KNOWLEDGE, ATTITUDE AND PRACTICE OF PERSONAL HYGIENE AMONG PRIMARY SCHOOL PUPILS IN PLATEAU STATE, NIGERIA

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AHMADU BELLO UNIVERSITY,

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A DISSERTATION SUBMITTED TO THE POSTGRADUATE SCHOOL, AHMADU BELLO UNIVERSITY, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF EDUCATION DEGREE IN HEALTH EDUCATION

EPARTMENT OF HUMAN KINETICS AND HEALTH EDUCATION,
AHMADU BELLO UNIVERSITY,
ZARIA

APRIL, 2019

DECLARATION

I declare that this dissertation entitled **Knowledge, Attitude and Practice of Personal Hygiene among Primary School pupils in Plateau state, Nigeria** has been written and compiled by me in the Department of Human Kinetics under the supervision of Dr. Umaru Musa and Prof. C.E. Dikki. All sources of information have been appropriately acknowledged in the text and written in the list of references. No part of this dissertation was previously presented for another Degree at any University.

_____ _____

Rahila KURE Date

CERTIFICATION

This Dissertation entitled **Knowledge, Attitude and Practice of Personal Hygiene among Primary School Pupils in Plateau State, Nigeria** was written by Rahila Kure to meet the regulations governing the award of Master's Degree in Health Education, Ahmadu Bello University, and could be a useful material in Academic field to improve personal hygiene among Primary School Pupils.

_____ _____

Dr. Umaru Musa Date
Chairperson, Supervisory Committee

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Prof. C.E. Dikki Date
Member, Supervisory Committee

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Prof. (Mrs.) M.A. Suleiman Date Date
Head of Department

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Prof. S.Z. Abubakar Date
Dean, Postgraduate School

DEDICATION

I gladly dedicate this work to God Almighty. It is also dedicated to my parents Mr. and Mrs. Mallam Kure, my husband Engr. Shola Akinfenwa and my children, Favour and Praise whose support brought me this far and made this research work possible.

ACKNOWLEDGMENTS

The researcher expresses her deepest gratitude and appreciation to God Almighty who in His grace made this work possible. The researcher sincerely appreciates her supervisors Dr. Umaru Musa and Prof. C.E. Dikki for their unreserved support and enriching comments throughout the research work. Their constructive criticisms have today made this research work possible, May the Almighty God reward you abundantly and bless the fruit of your labour. Her special thanks goes to Prof. (Mrs) M.A. Suleiman, Prof. E.A. Gunen, Prof. (Mrs.) Dashe, Prof. (Mrs.) T.N. Ogwu, Prof. (Mrs.) F.B. Adeyanju, and all members of Staff in the Department for their encouragement and contributions to the success of this research work

Special thanks to Mr. Danjuma Kure, Mr. and Mrs Martha Sambo, Mrs Mary Emmnuel, Yahana Kure, Markus Kure, Ishaya Sunday, Rita Simon, Samuel Kure, Susan Kure, Mr. Tanko, and Mr Paul for their prayers encouragement and support in the course of this study.The researcher also want to acknowledge her class mate for their cooperation and support for each other which brought about the success of this research. Indeed it was nice getting to know you all.

Her thanks also goes to her parents Mr. and Mrs. Mal. Kure her lovely Husband, Engr. Shola Akinfenwa, her Children - Favour and Praise, for their continuous encouragement, financial and material support throughout this programme. The researcher loves you all.

