other body openings. You should also avoid biting your nails (Scott, Curtis & Rabie, 2017).

- **Sickness hygiene**

Some studies on the knowledge of personal hygiene among primary school pupils postulates that If you're not feeling well, you should take steps to keep from spreading germs to others (Sharda

& Shetty, 2018; Rabiei, Mohebbi & Patja, 2012). This includes covering your mouth and nose when sneezing, wiping down shared surfaces with an antibacterial wipe, and not sharing any utensils or electronics. Also, immediately throw away any soiled tissues (Scott, Curtis & Rabie, 2017).

2.1.3 Menstrual Hygiene as a Personal hygiene practice among school age adolescents

Menstruation is a normal physiological process of females at their reproductive age usually between primary and secondary school age. However, it is surrounded with social taboos and supernatural beliefs (Goel and Kundan, 2011). The poor knowledge and understanding of menstruation may lead to unsafe hygienic practice that intern increases the risk of reproductive and genito-urinary tract infections, cervical cancer, school drop-out, poor academic performance and overall poor quality of life. Despite such clinical and academic effects, the knowledge and hygienic practice of adolescent girls towards menstruation is not well addressed, particularly among school adolescent girls (Takeda, Koga & Yaegashi, 2010).

Menstruation is a universal and normal phenomenon during the reproductive age of females (Kumar & Srivastava, 2011). The onset of menses takes place usually during primar and secondary school age as adolescent period in which dominant physiological and emotional changes take place (Sommer, Ackatia-Armah, Connolly & Smiles, 2012). Adolescent is an essential period where females are preparing and adjusting themselves to manage their menstrual bleeding in safe and clean way (Adewuya, Loto & Adewumi, 2018). This is also the ideal time that girls often join different environments including high schools and tried to plan for their next adulthood life (Goel & Kundan, 2011).

However, most primary and secondary school girls (girls with age ranges of 10 to 19 years old) enter to their puberty stage (maturity) without preparing themselves due to the shortage of adequate information (Kumar & Srivastava, 2011). Most women are uncomfortable to discuss regarding "menses" as it is has a social taboo and adolescent girls could not have access to gain adequate information (Nwankwo, Aniebue & Aniebue, 2016). Even the little information they receive most commonly from religious institutions, peers, family member is often selective and surrounded by misperceptions (Nwankwo, Aniebue & Aniebue, 2016; Shanbhag *et al.,* 2014). For example, people in developing countries like Nigeria often perceive menstruation as something happened as a result of being cursed, a sign of diseases, and punishment from God, a lifelong process and others. As a result, adolescent girls perceive menstruation as something embarrassing that should be kept hidden (Sommer *et al.,* 2012). This can increase the vulnerability of adolescent girls to have mental, emotional and physical problems (Bhatt and Bhatt, 2015). These conditions further impair the daily activities, academic performance, school attendance, and social relationships of adolescent girls (Nwankwo, Aniebue & Aniebue, 2016; Sommer *et al.,* 2012).

The view in which girls perceive towards menstruation also affects their hygienic practice during their menstrual bleeding (Halbreich *et al.,* 2013). Women with better understanding of menses often have safe and clean way of managing their menstrual bleeding and vice versa (Takeda, Koga & Yaegashi, 2010). It is uncovered that poor menstrual hygiene practice can be a reason for reproductive and genitor-urinary tract infection, cervical cancer, school absenteeism, or drop-out, poor academic performance, lower self-esteem and poor quality of life (Adewuya, Loto & Adewumi, 2018). Moreover, girls have also often experienced feelings of fear, confusion and shame during their menstruation period as a result of smell, leakage, staining of clothes and

dropping of sanitary materials during their class schedules (Omu *et al.,* 2011). This can have also a negative impact on the concentration, class participation and confidence of their studies (Omu *et al.,* 2011).

Although poor knowledge and unsafe menstrual hygiene practice have such considerable clinical implications for the girls themselves and their future off springs, knowledge of adolescent girls regarding menstruation is poor and their hygienic practices are not correct, particularly with lower socio-economic contexts (Czerwinski, 2016; Lawan and Nafisa, 2010) It has been reported that 40–45% of adolescent school girls have poor knowledge and unsafe hygienic practice of their menstrual bleeding (Lawan and Nafisa, 2010) This might have a clinical implication to integrate the promotion of menstrual hygienic practice in the health care system and comprehensive efforts including policy implication are needed to improve girls' knowledge and safe hygienic practices towards menstruation right from her adolescent period (Shanbhag et al., 2014). Despite safe menstrual hygienic practices can have a paramount importance to help millions of women suffering from such complicated and complex problems Lawan and Nafisa, (2010) stated that it is the missed opportunity to address the level of understanding and hygienic practice of menstruation among girls earlier from their adolescent age in many developing countries including Nigeria. Little available studies in Nigeria primary schools had no a particular focus of primary and secondary school girls' knowledge and menstrual hygiene practice (Czerwinski, 2016; Raghava, 2015). Moreover, there is a need to re-examine the association between poor menstrual hygienic practice (PMHP) and obstetric and gynecological factors among adolescent school girls. This is unrecognized and unaddressed public health concern in developing countries like Nigeria.

2.1.4 Knowledge and attitudes of personal hygiene practice

The knowledge and attitudes of personal hygiene practices is a key component of assessing the personal hygiene practices of a particular area or group. The word hygiene is the practice of keeping oneself and one's surroundings clean, especially in order to prevent illness or the spread of diseases (Omu *et al.,* 2011). Hygiene practices are vital to one's health and well-being especially in the prevention of the communicable diseases (World Health Organization, 2017). In this regard, it is obvious that in most developing countries including Nigeria hygiene is important since hygiene preventable diseases are prevalent (Omu *et al.,* 2011). These diseases account for 80% of the illnesses together with other infectious diseases and malnutrition (Nwankwo, Aniebue, & Aniebue, 2016). In relation to that, students of higher education institutions (HEIs) in the country are targets of hygiene promotion (Halbreich, Borenstein, Pearlstein, & Kahn, 2013). For instance, a study by Aklilu et al. found that over 45% of the studied food handlers who work for the students' canteen in usman danfodiyo University are positive for different intestinal parasites.

In that respect, water supply, hygiene, and sanitation are highly demanding to lower and avoid the burden of communicable diseases significantly (World Health Organization, 2010). Especially hand hygiene is considered as one of the most important infection control measures since it breaks the transmission of microorganisms especially in medical centers (Water and Sanitation Program, 2017). A study showed that faeco-oral transmission of enteric diseases is caused by inadequate hand washing after defecation (Omu, Al-Marzouk., Delles, Oranye & Omu, 2011). Moreover, the study identified that good hand washing behavior is associated with better socioeconomic indicators including education of women especially when the right procedure for hand washing is strictly followed (Omu, Al-Marzouk., Delles, Oranye & Omu, 2011).

According to a report, hand washing with soap and water can reduce diarrheal disease by 35% or more (Global Handwashing Day, 2010). Hand washing can also help to reduce the prevalence of eye infections such as conjunctivitis and trachoma as well as respiratory illness significantly (Takeda, Koga, & Yaegashi, 2010). According to other studies, it is possible to put about nine barriers to prevent or block fecal-oral route of disease transmission (Water and Sanitation Program, 2017; Omu *et al.,* 2011; Nwankwo, Aniebue, & Aniebue, 2016; Sommer, Ackatia-Armah, Connolly & Smiles, 2012). In addition, hygiene is very important to avoid contamination of water and soil by intestinal and other pathogens (Water and Sanitation Program, 2017).

Further in history, religions connected hygiene with cleanliness and conduct. In this respect, understanding what hygiene meant in peoples' mind is crucial to bring desirable changes (Czerwinski, 2016). Therefore, all issues of hygiene demand the combination of proper knowledge, attitude, and practice (KAP) so that people can be knowledgeable about something, are convinced and practice it reasonably (Water and Sanitation Program, 2017).

Proper hygiene cannot be ensured with the only provision of hygiene facilities even though hygiene facilities are available, behavior of the users do matter in the effective control of those communicable diseases (Scott, Curtis & Rabie, 2017). Unless people are knowledgeable on the health risk posed for not practicing proper hygiene, it is likely that they ignore or under practice hygiene as evidenced by a related study conducted in primary schools (Scott, Curtis & Rabie, 2017) Therefore, Knowledge is a major challenge even though sanitation facilities could be well established as exhibited in schools of countries like Nigeria South Africa (Curtis, Danquah & Aunger, 2019). In that regard, hygiene related studies recommended the relevance of identifying gaps in Knowledge and practice.

2.1.5 Practice and Benefits of Personal Hygiene among School Age Children

A study reports that good personal hygiene is important for both health and social reasons among school age pupils (Sharda & Shetty, 2018; Sommer *et al.,* 2012). It entails keeping your hands, head and body clean so as to stop the spread of germs and illness. Your personal hygiene benefits your own health and impacts the lives of those around you, too (Sharda & Shetty, 2018). The social benefits associated with personal habits must also be considered. Since it involves washing your body every day and caring for yourself, it reduces the chances of body odor and thus, any chances of embarrassment at work or at school (Sharda & Shetty, 2018).

We are aware that one must have a daily personal hygiene routine and that it is important, but what does it involve?

- **Hand washing**

The first place to start with your personal hygiene routine is your hands it uses our hands constantly during the day, touching many different surfaces, shaking hands with people, eating our meals, typing on the laptop or using a common telephone at work, or even playing at school (Omu *et al.*, 2011). Naturally, our hands are the biggest carriers of germs (Global Handwashing Day, 2010; Snow *et al.,* 2018).

One of the quickest and simplest ways to ensure that school children are safe from illness is to practice good hand hygiene (Takeda, Koga & Yaegashi, 2010). It can keep illnesses such as cold, cough, flu and gastroenteritis (these can all be contracted or passed on through poor hand hygiene) at bay. They can stop the spread of illness-causing germs by washing their hands frequently with water and soap, such as Dettol Original Liquid Hand Wash. they should wash their hands:

1) Before eating or cooking food
2) Before picking up a baby
3) After visiting the toilet
4) After coughing or sneezing, or being in contact with someone who is ill
5) After being in contact with animals (Snow *et al.,* 2018).