ABSTRACT

The purpose of this study was to assess the knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau state, Nigeria. The study was also guided by three (3) purposes, three research questions and three (3) hypotheses. The study employed ex-post-facto research design. The population of the study was 828,717 between the ages of 7 to 13 years pupils in Plateau state. A sample size of 400 was randomly selected proportionately through stratified sampling techniques, simple random sampling techniques and proportionate sampling. A closed ended questionnaire was used for the study. Descriptive statistics of frequency count, percentage, mean, standard deviation and one sample t-test were used to test the hypotheses of the study. Findings revealed that knowledge of school pupils towards personal hygiene in Plateau State is significant (t=5.207,p=0.021), because the probability value is less than 0.05 at 5% level of significance, the t-value value is 5.207 greater than 1.972 t-critical is at degree of freedom 392. The attitude of school pupils towards personal hygiene in Plateau State is not significant (t=1.341, p=0.081) as the result of the analysis shows that the probability value is greater than 0.05 at 5% level of significance, t-value is 1.341 is less than 1.972 t-critical at a degree of freedom 392 and practice of school pupils towards personal hygiene in Plateau State is not significant (t=1.291, p=0.39) as the result of analysis presented shows that the probability value is greater than 0.05 at 5% level of significance, the t-value value is 1.291 is less than the 1.972 t-critical at degree of freedom 392. On the basis of these findings, these recommendations were made. State Ministry of Health and other relevant organizations concerned with health care should intensify effort by creating health and Hygiene Promotion Programmes such as Talk shows and Seminars in Schools on the importance of hygiene through the formation of Health Club that would teach pupils on proper hygienic practices, and provide incentives for good hygiene practices. Though, the respondents have adequate knowledge of personal hygiene, there should be continuous education and sensitization through monitoring pupils by the School Authorities.

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LIST OF ABBREVIATION

WHO	-	World Health Organization
CDC	-	Centers for Disease Control and Prevention
KAP	-	Knowledge, Attitude and Practice
ADA	-	American Dentist Association
DDT	-	Dichlorodiphenyltrichloroethane

OPERATIONAL DEFINITIONS OF TERMS

Knowledge of Personal Hygiene: This can be defined as awareness of personal hygiene among Primary School Pupils in Plateau State.

Practice of Personal Hygiene: This refers to acts of personal hygiene among Primary School Pupils in Plateau State.

Attitude toward Personal Hygiene: This refers to the feelings, thoughts, and predisposition among Primary School Pupils that make them to behave in some particular manner towards Personal Hygiene.

Personal Hygiene: Personal hygiene is the art of keeping oneself clean, to prevent illness and diseases.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases (World Health Organization, 2014). According to Centers for Disease Control and Prevention (2016) hygiene is an act that can lead to good health and cleanliness such as frequent hand-washing, regular bathing, wearing clean clothes and good practice of environmental hygiene. It is the art of keeping body clean and smelling fresh through proper body hygiene that washes off visible and microscopic dirt and bacteria. Hygiene is a science that deals with the promotion and preservation of health. Park, (2017) defined hygiene as the study and practice of keeping good health especially paying attention to cleanliness with the view to preventing diseases and promoting health; thereby, prolonging life. Lutans, (2014) stated that human environmentally related diseases such as malaria typhoid, diarrhea and dysentery are constant threat to life due to unhygienic practices. Personal hygiene is the act of keeping oneself clean and well groomed. In addition to its social implications, personal hygiene plays an important role in preventing both the spreading and contracting of diseases.

Hygiene is very important for living a healthy life free from diseases. Poor hygiene knowledge, attitude and practices and inadequate sanitary conditions play major roles in the increased burden of communicable diseases within developing countries and therefore has negative consequences for child's long term overall development. Many diseases spreading from virus, bacteria, and protozoa microorganisms can be prevented, if good hygiene is practiced. Teaching pupils the importance of good hygiene will improve their health for a lifetime (Oyibo, 2012). Personal hygiene which is also referred to as personal care is a public health tool that is used for disease prevention and health promotion in individuals,

families and communities. Personal hygiene includes the following: regular washing of the body (bathing), washing hands when necessary, cutting nails, washing clothing, washing hair, brushing teeth, keeping feet clean, caring for gum among others (Oyibo, 2012).

According to Postma, Getkate, and Vanwijk, (2014), school pupils are particularly vulnerable to neglect of basic personal hygiene. The consequences in terms of morbidity and mortality are also more severe in them compared to adults. The increased burden of communicable diseases among primary school pupils due to poor knowledge, attitude and practices of personal hygiene and inadequate sanitary conditions remain a concern on the public health agenda in developing countries. The hands are probably the single most important route for transmission of infection in the home and community, as they are often in direct contact with the mouth, nose and conjunctiva of the eyes. They also come in contact with food and water that is consumed. Studies have revealed a strong and consistent causal link between poor hand hygiene and gastrointestinal infection (Ananthakrishnan, Pani, & Nalini,2015).

Amongst all the communicable diseases promoted by poor personal hygiene, helminthic infestation contributes the greatest proportion. Although these helminthes can infect all members of a population, the most vulnerable group are school pupils (WHO, 2016). Long-Shan, ., Bao-Jun, Jin-Xiang, Sen-Hai, & Jack,(2015) observed that good personal hygienic practices encouraged through health education has been reported to be associated with low prevalence of communicable diseases in primary school pupils. Personal hygienic practices therefore plays an important role in preventing spread of respiratory infections, helminthiasis, skin infections, eye infections food borne diseases, spread of new

pathogens as in epidemics. Certain respiratory infections (common cold, influenza virus infection.) have also been linked to poor personal hygienic practices (WHO, 2012).

Hygiene practices are preventive measures to reduce the occurrences of disease and are parts of good personal grooming**.** Hygiene does not only include personal hygiene related to food, clothing and exercise but also sciences such as engineering, bacteriology, public sanitation and waterworks (Oyibo, 2012). The researcher's belief, therefore, affirms the fact that prevention is better than cure. In support of the above, Park (2015), expressed that infectious and parasitic diseases associated with low standards of personal hygiene remain the leading cause of morbidity and mortality in many developing countries. Bloomfield, Exner, Fara, Scottand and Vander (2017), stressed that positive personal hygiene will prevent water disease such as diarrhea, dysentery, cholera, bilharzias and typhoid.

Bloomfield, Aiello, Cookson, O'Boyle and Larson (2017), stressed that personal hygiene involved those practices performed by an individual to care for one's bodily health and wellbeing, through cleanliness. Motivations for personal hygiene practice include reduction of personal illness, healing from personal illness, optimal health and sense of wellbeing, social acceptance and prevention of spread of illness to others. What is considered proper personal hygiene can be cultural – specific and may change over time. Bloomfield, Aiello, Cookson, O'Boyle, &Larson, (2017) explained further, that other practices that are generally considered proper hygiene include bathing regularly, washing hands regularly especially before handling food, washing scalp hair, keeping hair short or removing hair, wearing lean clothing, brushing one's teeth and cutting finger nails, besides other practices.

Primary school pupils are in the period of development from one stage to another, from childhood to a larger society. At this period, children are exposed to communicable diseases for being together with many children from a number of communities (Bubenik, 2013). At the stage of primary school, the child encounters a number of infectious diseases and potential handicapping conditions which could have been easily prevented from occurring through proper personal hygiene practice. Therefore, knowledge, attitude and practice of hygiene among target populations are needed to plan and design behavioral interventions. It is against this background that this study is conducted to assess the knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State, Nigeria, with a view to providing useful data for appropriate action by the relevant Authorities.

1.2 Statement of the Problem

One of the major problems faced by primary school pupils in Nigeria is infections. The primary causes of infections are contaminated water and poor sanitation as well as poor hygienic practices, lack of personal hygiene coupled with poor sanitation favours person-to-person transmission of infection among primary school pupils in Plateau State. Hygiene plays a vital role in preventing some of the common communicable disease which spread mainly through water, food, personal contact and surrounding environment (Oyibo, 2012).The importance of school health has been acknowledged across countries since the beginning of 20th century (Ananthakrishnan*et al*,2015).

Without encouraging primary school children on the issue of personal hygiene, some may develop unhygienic habits such as lack of proper care of their finger nails, eating with unwashed hand and wearing dirty clothes. Other unhygienic practices that can be found

among primary school children are sharing one cup when drinking water and using one spoon when eating food by many primary school pupils. These can serve as an avenue to transfer diseases from one person to another.

School teachers are considered the major source of information for their pupils and would appear to be suitable as health educators. School teachers are expected to be role models so that pupils can emulate and adopt their behaviour and attitudes.Meaningful knowledge positively influence attitude formation because of the recipient`s comprehension of health facts, it is positive attitude formation which leads to positive behaviour. On the contrary, superficial knowledge leads to misconception of facts and development of negative attitude. Negative attitudes result in practicing harmful behaviour

The knowledge, attitude and practice of personal hygiene among primary school pupils to the best of the researcher's knowledge is not up to the standard and has remained neglected. Therefore, primary school pupils in the study area may not have enough knowledge of personal hygiene. These could make the primary school pupils to develop unhygienic practices such as lack of proper care of their finger nails, eating with unwashed hand, wearing dirty clothes, sharing one cup when drinking water and sharing one spoon when eating food. It was assumed that they would not cover their nose and mouth when coughing with clean handkerchief or tissues and also irregular bathing could be found among primary school pupils. Neglect of hygiene goes a long way in explaining why water and sanitation programs have often not brought the expected benefit. School health services have tended to focus on nutritional support and clinical assessment. These inputs are absolutely necessary, but so is the need to assess the knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State.