- **Improved Dental Care**

Caring for your teeth and practicing good oral hygiene wards off gum disease, bad breath, tooth decay and many infections (Moutsopoulos *et al.*, 2016). Remember to always; make sure you and your family brushes their teeth twice a day –after breakfast, and before bedtime, Floss the teeth daily, Store your tooth brush in a clean, dry place and replace it regularly

- **Improved Bath**

Do shower every day using warm water and soap (World Health Organization, 2017). You could consider showering twice a day when the weather is warm. Daily bathing is an integral part of good personal hygiene because:

According to Goel and Kundan (2011) Bathing daily with soap such as Dettol Cool Bar Soap and warm water prevents body odor because it kills the odor-causing bacteria. Skin infections such as Athlete's Foot can be reduced by carefully washing and drying the affected areas daily. Shampoo and condition your hair at least once a week to keep the scalp clean and prevent head lice.

After being out all day at school or being caught in an unexpected downpour, get home and take a warm shower using soap like Dettol Gold Bar Soap to remove any harmful germs from your body these are practices and benefits personal hygiene offers to primary school wards (Snow *et al.,* 2018).

- **Hygienic Clothes**

Germs and dirt can cling to your clothes, too. Wash the clothes you wear after each use so that these germs and impurities are removed (Ejemot, Ehiri, Meremikwu & Critchley, 2018). This is especially important if you have been exposed to an ill family member or friend. Remove all traces of germs by adding Dettol Antiseptic Liquid or Dettol Disinfectant Multi-Use Hygiene Liquid to your laundry load. Your clothes will come out clean and smell fresh when you wear them next (Ejemot *et al.,* 2018).

Personal hygiene is not difficult (World Health Organization, 2010). Once you have a personal hygiene routine in place, it becomes a habit in no time. It is also important to set an example for your children so that they can also have their own personal hygiene routines to follow (Snow *et al.,* 2018).

- **Menstrual hygiene**

The importance of menstrual hygiene practice among primary and secondary school girls has a massive role in improving their health and well being (Goel & Kundan, 2011). Well improved menstrual hygiene practices reduce the risks of infections among adolescent school aged girls (Goel & Kundan, 2011).

2.1.6 Conditions influencing personal hygiene practices.

There are many conditions that can affect the way in which personal hygiene is maintained. These can be physical, psychological, social or as a result of a period in hospital (Taylor and Ann, 2013). Poor personal hygiene can result in a risk of infection and illnesses and also cause many social issues to arise as a result of odours and appearance (World Health Organization, 2010).

a. Physical Conditions

Certain disabilities can prevent the person from maintaining an acceptable level of hygiene that is appropriate for them (Sharda & Shetty, 2018). If the disability has developed over time, the sufferer may feel a great deal of frustration that their needs are not being met. Any amputation or paralysis can significantly alter a person's ability and advice and help should be sought from the GP to try and gain help in making any suitable domestic adjustments (Omu, Al-Marzouk., Delles, Oranye, & Omu, 2011).

Post-operative patients may find that their physical abilities are restricted, either temporarily or permanently. Plaster casts, surgical incisions etc. can all provide some degree of limitation. Adjustments should be pre-empted and help offered from family and friends even for mundane chores such as laundry and ironing (Taylor and Ann, 2013).

Anyone suffering from back problems and arthritis or other mobility affecting conditions may find getting in and out of the bath very difficult. If these problems are expected to be long-term, amendments of domestic appliances may be required. A shower may need fitting, possibly with a chair to help with hygiene needs, the use of a home hair dresser and nail technician may prove very beneficial (World Health Organization, 2019). Advice should be sought from your GP to find suitable arrangements; social services may be able to advise regarding help with additional costs (Taylor and Ann, 2013).

b. Psychological Conditions

Any mental health problem can affect a school child's ability and motivation for caring for their hygiene needs (Taylor and Ann, 2013). Depression, anxiety, schizophrenia, Alzheimer's and others are all known to have the potential to affect a person's ability to care for oneself. Loss of

memory, motivation, social isolation and a lack of self-worth are all contributory factors (World Health Organization, 2010) Carers of these sufferers can help by ensuring there are adequate provisions to be able to carry out these tasks. Making sure the soap, towels and such like are readily available and in view may help the person to remember to bathe or wash (Takeda, Koga, & Yaegashi, 2010). Oral hygiene and fluid intake are frequently overlooked in mental illness. A simple action such as a thorough cleaning of the teeth can significantly raise a person's moral and help them to feel better about themselves.

On the other extreme, those suffering with obsessive compulsive disorder can become focused on repeating hygiene tasks as a symptom of their illness (Taylor and Ann, 2013). It is not uncommon for sufferers to bathe far too frequently and use unsuitable cleansing agents. Help from the doctor may suggest appropriate treatments to combat this illness.

c. Social Factors

Unfortunately even in today's modern society, there are still school age children and individuals whom find hot water, soap and towels difficult to gain access to. This lack of resources can result in individuals becoming unkempt and socially isolated (World Health Organization, 2017).

Poor education and a lack of knowledge are other reasons why people have different ideas on hygiene needs (Goel and Kundan, 2011). It is important for young children to understand and be taught how to maintain their own hygiene at as early an age as possible.

2.1.7 Intervention Strategies for eliminating poor personal hygiene practices among schools

The following are the major key ways to eliminate poor personal hygiene practices according to Omu, Al-Marzouk., Delles, Oranye, & Omu, (2011).

- Provision of adequate WASH(waters sanitation ad hygiene) facilities
- Adequate Educational methods
- Dietary diversification
- Nutrition education and practices
- Government action in funding initiatives that will improve this knowledge transmission and practice

2.2 Theoretical Framework

2.2.1 Health Belief Model (HBM): The health belief Model is one of the most widely used models in Public health theoretical frameworks. (Baghianimoghadam, *et al.,* 2013) concluded that this model can explain health behavior modification and can act as foundation for health education intervention. Social psychologists developed the model to predict why individuals do not participate in preventive health behaviours that can reduce the risk of infections etc. this theory is a value expectancy theory developed to explain why individuals fail to participate in programmes to prevents diseases such as adopting healthy sanitary practices to prevent poor hygiene related infection. The Health Belief Model seeks to explain the pupils perceived health behavior, perceived threat, barriers, benefits and cues to action (Driver *et al.,* 2010).

Relating the Health Belief Model to this Study, it can be used to predict and understand the intention of primary pupils in order to design and follow long term and practical activities aiming at the improved practices against poor hygiene and its possible complication.

The Health Belief Model (HBM) is a tool that scientists use to try to predict health behaviors. It was originally developed in the 1950s and proposed by social psychologists Godfrey Hochbaum, Irwin Rosenstock, and Rosenstock and Kirscht. The model is based on the theory that a person's

willingness to change their health behaviors primarily comes from their health perceptions. According to this model, your individual beliefs about health and health conditions play a role in determining your health-related behaviors. Key factors that affect your approach to health include:

- Any barriers you think might be standing in your way
- Exposure to information that prompts you to take action
- How much of a benefit you think you wll get from engaging in healthy behaviors
- How susceptible you think you are to illness
- What you think the consequences will be of becoming sick
- Your confidence in your ability to succeed.

It can be helpful to look at how the Health Belief Model can be applied in different situations. One important aspect of public health is the design of programs that encourage people to engage in healthy behaviors, so understanding how this model can be applied to different situations can be useful. For example, experts may be interested in understanding public attitudes about cancer screenings. Looking at factors like perceptions of the risk of getting cancer, the benefits of being screened for cancer, and the barriers to being screened can help healthcare professionals look for ways to encourage people to get screened. The model may also be used for public health programs that are used in different settings. Schools, for example, may rely on educational programs to help children understand challenges regarding health, substance use, physical activity, nutrition, and personal safety. Such programs are often based on the Health Belief Model and work to educate, offer skills training, reduce barriers, and boost self-efficacy. The Health Belief Model can be a helpful way for health educators to design interventions that can

improve both individual and public health. By understanding the factors that influence the health choices people make, programs can tackle ways to reduce barriers, improve knowledge, and help people feel more motivated to take action. It can also be a useful tool for thinking about your own approach to your health. Consider how things such as perceived susceptibility, perceived barriers, self-efficacy, and other elements of the model influence your choices, then look for things that you can do to make healthier choices in your life. The Health Belief Model is a theoretical model that can be used to guide health promotion and disease prevention programs. It is used to explain and predict individual changes in health behaviors. It is one of the most widely used models for understanding health behaviors. The Health Belief Model focus on individual beliefs about health conditions, which predict individual health-related behaviors.

2.2.2 Theory of Planned Behavior: This theory has to with the readiness of individuals to change their behaviors associated with the risk of poor hygienic practice.

Pupils with differing levels of risks related to specific behaviors are likely to differ in their readiness to change their several bad habits and non hygienic measures related to their lifestyles including menstral hygiene. Relating this theory to the study, changes in lifestyle could either increase their risk of poor hygienic related infections. Quitting very bad lifestyles will all reduce the risk of developing infections related to poor hygiene, while the reverse will increase the risks. The Theory of Planned Behavior (TPB) started as the Theory of Reasoned Action in 1980 to predict an individual's intention to engage in a behavior at a specific time and place. The theory was intended to explain all behaviors over which people have the ability to exert self-control. The key component to this model is behavioral intent; behavioral intentions are influenced by the

attitude about the likelihood that the behavior will have the expected outcome and the subjective evaluation of the risks and benefits of that outcome.

The TPB has been used successfully to predict and explain a wide range of health behaviors and intentions including personal hygiene, drinking, health services utilization, breastfeeding, and substance use, among others. The TPB states that behavioral achievement depends on both motivation (intention) and ability (behavioral control). It distinguishes between three types of beliefs - behavioral, normative, and control. The TPB is comprised of six constructs that collectively represent a person's actual control over the behavior.