1.3 Purpose of the Study

The purpose of this study was;

i. To assess the knowledge of personal hygiene among primary school pupils in Plateau State;

ii. To assess the attitude of Primary school pupils towards personal hygiene in Plateau State.

iii. To assess the practice of personal hygiene among primary school pupils in Plateau state.

1.4 Research Questions

This study answered the following research questions;

1. Do Primary School Pupils have knowledge of personal hygiene in Plateau State?
2. What is the attitude of primary school pupils towards personal hygiene in Plateau State?
3. Do primary school pupils practice personal hygiene in Plateau State?

1.5 Hypotheses

Major Hypothesis

1. Knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State is not significant.

Sub Hypothesis

a) Primary school pupils will not have significant Knowledge of personal hygiene in Plateau State.

b) Primary school pupils will not have significant positive attitude towards personal hygiene in Plateau State.

c) Primary school pupils will not have significant Practice of personal hygiene in Plateau State.

1.6 Basic Assumptions

On the basis of available research evidence and professional opinion, the following assumptions were made for the purpose of this study:

1. Primary school pupils have knowledge ofpersonal hygiene in Plateau State.
2. Primary school pupils have positive attitude towards personal hygiene in Plateau State.
3. Primary school pupils will practice personal hygiene to some level in Plateau state.

1.7 Significance of the Study

It is expected that the findings of this study would be help to;

Add to the body of knowledge through hygienic practices of primary school pupils in Plateau State.

It will establish the knowledge about hygiene among primary school pupils and also the findings could be used to educate primary school pupils to understand further need for practicing personal hygiene in their daily living.

The knowledge, attitude and practice of personal hygiene of primary school pupils in Plateau state are not well established to the best knowledge of the researcher. This study will

establish the knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State.

This study would be used as a policy change under the National School Health Programme and relevant authorities as a tool for parents and teachers to enshrine the values of personal hygiene in school pupils as an appropriate health intervention.

The results of this study would contribute to the existing information on knowledge, attitude and practice of personal hygiene among schools in Plateau State. Also it would be of benefit to the future researchers to further develop research on the personal hygiene practices among Junior Secondary School Students.

1.8 Delimitation of the Study

This study was delimited to knowledge, attitude and practice of personal hygiene among primary school pupils in the three Senatorial Zones in Plateau State.The study was also limited to public primary schoolchildren between primary 4 to 6 in the three Senatorial Zones in Plateau State.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This study was conducted to assess knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State. To achieve this purpose of this study, related literature were reviewed under the following:

1. Concept of Personal Hygiene
2. Components of Personal Hygiene.
3. Importance of Hygiene to Primary School Pupils.
4. Knowledge of Personal Hygiene among Primary School Pupils
5. Attitude of Primary School Pupils towards Personal Hygiene
6. Practice of Personal Hygiene among Primary School Pupils
7. Diseases and Conditions that may arise from Inadequate Personal Hygiene among PrimarySchool pupils
8. Empirical Review
9. Summary

2.1 Concept of Personal Hygiene

Hygiene is defined as the study and practice of keeping good health especially paying attention to cleanliness. It is the science of cleanliness or rules for healthy living(Kalua 2015). He further explained that hygiene is the study of cleanliness with the view to preventing diseases and promoting health thereby prolonging life. Hygiene is an old concept related to medicine, as well as to personal and professional care practices related to most aspects of living. In medicine and in home (domestics) and everyday life- settings, hygiene practices are employed as preventive measures to reduce the incidence and spreading of diseases. In the manufacture of food, pharmaceutical, cosmetic and other products, good hygiene is a key part of quality assurance that is ensuring that the product complies with microbial specifications appropriate to its use.