1. Attitudes - This refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior of interest. It entails a consideration of the outcomes of performing the behavior.
2. Behavioral intention - This refers to the motivational factors that influence a given behavior where the stronger the intention to perform the behavior, the more likely the behavior will be performed.
3. Subjective norms - This refers to the belief about whether most people approve or disapprove of the behavior. It relates to a person's beliefs about whether peers and people of importance to the person think he or she should engage in the behavior.
4. Social norms - This refers to the customary codes of behavior in a group or people or larger cultural context. Social norms are considered normative, or standard, in a group of people.

5. Perceived power - This refers to the perceived presence of factors that may facilitate or impede performance of a behavior. Perceived power contributes to a person's perceived behavioral control over each of those factors.
6. Perceived behavioral control - This refers to a person's perception of the ease or difficulty of performing the behavior of interest. Perceived behavioral control varies across situations and actions, which results in a person having varying perceptions of behavioral control depending on the situation. This construct of the theory was added later, and created the shift from the Theory of Reasoned Action to the Theory of Planned Behavior.

2.2.3 Trans theoretical Model:

This theory provides a guide in assessing the pupils stage of readiness and in determining the appropriate technique or intervention that would be most effective in promoting lifestyle and sanitary practices that reduces or increase the risk of poor hygienic related infections. This theory provides a framework for measuring behavioral change, as well as facilitating promotion strategies that are individualized and easily adapted. The stages of change towards habits that will reduce a person’s likelihood to develop infections like toilet infections, bad breathe cervical cancer etc as such, interventions that match the stage the individual is going through should be implemented. This theory describes changes such, quitting bad lifestyles and poor hygienic methods as they increase an individual’s risk of developing poor hygienic related infections.

2.3 Empirical Studies

This study by Ilika and Obionu (2012) assessed the effect of school-based health education on the practice of personal hygiene by children in primary schools in Anambra State, Nigeria. Three hundred and ninety-five (395) and three hundred and ninety-eight (398) primary school pupils

randomly recruited as intervention and control groups were rated on five key personal hygiene practices before, immediately after and three months after school-based hygiene health education. Less than 45% were rated clean before health education in both groups. Immediately after health education, more than 65% in the intervention group were rated clean. There was no change in the control group. The difference was statistically significant. However, there was a statistically insignificant decline in those rated clean three months after cessation of health education. The school-based health education improved the personal hygiene practice of the pupils. There is a need for regular reinforcement to sustain the gains.

A cross-sectional study was conducted by Adinma and Adinma in 2018 on 3rd, 4th and final (5th) year medical students of the Faculty of Medicine, University of Colombo, who had undergone at least 6 months of clinical training. KAP on hand hygiene (HH), Anal hygiene (AH) and equipment hygiene (EH) were assessed using a pre-tested, self-administered questionnaire with a Likert-type scale. KAP scores were graded as follows: good ≥75; moderate: 74.9–50; unsatisfactory: 49.9–25; poor :< 25%. KAP based on duration of training and gender was compared using independent samples t-tests. Overall, hand hygiene was moderate among medical students and improved with progression of training. Anal hygiene was also graded as moderate but to a lesser extent compared to hand hygiene, lower in males, and declined over time, indicating need for better reinforcement of attire hygiene practices with progression of clinical training. Equipment hygiene was unsatisfactory among most medical students and thus needs to be highlighted as a potential area to be improved during clinical training.

Another cross-sectional study by Goel and Kundan, (2011) was comprised of 669 students who were interviewed by trained staff. Participants were in grades 1-6 at Angolela Primary School, located in rural Ethiopia. Data consisted of hygiene and hand washing practices, knowledge

about sanitation, personal hygiene characteristics, and presence of gastrointestinal parasitic infection approximately 52% of students were classified as having adequate knowledge of proper hygiene. Most pupils reported hand washing before meals (99.0%), but only 36.2% reported using soap. Although 76.7% of pupils reported that washing hands after defecation was important, only 14.8% reported actually following this practice. Pupils with adequate knowledge of proper hygiene were more likely to have clean clothes (AOR 1.62, CI 1.14-2.29) and to have a lower risk of parasitic infection (AOR 0.78, CI 0.56-1.09) although statistical significance was not achieved for the latter.

Stephen *et al* (2016) conducted using a cross-sectional a study to evaluate the personal hygiene practices among university students aiming at providing a basis for preventive and predictive medical interventions and to make future efforts improve target interventions for young people. Validated instruments that related personal hygiene practices were used to obtain quantitative data from 412 tertiary students from seven universities in Accra, Ghana. There were more female respondents (54.4%) in the study than male respondents (45.6%). Respondents between the age group of 19-24 years constituted majority (59.7%) of the respondents in the study. Respondents from urban areas exhibited good hygiene practice compared to those from urban residences. There was a significant association between residence and hygiene practice ($\chi 2=17.8$, $P\leq 0.001$). We also observed that those respondents within the upper class in society had a poor hygiene practice, compared to the Lower Class and Middle Class respondents. Lack of education (63.1%) was observed as the main barrier to personal hygiene among the respondents. Future of the society depends on the health of its youth. The study concluded that a significant number of students are not actively practicing good hygiene. There is a need for deployment of preventive medicine interventions targeted at young people. It calls for improvement in methods of hygiene

education for young people in both secondary and tertiary institutions and the inclusion of hygiene in school curricula.

Another cross-sectional study involving 778 schoolchildren from 12 public primary schools by Akinyamoju, Dairo, Adeoye and Akinyamoju (2018) on the assess dental caries and oral hygiene status of schoolchildren in rural communities. A pre-tested, semi-structured interviewer-administered questionnaire was used to obtain information on socio-demographics and oral health practice. Dental caries was assessed using the decayed, missing and filled teeth (DMFT) index and oral hygiene status by the simplified oral hygiene and gingival indices. The mean age of the children was 11.0 ± 1.8 years, and the prevalence of dental caries was 12.2% with a mean DMFT/dmft of 0.2 ± 0.7. Children aged 10-12 years were 3 times more likely to have caries on ≥1 tooth (P = 0.01, confidence interval = 1.3-6.7). Herbal remedies were more often (35.3%) used to manage dental problems. The mean simplified oral hygiene and gingival indices were 1.7 ± 0.9 and 1.1 ± 0.5, respectively. The study concluded that the occurrence of dental caries appears to be increasing in rural Nigerian schoolchildren, but still within WHO limits. Oral hygiene status was poor and gingivitis was common.

Mourad *et al.* (2019) conducted a Cross sectional study on water-, sanitation-, and hygiene-related diseases are killing many people each year in developing countries, including Rwanda, and children under the age of five are the most vulnerable. This research assessed human waste disposal practices, knowledge on diseases caused by contact with human faeces, and knowledge on causes and prevention of selected WASH-related diseases. One thousand one hundred and seventy-three students were interviewed out of 2900 students. The results showed, regarding students' waste disposal practices, that 196.3% use latrines, 20.5% practice open defecation in bushes, and 3.2% defecate in water bodies. Regarding knowledge on diseases caused by contact

with human faeces, 56.9% responded that they were aware of cholera, 26.5% of diarrhoea, 2.2% of dysentery, 0.3% of malaria, 0.1% of shigellosis, and 3.8% of typhoid. The majority of the respondents, between 50-99%, could not identify the main causes of the WASH-related diseases. This paper also showed that students lack health knowledge in regard to WASH-related diseases' causes and prevention. Therefore, the provision of water and sanitation infrastructures should go with the provision of health education on how to avoid these diseases and possible ways to improve the well-being of the students both at home and in their various schools.

A study by Yadav *et al.* (2018) was to assess the current knowledge, attitude and practice of school adolescents on menstrual hygiene management in Doti District in Far-Western Nepal. This cross-sectional study was carried out from October to December 2016 at seven village development committees in Doti district, Nepal. This study was done among 276 students from grade seven and eight of 11 schools. Self-administered structured questionnaire was used to obtain information from school students. Descriptive analysis was done to analyse the knowledge, attitude and practice of school adolescents on menstrual hygiene management. 67.4% respondents had fair knowledge and 26.4% respondents had good knowledge on menstrual hygiene management. However, out of 141 female adolescent respondents, only 56 (40%) were engaged in good menstrual hygiene practices. Around half of the respondents had positive attitude towards menstrual hygiene management related issues. Although knowledge on menstrual hygiene management among school adolescents is fair, still attitude and practice need to improve. Findings indicate the need of behavior change communication campaigns along with frequent reinforcement of school health education programs.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study Design

A school based cross sectional Research design was employed for the study on the assessment of the personal hygiene of primary school pupils in Owerri West LGA. in Imo State.

3.2 Area of the Study

Owerri West Local Government Area of Imo State, Nigeria is located 295 km2 (114 sq mi) Owerri-West LGA was carved out of the former Owerri LGA in 1996. The Local Government is composed of fifteen communities Amakonia-Ubi,: Avu, Obinze, Oforola, Eziobodo Ihiagwa, Emeabiam, Okolochi, Okuku, Ndegwu, Ohii, Nekede, Irete, Orogwe, and Umuguma which is the capital of Owerri-West LGA, Imo State. Owerri-West LGA is administed under the trems of the constitution of the Federal Republic of Nigeria. The people are members of the Igbo ethnic group in the southeastern Nigeria. They number about Ninety-Nine thousand, Two Hundred and Sixty-Five (99,265) at 2006 census. Prominent locations in Owerri West include; The Federal Polytechnic Nekede, Owerri (FPNO), The Federal University of Technology, Owerri (FUTO).located at Ihiagwa and Eziobodo as the two major host communities with Okolochi, Obinze and Emeabiam as the minor communities. Nekede Zoo, Nekede Divisional Police, Federal Secretariat, State Secretariat, General Hospital Umuguma, World Bank Housing Estate Umuguma, Area L, M, N, Fedreal Housing Estate Umuguma, Concorde Hotel. The Market in Ihiagwa is called 'NkwoUkwu'. 'Uzi naAboshi' is used to denote Nekede and Ihiagwa because they are siblings. The government primary school in Owerri West is forty-four in number.

Obiwuruotu is the women dance group of Ihiagwa. Major religion is Christianity. The Otamiri River passes through the Town. The coordinates are 5.4006° N, 7.0122° E.

[Source: https.//www.medianigeria.com]

3.3 Study Population

This study was targeted at every public primary school pupils selected at Owerri West LGA. Imo State.

3.3.1 Inclusion criteria

The study included:

i. Respondents were primary 4-6 pupils in Owerri West LGA.Imo State.

3.3.2 Exclusion criteria

The study excluded:

i. Primary 4-6 school pupils at Owerri West LGA who are seen to be sick at the time of study.
ii. Primary school pupils at who are disabled during the time of the study.

3.4 Sampling

3.4.1 Sample Size Determination

The sample size for this study was determined using Leslie Kish (1965) formula.

$$n = \frac{Z^2 (p\ q)}{d^2}$$

Where

n =Desired sample size

z=critical value at 95% confidence level of uncertainty (1.96)

d=margin of error between the sample and the population= 5%

p=estimated proportion p= 50%

q=complimentary probability of p = (1-p)……., (i.e. 1-p) = 1- 0.5 =0.50

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2}$$

$$\frac{3.8416 \times 0.25}{0.0025}$$

$$\frac{0.9604}{0.0025}$$

=384.16 ……, =**384**

Adjusting for a 10% rate of non response and invalid response (i.e 90% expected response rate =0.90).

n= n/expected response rate

$$nrr = \frac{n}{1-nrr}$$

$$= \frac{384}{1- 0.10}$$

$$= \frac{384}{0.85}$$

=426.8444444……., = 427

Therefore the sample size for the study n, = **427.**

3.4.2 Sample Methods

A multistage sampling technique was used for this study on the assessment of the personal hygiene practices among public primary school pupils in Owerri West LGA. Imo State.

First stage: *Selection of public Primary Schools*

Twelve (12) out of the Forty-Four (44) public primary school in Owerri West LGA were selected via systematic random sampling to give every school an equal chance to be selected.

Second stage: *Selection of classes*

One class from Primary four, five and six each was selected from public primary schools in Owerri West LGA giving every primary school classes an equal chance of selection.

Third stage: *Selection of pupils*

At least, four hundred and twenty-seven pupils from each classes of primary 4-6 were selected for the twelve public primary school pupils were also selected. All concerned public primary school pupils were recruited consecutively until the minimum sample size was reached.

3.5 Instruments for Data Collection

The instrument for data collection was a Semi structured Questionnaire with Open and close ended Questions. The researcher also hired two field assistants who assisted her on the field of which they were trained on how to present the data tool to obtain information related to the study. The data tool (Questionnaire) consists of **Four (4)** sections namely; **Section A:** consist of Questions on their socio Demographic characteristics of public primary school pupils in Owerri West LGA. **Section B:** consist of Questions on the level of knowledge of personal hygiene practices among public primary pupils in Owerri west LGA. **Section C:** To consist of Questions on Various Practices of personal hygiene among public primary school pupils Owerri west LGA. **Section D:** consist of questions on the barriers to personal hygiene practices among public primary school pupils in Owerri west Local government Area.

3.6 Validity of Instruments

The questionnaire was carefully prepared by the researcher and was scrutinized and approved by the researcher`s supervisor (face validity). Also two other lecturers from the department of public health ascertained the validity to ensure that the questionnaire will obtain the objective of the research (Content Validity).

3.7 Reliability of Instruments

Test-retest method was used to test the reliability of the questionnaire. Test retest reliability is a statistical technique used to estimate components of measurement error by repeating the measurement process on the same subjects (Larvrakas 2008). The questionnaire was initially administered to respondents from a similar population and will be repeated. The data that was gathered from this research was analyzed to deem this study reliable. The questionnaire was pretested and chrombach Alpha test was performed to obtain a reliable coefficient of 0.8.

3.8 Method of Data Collection

Data was collected face to face to the respondents with the aid of a self-administered, well-structured and pre-tested questionnaire which was used to assess the knowledge and practice of personal hygiene by public primary school pupils at Owerri west LGA. The questionnaire was administered to the respondents after a verbal consent was obtained. The respondents were allowed to fill the questionnaires themselves, after which they were collected back by the researcher. The data collection was conducted by the researcher with the aid of two research assistants during the process.

3.9 Method of Data Analysis

The researcher inputed the data gotten from the questionnaire into the computer using the statistical package for social sciences (SPSS version 23) for the statistical analysis of the study. Data was presented using frequency tables to compare variables where necessary. Descriptive statistics such as percentages, pie charts and frequency distribution tables were employed in characterizing the respondents.

3.10 Ethical Consideration

The ethical approval to conduct this study was obtained from Department of Public health Local Ethics Committee Federal University of Technology Owerri. An introductory letter was obtained from the department as the researcher sought for the permission from the principal of the various primary schools. A verbal consent was obtained from all respondents in the study population after adequate explanation of the research benefits and risks. Anonymity was assured as names were not to be required at any stage of the study and the information obtained from the respondents were treated with utmost confidentiality.

CHAPTER FOUR

RESULTS

A total of four hundred and twenty seven (427) questionnaires were administered to the respondents and a total of four hundred and twenty seven (427) questionnaires were retrieved from them.

4.1 Socio demographic Characteristics of the Respondents

The table below disclosed that the majority of the informants, 41.2% (176) were between ages 8-10yrs. On the gender, 51.8% (221) of the respondents were female making the remaining 48.2% (206) male. The table also shows that majority of the informants, 90.6% (387) were of Igbo origin and just 2.1% (9) originated from the Yoruba ethnic group. The Hausa ethnic group is 2.3% (10), the minority group Ijaw is 2.3% (10) while the remaining 2.6% (11) included respondents from all other ethnic groups. Majority of the respondents, 89.5% (382) were

Christians, 6.3% (27) were Traditional worshippers and the least being 4.2% (18) was a Muslim. The last Socio demographic characteristics being the class, the table shows that the majority of 53.2% (227) belonged to Primary 4 followed closely by 28.1% (120) in primary 5, next in line being 18.7% (80) in Primary 6.

Table 4.1: Socio demographic Characteristics of the Respondents

Characteristics	Frequency	Percentage (%)
Age:		
5-7	34	8.0
8-10	176	**41.2**
11-12	148	34.6
13 and above	69	16.2
Total	**427**	**100**
Sex:		
Male	206	48.2
Female	221	51.8
Total	**427**	**100**
Ethnicity		
Igbo	387	90.6
Yoruba	9	2.1
Hausa	10	2.3
Ijaw	10	2.3
Others	11	2.6
Total	**427**	**100**
Religion:		
Christian	**382**	**89.5**

Islamic	18	4.2
Traditional worshippers	27	6.3
Total	427	100
Class		
Primary 4	227	53.2
Primary 5	120	28.1
Primary 6	80	18.7
Total	427	100

4.2 Knowledge of Personal Hygiene Practice among Respondents

Table 2 below reveals the responses as regards personal hygiene practices. Majority of the respondents 57.8% (247) have heard about personal hygiene while just 42.2% (180) had not. Also, 46.8% (200) of the informants have heard about it from their teachers, 19.9% (85) from their parents, 20.1% (86) heard about personal hygiene from Television/Radio sets and 6.3% (27) from other sources, meanwhile a low 2.1% (9) obtained their knowledge from Magazines. 60.7% (258) of the respondents obliged to personal hygiene including bathing, washing your hands, brushing your teeth, etc while just 39.3% (168) believed otherwise. On the issue of sharing drinking cups without washing, 41.5% (177) didn't see it aa a problem while a great 58.5% (250)

understood sharing drinking cups without washing could cause ill health. 60.2% (257) of the respondents were positive to hand washing with or without soap being the same, while 39.8% (170) disagreed and understood there are differences washing their hands without soap and washing with soap. A majority of the respondents 65.3% (279) also wouldn't eat raw vegetables or fruits without washing because they believe it can cause infection while 34.7% (148) don't think it can cause infections. 35.8% (153) of the respondents believe it is more important to wash your hands before meals than after while 64.2% (274) said otherwise. On the issue of Human faces containing germs that can cause infections, 36.8% (157) agree while a large 64.2% (270) disagree.