According to Lutans, 2014 stated that hygiene is the science which teaches us how to keep healthy with simple law of health as applied to individual people. In general, hygiene means practices that prevent spread of disease caused by organisms. Since cleaningprocesses (for example. hand washing) remove infectious microbes as well as dirt and soil, they are often the means to achieve hygiene.

Centers for Disease Control and Prevention, (2016) defined hygiene as an acts that can lead to good health and cleanliness, such as frequent hand washing, face washing and bathing with soap and clean water, practicing personal hygiene in many parts of the world can be difficult due to lack of clean water and soap. Hygiene is an act of keeping the human body as well as the environment clean. Hygiene as a general term that refers to the conditions and activities that are used to maintain health and safety with proper sanitation and personal cleanliness.

The word Hygiene refers to condition and practices that help to maintain and prevent the spread of diseases (WHO, 2014).Hygiene is a science that deals with the promotion and preservation of health. Sanusi, (2016) defined hygiene as the study and practice of keeping good health especially paying attention to cleanliness with the view to preventing diseases and promoting health thereby, prolonging life. Personal hygiene is not just about combed shiny hair and brushed teeth, it is important for workers health and safety in the working place. Workers who pay attention to personal hygiene can prevent the spread of germs and diseases, reduce their exposures to chemicals and contaminants and avoid developing skin allergies, skin conditions and chemical sensitivities, it also minimize the risk of infection and enhance overall health (Bubenik, 2013).

Personal hygiene may be described as the principle of maintaining cleanliness and grooming of the external body (Natze, 2017). There are many contributory factors that make up personal hygiene with the main ones being hand washing, oral care, hair care, nail care, wound care, cleansing of personal utensils and preventing infection. He further explained that personal hygiene is as it says, personal.Everybody has their own habits and standards that they have been taught or have learned from others. It is essentially for the' promotion and continuance of good health. Personal hygiene involves those activities or practices performed byan individual to care for one's bodily health and wellbeing, through cleanliness. Motivation for personal hygiene practice includes reduction of personal illness, healing from personal illness, optimal health and sense of wellbeing, social acceptance and prevention of spread of illness to others (WHO, 2016).

Personal hygiene is one of the mechanisms used for breaking disease transmission cycles. It also helps the individual to have a good aesthetic value by the people he/she is

living with. Moreover, it is a good figure of better living style (Tadesse, 2013). Its practices include seeing a doctor, seeing a dentist, regular washing (bathing or showering) of the body, regular hand washing before and after eating, wearing clean clothing, washing of scalp and hair, brushing and flossing of the teeth, covering ones mouth while coughing, basic manicure and pedicure, genital hygiene and healthy eating (Oyibo, 2012).

Personal hygiene is therefore, a measure taken at individual level to promote personal cleanliness so that transmission of diseases from source to susceptible hosts is prevented. It can be seen that the most effective way in protecting the health of communities where treatment options are constraints due to lack of health care delivery systems is personal hygiene. Many health problems are due to poor hygiene behaviour (Tadesse, 2013). The benefits of safe water supply and sanitation efforts in a given community can easily be lost if the communities still carry on with their poor personal hygiene behaviour. To achieve these goals, hygiene education plays a central role and has to be applied on a sustainable way (Oyibo, 2012).

Disease from inadequate access to safe water, sanitation and hygiene is a large threat to health, with the risk varying around the world. Each year, an estimated 3.4 million people die due to unsafe water, sanitation, and hygiene related causes, with almost 2 million deaths from diarrhea disease alone. A large proportion of these deaths occur in the developing world. Even more staggering is the morbidity that is caused by these diseases with consequences for the economy, education, development and overall well-being (Natze B, 2017).Poor hygiene practices and inadequate sanitary conditions play major roles in the increased burden of communicable diseases within developing countries. Majority of the health problems affecting school pupils are preventable by promotion of hygienic practices

through proper health education by the teachers, who are the first contact. Hygiene plays a vital role in preventing some of the common communicable diseases which spread mainly through water, food, personal contact and surrounding environment. Mainly, diseases spreading virus, bacteria, and protozoa micro-organisms can be prevented, if good hygiene is practice. Neglect of hygiene goes a long way in explaining why water and sanitation programs have often not brought the expected benefit.