Table 4.2: Knowledge of personal hygiene practice among Respondents

Variables	Frequency	Percentage (%)
Heard about personal hygiene		
Yes	247	57.8
No	180	42.2
Total	**427**	**100**
Source of Information of Personal hygiene		
Parents	85	19.9
Teacher	200	46.8
Books	20	4.7
TV/Radio	86	20.0
Magazine	9	2.1
Others	27	6.3
Total	**427**	**100**

Personal Hygiene includes bathing, washing your hands, brushing your teeth etc		
Yes	259	60.7
No	168	39.3
Total	**427**	**100**
Sharing of drinking cups without washing can cause health problem		
Yes	250	58.5
No	177	41.5
Total	**427**	**100**
Hand washing with or without soap after toilet can cause infection		
No	170	39.8
Yes	257	60.2
Total	**427**	**100**
Eating Raw Vegetables or fruits without washing can cause infection		
Yes	279	65.3
No	148	34.7
Total	**427**	**100**
Washing Hands before meal is more important than doing it after meal		
Yes	153	35.8
No	274	64.2
Total	**427**	**100**
Human feces contain germs that can cause infection		
Yes	157	36.8
No	270	63.2
Total	**427**	**100**
Sharing combs, nailcutter, handkerchief can transmit diseases among pupils		
Yes	200	46.8
No	227	53.2
Total	**427**	**100**

4.3 Hygiene Practices among Respondents.

The results in the table below show the responses to Hygiene practices. 61.6% (263) of the respondents always brush their teeth daily. 37.0% (158) replied with "sometimes" and a low 1.4% (6) doesn't brush at all. 57.4% (245) also affirmed they cut their nails always, 41.6% (178) said they do sometimes and the others never. 1.0% (4). 56.0% (239) of the respondents take their bath daily, 44.0% (188) takes a bath sometimes. When asked if the respondents wear washed

clothes daily, 53.4% (228) said "always", 39.3% (168) replied with "sometimes" and 7.3% (31) said "Never". 43.8% (187) of the respondents always ironed their clothes before wearing, 48.0% (216) ironed sometimes and 8.2% (35) never ironed their clothes before wearing. When asked about how often they changed their underwear, 60.0 % (256) said "always" followed by 39.6% (169) who replied with "sometimes" and 0.4% (2) who replied with "never". 54.3% (232) of the respondents obliged to cut hair "always", 42.9% (183) of them replied with "sometimes" and 2.8% (12) of the respondents never cot their hair. When asked how often informants wash your hair after cutting, a majority 58.5% (250) replied with "always" a good number 168 (39.3%) replied with "sometimes" and the least 2.1% (9) were negative. The respondents were also asked if they remove dirty from their nose, 47.8% (204) replied with "sometimes", who also affirmed they remove dirty from their nose with hand 51.3% (219) with “always” The 25.3% (108) who said "always" using a handkerchief too gave 46.1% (197) replied with “sometimes” and 28.6% (122) said "Never", Als0, 52.2% (223) of the respondents affirmed they always wash their hands before eating, 44.0% (188) said "sometimes" and 3.8% (16) never washed their hands before eating. Upon the question of if they use soap to wash their hands after using the toilet, 47.5% (203) replied with "always", the majority being 43.6% (186) said "sometimes" and 8.9% (38) of the total told they never did. The respondents were asked if the use ashes to wash their hand 64.0% (273) replied “always” a good number 34.4% (147) replied with “sometimes” and 1.6% (7) replied “never” 36.5% (156) always washed their hands after handling live animals, 58.5% (250) replied with sometimes and the remaining 5.0% (21) never wash their hands. 32.8% (140) respondents said "Never".that the did not washed their hands before touching genitals, a large 38.9% (166) replied with "always" while 28.3% (121) said ""sometimes".

Table 4.3: Hygiene practices among Respondents

Hygiene Practices	Frequency	Percentage (%)
Do you Brush your teeth daily?		
Always	263	61.6
Sometimes	158	37.0

Never	6	1.4
Total	**427**	**100**
How often do you Cut your Nails?		
Always	245	57.4
Sometimes	178	41.6
Never	4	1.0
Total	**427**	**100**
Do you take your bath everyday?		
Always	239	56.0
Sometimes	188	44.0
Never	0	0.0
Total	**427**	**100**
Do you wear washed clothes daily		
Always	228	53.4
Sometimes	168	39.3
Never	31	7.3
Total	**427**	**100**
Do you iron your cloth before wearing?		
Always	187	43.8
Sometimes	205	48.0
Never	35	8.2
Total	**427**	**100**
How often do you change your under wears?		
Always	256	60.0
Sometimes	169	39.6
Never	2	0.4
Total	**427**	**100**
How often do you cut your hair?		
Always	232	54.3
Sometimes	183	42.9
Never	12	2.8
Total	**427**	**100**
How often do you wash your hair after cutting?		
Always	250	58.5
Sometimes	168	39.3
Never	9	2.1
Total	**427**	**100**
Do you use hand to remove dirty from your nose?		
Always	219	51.3
Sometimes	204	47.8
Never	4	0.9
Total	**427**	**100**
Do you use handkerchief to remove dirty from your nose?		
Always	108	25.3

Sometimes	197	46.1
Never	122	28.6
Total	**427**	**100**
Do you wash your hands before eating?		
Always	223	52.2
Sometimes	188	44.0
Never	16	3.8
Total	**427**	**100**
Do you use soap to wash hands after using the toilet?		
Always	203	47.5
Sometimes	186	43.6
Never	38	8.9
Total	**427**	**100**
How often do change your pad when menstruating?		
Always	239	56.0
Sometimes	188	44.0
Never	0	0.0
Total	**427**	**100**
Do you wash your hands after handling live animals?		
Always	156	36.5
Sometimes	250	58.5
Never	21	5.0
Total	**427**	**100**
Do you wash your hands after touching genitals?		
Always	166	38.9
Sometimes	121	28.3
Never	140	32.8
Total	**427**	**100**
Do you use tissue to clean your button after using toilet?		
Always	118	27.6
Sometimes	227	53.2
Never	82	19.2
Total	**427**	**100**

4.4 Barriers influencing the practice of personal hygiene among Respondents

Table 4: below focused on the barriers influencing the practice of personal hygiene among respondents. 57.8% (247) of the respondents didn't lack education on personal hygiene while a small 30.2% (129) affirmed they lacked basic education on hygiene. 83.4% (356) lacked adequate water supply while 16.6% (71) didn't. When asked if they lacked time, 40.5% (173) replied "No" and 59.5% (254) said "Yes". 60.2% (257) didn't accept their religious beliefs were a barrier to personal hygiene while 39.8% (170) was affirmative. Laziness didn't affect some 55.5% (237) of the respondents while 44.5% (190) were lazy to practice personal hygiene.

Table 4.4: Barriers influencing the practice of personal hygiene among Respondents

Barriers	Frequency	Percentage
Lack of Education		
Yes	247	69.8
No	180	30.2
Total	**427**	**100**
Inadequate water supply		
Yes	356	83.4
No	71	16.6
Total	**427**	**100**
Lack of time		
Yes	254	59.5
No	173	40.5
Total	**427**	**100**
Religious beliefs		
Yes	257	60.2
No	170	39.8
Total	**427**	**100**
Laziness		
Yes	237	55.5
No	190	44.5
Total	**427**	**100**

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion

Considering the socio demographic characteristics, with regards to age, findings from the study showed that majority of the respondents 41.2% (176), were at the age group 8-10years, The age seen in this study, is in consistence with the statement by Yadav *et al.* (2018), that majority of primary school pupils fall within this age category. Findings from this study showed that majority of the respondents 90.6% (387) were of Igbo origin and also 89.5% (382) were Christians. This was because the study was conducted in the Southern part of Nigeria and the government primary schools were located in Owerri West LGA, Imo state which is an Eastern state of the federation. Findings from the study revealed that majority of the respondents 57.8% (247) aware of personal hygiene. This corroborates with a study by Takeda *et al.,* (2010) that 95.9% of the respondents are aware of personal hygiene practice. In this study, it was revealed that majority of the respondents have 46.8% (200) of the respondents heard about personal hygiene from their teachers. This means during class's information about personal hygiene is being communicated to them. Findings from this study showed that 60.7% (259) of the respondents obliged to knowledge that personal hygiene including bathing, washing your hands, brushing your teeth, etc. this agrees with the study by Yadav *et al.* (2018), that 67.4% respondents had fair knowledge. A majority of the respondents 65.3% (279) had the knowledge that eating raw vegetables or fruits without washing can cause infection, this disagrees with a study by Nwankwo, Aniebue and Aniebue (2016), carried out at a northern secondary school that found that 34.7% of respondents had knowledge that vegetable fruits can cause infection. 64.2% (274) of the respondents had knowledge that it is more important to wash your hands before

meals than after. This agrees with a study by Akinyamoju, Dairo, Adeoye and Akinyamoju (2018) that showed that 69.3% of school children had knowledge of washing hands. Considering the findings from this study, it was revealed that majority 61.6% (263) of primary school pupils in Owerri west always brush their teeth daily and 57.4% (245) also affirmed they cut their nails always as a mark of hygiene practice. Findings on hygiene practice from this study corroborates with a similar study by Ejemot *et al.,* (2018), found that 81.4% of primary school pupils practice hygienic measures such as brushing their teeth and cut their nails. The study revealed that 98.0% (392) of the respondents take their bath daily, majority of the respondents 91.8% (367) wear washed clothes daily in line with good hygiene practice. Finding from the study showed that majority of the respondents 80.8% (323) always wash their hands before eating as a mark of hygiene practice. Findings about hand washing before eating from this study corroborates with a study carried out among school aged adolescents at Rwanda (Ejemot *et al.,* 2018). The study found that 78.7% of school aged adolescents wash their hands before eating. Further information on hygiene practices on the study showed that a poor percentage of the respondents 43.6% (186) use soap to wash their hands after using the toilet. This might be because of lack of water, ablutions and other sanitary facilities in the primary school. This goes against a study from Takeda *et al.* (2010) that showed that 76% of the adolescent school children wash their hands after going to the toilet. Considering another study by Omu *et al.,* (2011) 43.8% of the school children wash their hands after going to toilet, this falls in line with the study.

Considering the barriers influencing the practice of hygiene among primary school pupils in Owerri West, 57.8% (247) of the respondents didn't lack education on personal hygiene which means that their teachers taught them about hygiene practice. This finding goes in coherence with a previous study by Nwankwo *et al.* (2016) which stated that 89.7% of secondary school

girls who participated in a survey didn't lack education as part of hygiene practice. Majority of the respondents 83.4% (356) indicated lack of adequate water supply as a challenge to practice of hygiene which means that the Owerri West community service lack water provision at school and community at large. A similar study by Aklilu *et al.* (n.d.) in Daman Sokoto Community found that over 45% of respondents face the lack of basic water supply as a problem. This goes in corroboration with the study. Similarly from the study, 55.5% (237) of the respondents noted that Laziness didn't affect them towards practice personal hygiene, falling in line with a similar previous finding by Snow *et al.,* (2018).