2.2 Components of Personal Hygiene

Sustaining personal cleanliness costs very little when it is compared with its importance and the consequence of not doing same. In this case everybody can practice it at home with the domestic equipment and material. Components of personal hygiene includes: body hygiene, oral hygiene, hand hygiene, personal grooming, travelling hygiene, hair care hygiene, sleeping hygiene, feet hygiene, tooth hygiene, eye hygiene, cloths hygiene, genital areas hygiene (Tadesse, 2013).

2.2.1 Body Hygiene

Body hygiene involves hygiene practices performed by an individual to care for ones bodily health and well-being through cleanliness (Natze, 2017). Body hygiene is achieved by using personal hygiene products including: soap, hair shampoo, hair conditioner, cotton swabs, deodorant, cream, lotion, facial tissue, hair clippers, nail cutters, nail files, hand sanitizers, skin cleansers, razors, shaving cream, body cream and toilet paper (Tadesse, 2013).Care of the body as practiced varies from one area to another depending on various factors such as culture, climate, and availability of water and / or other personal hygiene products (Soumya, D., Sinjita, D., Aparajita, D. &Raghunath, M,2010). Moreover, care of

the body is a wide term which encompasses the following: care of the skin, care of the hair, care of the eye, care of the ears, care of the nose, oral hygiene, hand hygiene, clothes hygiene, genital hygiene and foot hygiene.

2.2.2 Care of the Ear among Primary School Pupils

The ear has external, middle, and inner portions. The outer ear is called the pinna and is made of ridged cartilage covered by skin. Sound funnels through the pinna into the external auditory canal, a short tube that ends at the eardrum (tympanic membrane). Sound causes the eardrum and its tiny attached bones in the middle portion of the ear to vibrate, and the vibrations are conducted to the nearby cochlea. The spiral-shaped cochlea is part of the inner ear; it transforms sound into nerve impulses that travel to the brain (Helen *et al*,2017).

The fluid-filled semicircular canals (labyrinth) attach to the cochlea and nerves in the inner ear. They send information on balance and head position to the brain. The eustachian (auditory) tube drains fluid from the middle ear into the throat (pharynx) behind the nose. Under ideal circumstances, the ear canals should never have to be cleaned. However, that isn't always the case. The ears should be cleaned when enough earwax accumulate to cause symptoms or to prevent a needed assessment of the ear by the doctor (Tadesse, 2013). This condition is call cerumen impaction, and may cause one or more of the following symptoms:

i. Earache, fullness in the ear, or a sensation in the ear is plugged
ii. Partial hearing loss, which may be progressive
iii. Tinnitus, ringing, or noises in the ear
iv. Itching, odor, or discharge
v. Coughing

To clean the ears, wash the external ear with a cloth, but do not insert anything into the ear canal. Most cases of earwax blockage respond to home treatments used to soften wax. Patients can try placing a few drops of mineral oil, baby oil, glycerin, or commercial drops in the ear. Detergent drops such as hydrogen peroxide or carbomide peroxide may also aid in the removal of wax (Pheabean, 2014).

2.2.3 Care of the Skin amongPrimary School Pupils

The human skin is the outer covering of the body. In humans, it is the largest organ of the integumentary system. The skin has multiple layers of ectodermal tissue and guards the underlying muscles, bones, ligaments and internal organs. Human skin is similar to that of most other mammals, except that it is not protected by a fur. Though nearly all human skin is covered with hair follicles, it can appear hairless. There are two general types of skin, hairy and glabrous skin. The adjective cutaneous literally means "of the skin" (from Latin *cutis*, skin). Because it interfaces with the environment, skin plays a key role in protecting the body against pathogens and excessive water loss. Its other functions are insulation, temperature regulation, sensation, synthesis of vitamin D, and the protection of vitamin Bfoliates. Severely damaged skin will try to heal by forming scar tissue. This is often discolored and de-pigmented (Soumya, D., Sinjita, D., Aparajita, D. &Raghunath, M, 2016).In humans, skin pigmentation varies among populations, and skin type can range from dry to oily. Several scientific studies confirmed that changes in baseline nutritional status affects skin condition (Marks and Miller, 2016).