5.2 Conclusion

Hygiene practices are vital to one's health and well-being especially in the prevention of the communicable diseases. Findings from this study showed that government primary school pupils are aware of personal hygiene practice thus, it implies that school-based health education improved the personal hygiene practice of the pupils. There is a need for regular reinforcement to sustain the gains particularly with areas of assessment in the study showing that sanitary provisions are of water is lacking. Poor hygiene practice contributes account for majority of the illnesses together with other infectious diseases among school children. Overall finding from the study concluded that primary school pupils in Owerri West LGA, Imo State, have a fair knowledge of hygiene practice among them.

5.3 Recommendations

The recommendations for this study include the following;

1. Health education on practice of hygiene understanding of its benefits should be made available for primary school pupils.

2. Improvement of the existing hygienic facilities in the school to cater for effective hygiene and sanitation practice among the pupils because poor hygiene could predispose one to illnesses and disease.

3. The study recommends government bodies to provide sanitary facilities at various tiers of the community to promote basic sanitation practices which includes; effective water supply, etc.

4. Strict guidelines to on hand washing and posters should be made at various corners of the classrooms to help impact the necessity of this practice to pupils.

REFERENCES

Adewuya, A., Loto, O. & Adewumi, T. (2018). Personal hygiene practices amongsecondary school students: prevalence, comorbid conditions, and correlates. *Arch Womens Ment Health*, 11(1): 13-18.

Adinma, E. D. & Adinma, J. (2018). Perceptions and practices of personal hygiene amongst Nigerian secondary school girls. *African journal of Reproductive Health,* 12(1):74-83.

Akinyamoju, C. A., Dairo, D. M., Adeoye, I. A. & Akinyamoju, A. O. (2018). Dental caries and oral hygiene status: Survey of schoolchildren in rural communities, Southwest Nigeria. *Nigerian Postgraduate Medical Journal,* 25(4):239-245. doi: 10.4103/npmj.npmj_138_18. PMID: 30588945.

American Dental Association, (2014). ADA Policy - *Definition of Oral Health* http://www.ada.org/en/

Bhatt, R. & Bhatt, M. (2015). Perceptions of women regarding personal hygiene *International Journal of Gynecological Obstet*. 88(2):164-7

Curtis, V. A., Danquah, L. O. & Aunger, RV. (2019). Planned, motivated and habitual hygiene behaviour: an eleven country review. *Health Education Research,*14(11):655-673.

Czerwinski, B. S. (2016) Adult feminine hygiene practices. School teens. *Applied epidemiology journal,* 9(3):123–9.

Ejemot, R. I., Ehiri, J. E., Meremikwu, M. M. & Critchley, J. A. (2018). Hand washing for preventing diarrhoea. *Cochrane Database Systematic Review*, 54

Folayan, M. O., Khami, M. R. & Folaranmi. (2012). Determinants of preventive health measures among senior dental students in Nigeria. *BMC Oral Health*, 43(3);13-28.

Global Handwashing Day. (2010). Global Public-Private Partnership for Hand Washing, Available at: www.globalhandwashingday.org

Goel, M. K. & Kundan, M. (2011). Psycho-social behaviour of urban adolescent school girls during menstruation. *Australian Medical Journal*, 4(1):49-51

Halbreich, U., Borenstein, J., Pearlstein, T. & Kahn, L. S. (2013). The prevalence, impairment, impact, and burden of premenstrual dysphoric disorder (PMS/PMDD). *Psychoneuroendocrinology*, 28(03):1-23.

Ilika, A. L. & Obionu, C. O. (2012). Personal hygiene practice and school-based health education of children in Anambra State, Nigeria. *Nigerian Postgraduate Medical Journal,* (2):79-82. PMID: 12163878.

Kumar, A. & Srivastava, K. (2011). Cultural and social practices regarding menstruation among adolescent girls. *Social Work Public Health*, 26(6):594-604.

Kumar, H., Behura, S. S. & Ramachandra, S. (2017). Personal hygiene knowledge, attitude, and practices among dental and medical students in eastern India - a comparative study. *Journal of International Social Prevention of Community Dentition, 9(01)*, 58-63.

Kumie, A. & Ali, A. (2015). An overview of environmental health status in Ethiopia with particular emphasis to its organization, drinking water and sanitation: A literature survey. *Ethiopian Journal of Health Development*, 19:89-103.

Lalani, A., Dasar, P. L. & Sandesh, N. (2015). Assessment of relationship between oral health behavior, oral hygiene and gingival status of dental students. *Indian Journal of Dent Res*, 26(04):592-597.

Lawan, U. & Nafisa W.Y. (2010). Menstruation and menstrual hygiene amongst dolescentschool girls in Kano, northwestern Nigeria. *African journal of Reproductive Health,* 14(3):201-207.

Loughlin, R. (2016). Follow-up of a low cost latrine promotion programme in one district of Amhara, Ethiopia: characteristics of early adopters and non-adopters. *Tropical Medicine and International Health, 14(*1):1406-15.

Lukacs, J. R. & Largaespada, L. L. (2016). Explaining sex differences in dental caries prevalence: saliva, hormones, and "life-history" etiologies. *American Journal of Human Biology,* 18(3):540-555.

Mourad, K. A., Habumugisha, V. & Sule, B. F. (2019). Assessing Students' Knowledge on WASH-Related Diseases. *International Journal of Environmental Research and Public Health,* 16(11):2052. doi: 10.3390/ijerph16112052. PMID: 31185642; PMCID: PMC6604011.

Moutsopoulos, N. M., Madianos, P. N. & Ann, N. Y. (2016). Low-grade inflammation in chronic infectious diseases: paradigm of *periodontal infections*, 1088(09):251-264.

Nwankwo, T. O., Aniebue, U. U. & Aniebue., P.N. (n.d). Menstrual disorders in adolescent school girls in Enugu, Nigeria. *Journal of Pediatric Adolescent Gynecolology*, 23(6):358-63.

Omu, F. E., Al-Marzouk, R., Delles, H., Oranye, N. O. & Omu, A. E. (2011). Personal hygiene practices. Prevalence and effects on nursing students' academic performance and clinical training in Kuwait. *Journal of Clinical Nursing,* 20(1)15-23.

Oswald, W. E., Hunter, G. C., Lescano, A. G., Cabrera, L., Leontsini, E. & Pan W. K. (2018) Direct observation of hygiene in a Peruvian shantytown: not enough handwashing and too little water. *Tropical Medical International Health,* 13 (3):1421-1428.

Rabiei, S., Mohebbi, S. & Patja, J. (2012). Physicians' knowledge of and adherence to improving oral health. *BMC Public Health*, 5(1); 12:855.

Raghava, L.A. (2015). Expanding the physician's role in addressing the oral health of adults. *American Journal of Public Health*, 20(2); 408-412.

Scott, B., Curtis, C. & Rabie, T. (2017). Health in our hands but not in our heads: understanding hygiene motivation among secondary school students. *Journal of Health Policy and Planning*, 22(1), 225-233.

Shanbhag, D., Shilpa, R., D'Souza, N., Josephine, P., Singh, J. & Goud, B. (2014). Perceptions regarding menstruation and practices during menstrual cycles among high school going adolescent girls in resource limited settings around Bangalore city, Karnataka, India. *International Journal of Collaborative Res. Intern Med Public Health*, 4(7):13-15.

Sharda, A. J. & Shetty, S. (2018). A comparative study of personal hygiene health knowledge, attitude and behaviour of first and final year students of Udaipur city, Rajasthan. *International Journal Dentition Hygiene,* 6(02):347-353.

Snow, M., White, G. L. & Kim H, S. (2018) Inexpensive and time-efficient hand hygiene interventions increase elementary school children's hand hygiene rates. *Journal of School Health*, 78(07):230-233.

Sommer, M., Ackatia-Armah, N., Connolly, S. & Smiles, D. (2012) A comparison of the menstruation and education experiences of girls in Tanzania, Ghana, Cambodia and Ethiopia. *Compare*. 45(4):589-609.

Stephen T., Jones, K. and Tahiru, M. (2016). Self-Assessment of Hygiene Practices towards Predictive and Preventive Medicine Intervention: A Case Study of University Students in Ghana. *Hygiene Reviews,* 17(4): 77-81

Takeda, T., Koga, S. & Yaegashi, N. (2010). Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in Japanese high school students. *Womens Ment Health*, 13(6):535-7.

Tanny, L., Komabayashi, T. & Long, D. L. (2016). The effect of education on oral health students' attitudes in Australia and New Zealand. *European Journal of Dentition*, 10(4):491-495

Taylor, G. W. and Ann, K. (2013). Bidirectional interrelationships between diabetes and periodontal diseases: an epidemiologic perspective. *Periodontol*, 6(2):99-112.

Water and Sanitation Program, (2017). Can hygiene be cool and fun: Insights from School Children in Senegal. Available at http://www.comminit.com/en/node/264152/38

World Health Organization, (2010). Hand-washing could save the lives of millions of children.Available at: http://www.scielosp.org/scielo.php?lng=en.

World Health Organization, (2017). *Oralhealth* ;http://www.who.int/mediacentre/factsheets/fs318/en/ 2012

World Health Organization, (2019). *World Health Statistics*. Available at:www.who.int/entity/whosis/whostat/2019.

Yadav, R. N., Joshi, S., Poudel, R. & Pandeya, P. (2018). Knowledge, Attitude, and Practice on Menstrual Hygiene Management among School Adolescents. *Journal of Nepal Health Res Counc*, 15(3):212-216. doi: 10.3126/jnhrc.v15i3.18842

APPENDIX A

QUESTIONNAIRE ON THE ASSESSMENT OF PERSONAL HYGIENE PRACTICES AMONG PRIMARY SCHOOL PUPILS AT OWERRI WEST LOCAL GOVERNMENT AREA

SECTION A: Socio Demographic Characteristics

INSTRUCTION: Please tick (√) the correct options besides each question and also fill in the spaces provided where appropriate with the correct options.

1. What is your Age: (a) 5-7yrs [ ] (b) 8-10yrs [ ] (c) 11-12yrs [ ] (d) Above 13 yrs [ ]
2. What is your Gender (a) Male [ ] (b) Female [ ]
3. Ethnicity (a) Igbo [ ] (b) Hausa [ ] (c) Yoruba [ ] (d) Ijwa [ ] (e) Others **(please specify)**……
4. Religion: (a) Christianity [ ] (b) Muslim [ ] (c) Traditional [ ]
5. What Class are you in? (a) PRI 4 [ ] (b) PRI 5 [ ] (c) PRI 6 [ ]

SECTION B: LEVEL OF KNOWLEDGE OF PERSONAL HYGIENE PRACTICE AMONG PRIMARY SCHOOL PUPILS IN OWERRI WEST LGA

INSTRUCTION: Please tick (√) the correct options besides each question in the spaces provided where appropriate with the correct options.

6. Have you heard about Personal hygiene? (a) Yes [ ] (b) No [ ]
7. What is your source of information on personal hygiene? (a) Parents [ ] (b) Teacher [ ] (c) Books [ ] (d) TV/Radio [ ] (c) Magazine [ ] (e) others_____
8. Personal Hygiene is how you care for your body and it includes bathing, washing your hands, brushing your teeth, and more. (a) Yes [ ] (b) No [ ] (c) Not Sure [ ]
9. Does Sharing drinking cups without washing bring health problem? (a) Yes [ ] (b) No [ ]
10. Does Hand washing with or without soap the same? (a) Yes [ ] (b) No [ ]
11. Do eating Raw Vegetables or fruits without washing cause amoebic infection? (a) Yes [ ] (b) No [ ]
12. Is Washing Hands after meal is more important than doing it before meal? (a) Yes [ ] (b) No [ ]
13. Do Human feces contain germs that can cause infection? (a) Yes [ ] (b) No [ ]
14. Electronic devices like cell phones can mechanically communicate diseases without hand washing (a) Yes [ ] (b) No [ ]

SECTION C VARIOUS HYGIENE PRACTICES AMONG PRIMARY SCHOOL PUPILS IN OWERRI WEST LGA

Please select ticking (√) the correct options in the box provided where appropriate with the correct options for your practice of Hygiene

S/n	**Hygiene Practices**	**Always**	**Sometimes**	**Never**
15.	Do you Brush your teeth daily.			
16.	How often do you Cut your Nails.			
17.	Do you take your bath daily.			
18.	Do you wear washed clothes daily			
19.	Do you iron your clothe before wearing.			
20.	How often do you change your under wears.			
21.	How often do you remove unwanted			

	hair.			
22.	How often do you wash your hair.			
23.	Do you pick your nose.			
24.	Do you use handkerchief when picking your nose.			
25.	Do you wash your hands before eating.			
26.	Do you use soap to wash hands after using the toilet.			
27.	How often do change your pad when menstruating.			
28.	Do you wash your hands after handling live animals.			
29.	Do you wash your hands before touching genitals.			
30.	Do you wash your hands after touching genitals.			

SECTION D: BARRIERS INFLUENCING THE PRACTICE OF PERSONAL HYGIENES AMONG PRIMARY SCHOOL PUPILS IN OWERRI WEST LGA

Please tick (√) the correct options that related as barriers influencing your practice of personal hygiene in the spaces provided in the Table below.

S/N	**Barriers**	Yes	No
31.	Lack of Education		
32.	Inadequate water supply		
33.	Lack of time		
34.	Religious beliefs		
35.	Laziness		

Thank You

OWERRI WEST LOCAL GOVERNMENT AREA, GOVERNMENT PRIMARY SCHOOOLS

S/N	NAMES OF AUTHONUOUS COMMUNTIES IN OWERRI WEST LGA	S/N OF SCHOOLS	NAMES OF GOVERNMENT SCHOOL IN OWERRI WEST LGAs.	TOTAL NUMBER OF THE SCHOOL
01	**AMAKOHIA-UBI COMMUNITY**	01	COMMUNITY SCHOOL, AMAKOHIA-UBI.	
		02	PRIMARY SCHOOL, AMAKOHIA-UBI	2
02	**AVU COMMUNITY**	03	CENTRAL SCHOOL, AVU	
		04	PRIMARY SCHOOL, AVU	2
03	**EMEABIAM COMMUNITY**	05	COMMUNITY ESTATE PRIMARY SCHOOL, UMUOKPU, WATERSIDE	
		06	COMMUNITY SCHOOL, OLOKWU, UMUSO	
		07	COMMUNITY UNITY SCHOOL EMEABIAM	
		08	COMMUNITY UNITY SCHOOL, UMUOKPU, WATERSIDE	
		09	DEVELOPMENT PRIMARY SCHOOL, UMUOKPU, EMEABIAM	
		10	PRIMARY SCHOOL, UMUOKPU, EMEABIAM	7
		11	PRIMARY SCHOOL, EMEABIAM.	
04	**EZIOBODO COMMUNITY**	12	CENTRAL SCHOOL, EZIOBODO	
		13	COMMUNITY UNITY SCHOOL, UMUAYO, EZIOBODO	
		14	EZIOBODO TOWN SCHOOL, EZIOBODO	3
05	**IHIAGWA COMMUNITY**	15	COMMUNITY CENTRAL SCHOOL, IHIAGWA	
		16	COMMUNITY PRIMARY SCHOOL IHIAGWA	
		17	COMMUNITY UNITY SCHOOL, IHIAGWA	
		18	PRIMARY SCHOOL, IHIAGWA	4

06	**IRETE**	19	COMMUNITY UNITY SCHOOL, IRETE	
		20	TEACHERS TRAINING COLLEGE PRACTICING SCHOOL, IRETE	2
S/N	**NAMES OF AUTHONUOUS COMMUNTIES IN OWERRI WEST LGA**	**S/N OF SCHOOLS**	**NAMES OF GOVERNMENT SCHOOL IN OWERRI WEST LGAs.**	**TOTAL NUMBER OF THE SCHOOL**
07	**NDEGWU COMMUNITY**	21	COMMUNITY UNITY SCHOOL, NDEGWU	
		22	PRIMARY SCHOOL, NDEGWU	2
08	**NEKEDE COMMUNITY**	23	CENTRAL SCHOOL, NEKEDE	
		24	TOWN SCHOOL, NEKEDE	
		25	UMUALUM PRIMARY SCHOOL, NEKEDE	
		26	UMUDIBIA CENTRAL SCHOOL, NEKEDE	4
09	**OBINZE COMMUNITY**	27	ARMY CHILDREN SCHOOL I, OBINZE	
		28	ARMY CHILDREN SCHOOL II, OBINZE	
		29	COMMUNITY SCHOOL ALADORO, OBINZE	
		30	PRIMARY SCHOOL, AZUDO, OBINZE	
		31	TEACHERS TRAINING COLLEGE PRACTICING SCHOOL, OBINZE	5
10	**OFOROLA COMMUNITY**	32	CENTRAL SCHOOL, OFOROLA	
		33	OLA MODEL PRIMARY SCHOOL, OFOROLA	2
11	**OHII COMMUNITY**	34	COMMUNITY UNITY SCHOOL, OHII	
		35	PRIMARY SCHOOL, OHII	2
12	**OKOLOCHI COMMUNITY**	36	COMMUNITY UNITY SCHOOL, OKOLOCHI	1
13	**OKUKU COMMUNITY**	37	CENTRAL SCHOOL, OKUKU	
		38	COMMUNITY SCHOOL, AMAPU, OKUKU	
		39	COMMUNITY SCHOOL,	

			OBOGWU, OKUKU	
		40	PRIMARY SCHOOL,UBORJI, OKUKU	4
14	**0R0GWE COMMUNITY**	41	COMMUNITY UNITY SCHOOL, OROGWE	
		42	UKWUEZI PRIMARY SCHOOL, OROGWE	2
15	**UMUGUMA COMMUNITY**	43	COMMUNITY UNITY SCHOOL, UMUGUMA	
		44	DEVELOPMENT PRIMARY SCHOOL, UMUGUMA.	2

Table:5

THE TEWLVE PUBLIC PRIMARY SCHOOL SYSTEMATIC RANDOM SELECTED IN OWERRI WEST LGA, IMO STATE

S/N	NAMES OF SCHOOL SELECTED	PRI 4	PRI 5	PRI 6	TOAL	QUESTIONNAIRE ADMINISTERED
01	**Community Primary School, Amakohia Ubi.**	**63**	**61**	**47**	**176**	**23.3**
04	**Primary School, Avu**	**54**	**49**	**66**	**169**	**22.3**
08	**Community Unity School, Umuokpu, Waterside, Emeabiam**	**59**	**69**	**58**	**186**	**24.6**
12	**Central School, Eziobodo**	**56**	**32**	**37**	**125**	**16.5**
16	**Community Primary School, Ihiagwa**	**185**	**203**	**168**	**556**	**73.5**
20	**Teachers Training College Practicing School, Irete**	**87**	**109**	**79**	**275**	**34.0**
24	**Town School, Nekede**	**80**	**102**	**106**	**288**	**38.1**
28	**Army Children School II, Obinze**	**109**	**92**	**120**	**321**	**42.4**

32	**Central School, Oforola**	**151**	**151**	**99**	**401**	**53.3**
36	**Community Unity School, Okolochi**	**117**	**98**	**74**	**289**	**38.2**
40	**Primary School Uborji, Okuku**	**74**	**85**	**118**	**277**	**36.6**
44	**Development Primary School, Umuguma**	**89**	**31**	**48**	**168**	**22.2**
	Total	**1,124**	**1,082**	**1,020**	**3, 231**	**425**

UNIVERSAL BASIC EDUCATION COMMISSION.

IMO STATE UNIVERSAL BASIC EDUCATION BOARD: RETURNS OF SCHOOLS STATISTICS FOR 2018/2019 ACADEMIC YEAR.

OWERRI WEST LGEA SUMMARY ON PUPIL ENROLMENT BY CLASSES BY GENDER IN PRIMARY SCHOOLS.

S/N	SCHOOL CODE	lat_n_d	lat_n_m	lat_n_dm	long_w_d	long_w_m	long_w_dm	NAME OF SCHOOLS	ENROLMENT BY CLASS, GENDER AND SCHOOL																		GRAN	
									PRIMARY 1			PRIMARY 2			PRIMARY 3			PRIMARY 4			PRIMARY 5			PRIMARY 6				
									M	F	T	M	F	T	M	F	T	M	F	TOT	M	F	TOT	M	F	T	M	F
1	16270001	05	23	12.8	006	57	43.7	ARMY CHILDREN SCHOOL I, OBINZE	28	64	92	87	91	178	125	98	223	84	81	165	59	54	113	111	57	168	494	
2	16270002	05	23	13.7	006	57	42.8	ARMY CHILDREN SCHOOL II, OBINZE	49	78	127	49	43	92	49	67	116	42	67	109	49	43	92	49	71	120	287	
3	16270003	05	26	50.6	006	57	38.7	CENTRAL SCHOOL, AVU	63	50	113	56	71	127	21	16	37	32	43	75	46	9	55	46	40	86	264	
4	16270004	05	21	58.6	007	00	11.2	CENTRAL SCHOOL, EZIOBODO	4	16	20	18	19	37	21	43	64	37	19	56	18	14	32	18	19	37	116	
5	16270005	05	25	52.3	007	01	06.1	CENTRAL SCHOOL, NEKEDE	49	43	92	104	91	195	115	126	241	118	129	247	104	105	209	163	153	316	653	
6	16270006	05	25	25.4	006	55	40.4	CENTRAL SCHOOL, OFOROLA	49	67	116	52	47	99	56	26	82	84	67	151	66	85	151	49	50	99	356	
7	16270007	05	25	23.6	006	55	55.2	CENTRAL SCHOOL, OKUKU	49	53	102	84	71	155	66	64	130	77	85	162	63	88	151	80	85	165	419	
8	16270008	05	24	08.2	007	00	36.8	COMMUNITY CENTRAL SCHOOL, IHIAGWA	30	24	54	22	26	48	32	43	75	34	42	76	43	46	89	34	43	77	195	
9	16270009	05	16	06.5	006	59	15.9	COMMUNITY ESTATE PRIMARY SCHOOL, UMUOKPO	17	16	33	4	9	13	1	12	13	4	16	20	8	22	30	15	16	31	49	
10	16270010	05	23	54.1	007	00	18.3	COMMUNITY PRIMARY SCHOOL, IHIAGWA	94	85	179	49	22	71	84	112	196	90	95	185	84	119	203	94	74	168	495	
11	16270011	05	24	35.1	006	57	26.5	COMMUNITY SCHOOL, ALADORO OBINZE	32	19	51	21	29	50	28	12	40	49	78	127	46	54	100	80	33	113	256	
12	16270012	05	32	36.7	006	57	14.2	COMMUNITY SCHOOL, AMAKOHIA UBI	21	26	47	42	29	71	32	33	65	25	43	68	21	40	61	21	26	47	162	
13	16270013	05	28	40.5	006	56	54.5	COMMUNITY SCHOOL, AMAPU OKUKU	21	26	47	42	34	76	23	40	63	53	33	86	39	60	99	59	54	113	237	
14	16270014	05	29	03.4	006	56	17.3	COMMUNITY SCHOOL, OBOGWU OKUKU	46	47	93	63	71	134	72	74	146	70	74	144	73	85	158	84	91	175	408	
15	16270015	05	19	45.6	006	59	22.7	COMMUNITY SCHOOL, OLOKWU UMUSO	23	27	50	23	18	41	26	26	52	34	23	57	31	23	54	15	23	38	152	
16	16270016	05	28	08.1	006	57	52.4	COMMUNITY UNITY SCHOOL UMUGUMA	56	42	98	32	25	57	42	34	76	34	31	65	23	32	55	32	38	70	219	
17	16270017	05	19	44.9	007	01	28.9	COMMUNITY UNITY SCHOOL, EMEABIAM	25	22	47	21	47	68	32	16	48	35	29	64	15	33	48	28	54	82	156	
18	16270018	05	24	08.2	007	00	37.2	COMMUNITY UNITY SCHOOL, IHIAGWA	28	31	59	49	36	85	25	40	65	35	29	64	15	36	51	21	29	50	173	
19	16270019	05	31	05.5	006	58	50.9	COMMUNITY UNITY SCHOOL, IRETE	11	17	28	15	1	16	18	16	34	42	29	71	15	19	34	28	22	50	129	
20	16270020	05	31	57.6	006	58	46.7	COMMUNITY UNITY SCHOOL, NDEGWU	28	21	49	23	31	54	23	18	41	19	21	40	20	21	41	28	31	59	141	
21	16270021	05	32	57.5	006	59	44.7	COMMUNITY UNITY SCHOOL, OHII	32	33	65	35	22	57	15	33	48	32	16	48	15	12	27	8	5	13	137	
22	16270022	05	22	03.3	007	01	43.3	COMMUNITY UNITY SCHOOL, OKOLOCHI	38	40	78	38	31	69	40	37	77	63	54	117	65	33	98	43	31	74	287	
23	16270023	05	32	32.4	006	58	54.8	COMMUNITY UNITY SCHOOL, OROGWE	26	22	48	28	26	54	28	16	44	21	26	47	25	9	34	21	19	40	149	
24	16270024	05	22	05.0	007	00	31.0	COMMUNITY UNITY SCHOOL, UMUAYO EZIOBODO	24	29	53	36	38	74	30	31	61	42	38	80	38	36	74	37	41	78	207	
25	16270025	05	16	32.8	006	59	20.0	COMMUNITY UNITY SCHOOL, UMUOKPO WATERSIDE	32	45	77	25	37	62	29	27	56	30	29	59	37	32	69	29	29	58	182	
26	16270026	05	27	45.0	006	57	58.3	DEV PRIMARY SCHOOL, UMUGUMA	39	53	92	42	51	93	52	71	123	49	40	89	15	16	31	18	30	48	215	
27	16270027	05	18	45.7	007	00	57.3	DEV PRIMARY SCHOOL, UMUOKPO EMEABIAM	25	43	68	28	48	76	28	26	54	42	26	68	47	68	115	44	109	153	214	

												1		2		3		4		5		6											
28	1627 28	05	21	50.5	007	00	37.8	EZIOBODO TOWN SCHOOL, EZIOBODO	32	50	82	28	50	78	35	57	92	49	36	85	32	64	96	66	91	157	242						
29	1-270029	05	25	22.3	006	55	29.7	OLA MODEL PRIMARY SCHOOL, OFOROLA	49	71	120	70	78	148	49	112	161	77	91	168	56	71	127	63	71	134	364						
30	16270030	05	32	22.4	006	57	27.2	PRIMARY SCHOOL, AMAKOHIA UBI	35	31	66	28	41	69	39	39	78	28	39	67	42	44	86	35	39	74	207						
31	16270031	05	27	20.5	006	58	09.0	PRIMARY SCHOOL, AVU	25	38	63	26	39	65	25	16	41	25	29	54	22	27	49	37	29	66	160						
32	16270032	05	24	41.4	006	57	36.3	PRIMARY SCHOOL, AZUDO OBINZE	32	19	51	35	57	92	15	35	50	39	42	81	28	42	70	59	59	118	208						
33	16270033	05	19	44.9	007	01	28.9	PRIMARY SCHOOL, EMEABIAM	49	59	108	42	38	80	44	32	76	32	51	83	28	39	67	49	49	98	244						
34	16270034	05	24	13.2	007	00	15.9	PRIMARY SCHOOL, IHIAGWA	28	49	77	42	41	83	77	51	128	70	74	144	59	48	107	39	37	76	315						
35	16270036	05	32	58.9	006	59	40.5	PRIMARY SCHOOL, OHII	70	65	135	53	35	88	44	35	79	44	24	68	47	45	92	63	77	140	321						
36	16270037	05	28	58.0	006	55	27.9	PRIMARY SCHOOL, UBORJI OKUKU	47	50	97	40	41	81	29	31	60	42	32	74	54	31	85	56	62	118	268						
37	16270038	05	18	34.7	007	00	47.4	PRIMARY SCHOOL, UMUOKPO EMEABIAM	42	19	61	35	41	76	56	41	97	94	82	176	15	31	46	111	75	186	353						
38	16270039	05	26	20.3	007	00	45.6	TOWN SCHOOL, NEKEDE	49	56	105	40	40	80	53	54	107	39	41	80	47	55	102	64	42	106	292						
39	16270040	05	31	13.2	006	59	30.7	TTC PRACTICING SCHOOL, IRETE	63	76	139	56	54	110	34	41	75	45	42	87	45	64	109	34	45	79	277						
40	16270041	05	24	34.6	006	57	39.5	TTC PRACTICING SCHOOL, OBINZE	28	30	58	34	41	75	56	50	106	56	63	119	56	34	90	55	43	98	285						
41	16270042	05	32	06.8	006	59	03.1	UKWUEZI PRIMARY SCHOOL, OROGWE	45	51	96	71	68	139	59	61	120	69	75	144	67	78	145	48	51	99	359						
42	16270043	05	27	00.5	007	01	20.5	UMUALUM PRIMARY SCHOOL, NEKEDE	28	49	77	49	56	105	90	93	183	135	142	277	116	103	219	103	111	214	521						
43	16270044	05	26	37.8	007	01	58.7	UMUDIBIA CENTRAL SCHOOL, NEKEDE	33	28	61	97	39	136	65	54	119	65	52	117	67	57	124	95	101	196	422						
44	16270057	5	31	36.4	6	58	8.5	PRIMARY SCHOOL NDEGWU	63	60	123	49	56	105	90	93	183	135	142	277	116	103	219	180	321	501	633						
									108545	104686	213253	1E+05	102925	210060	1E+05	1E+05	2E+05	1E+05	105516	2E+05	1E+05	1E+05	2E+05	1E+05	1E+05	2E+05	644901	618					

2018/2019