2.2.4 How to Care for the Skin

Cleaning your body is also important to ensure your skin rejuvenate itself, as in scrubbing of your arms, legs and torso will slough off dirt, dry skin and help your skin stay healthy and refreshed (Oyibo, 2012). Dermatologists recommend that a person wash his face two times a day with a mild soap or gentle cleanser. If too much of the skin natural oil is washed away, the skin may become very dry and may begin to itch and flake. Dermatologists also recommend the following for clean and healthy skin: use lotion only if needed, and use ones that are oil-free and water-based. Try to identify what irritates the skin; if it's stress, try to reduce stress levels. Leave pimples alone; picking, popping, or squeezing will only make them worst. Have only a Dermatologist remove or extract pimples. Try to avoid touching the face in washing the body, special attention needs to be paid to certain part of the body because they are prone to bacterial infections due to increased sweat production in those regions because of a high concentration of apocrine sweat glands; for example, the armpit regions or the face and back regions due to the incidence of acne common in adolescent (Soumya*et al*,2010).

2.2.5 Care of the Hair amongPrimary School Pupils

Hair is a protein filament that grows from follicles found in the dermis. Hair is one of the defining characteristics of mammals. The human body, apart from areas of glabrous skin, is covered in follicles which produce thick terminal and fine vellus hair. Most common interest in hair is focused on hair growth, hair types and hair care, but hair is also an important biomaterial primarily composed of protein, notably keratin. Attitudes towards hair, such as hairstyles and hair removal, vary widely across different cultures and historical

periods, but it is often used to indicate a person's personal beliefs or social position, such as their age, gender, or religion (Sherrow V, 2016).

The word "hair" usually refers to two distinct structures:

1. The part beneath the skin called the hair follicle or when pulled from the skin, called the bulb. This organ is located in the dermis and maintains stem cells which not only re-grow the hair after it falls out, but also are recruited to re-grow skin after a wound (Krause, K. & Foitzik, K, 2016).
2. The shaft, which is the hard filamentous part that extends above the skin surface. A cross section of the hair shaft may be divided roughly into three zones.

   Hair fibers have a structure consisting of several layers, starting from the outside:

1. The cuticle, which consists of several layers of flat, thin cells laid out overlapping one another as roof shingles,
2. The cortex, which contains the keratin bundles in cell structures that remain roughly rod-like.
3. The medulla, a disorganized and open area at the fiber's center.

Functions of the Hair

Many mammals have fur and other hairs that serve different functions. Hair provides thermal regulation and camouflage for many animals; for others it provides signals to other animals such as warnings, mating, or other communicative displays; and for some animals hair provides defensive functions and, rarely, even offensive protection. Hair also has a sensory function, extending the sense of touch beyond the surface of the skin. Guard hairs give warnings that may trigger a recoiling reaction (Griffin, 2014).

How to Care for the Hair

Health care of the hair is also called beautification of the hair. The healthy hair is black (or other natural hair colors), lustrous, thick, dense, then long and beautiful (Griffin, 2014). The hair is closely related to the organs of purtenance. The state of the hair can directly reflect the state of the purtenance, gas and blood. Extreme emotional activities may also cause changes of the hair. For example, excessive worrying and anxiety often give rise to premature grey hair and baldness (Dean andSiva –Jothy, 2011).

Combing the hair can promote gas flow and blood circulation, dispel wind, improve eye sight, tonify the brain, refresh people, make the hair lustrous and consolidated, relieve headache, prevent common cold, promote sleeping and reduce blood pressure. Dean and Siva –Jothy (2011) suggested that the correct method to comb the hair is:

- Comb the hair from the front to the back, then from the back to the front, from the left to the right, then from the right to the left. Comb the hair this way for dozens of times or hundreds of times. The hair can be combed in the morning, during the lunch break and before bed time
- Massage with the fingers may be cooperatively applied during combing the hair; the ten fingers of the both hands are apart from one another naturally. Then knead circularly with the palmer sides or tips of the fingers from the anterior hairline to the posterior one. Then, knead and massage the scalp from the two sides to the vertex with even force. Repeat the process for 36 times until the scalp gets warm.

2.2.6 Care of the Nose amongPrimary School Pupils

The nose, the door to respiratory tract, is a central and prominent structure of the face. The nose is the important organ to perform metabolism in the human body as well as the first line of defense to prevent the viral invasion into the human body. Therefore, it is important to protect it (Soumya*et al*,2010).

How to Care for the Nose

i. **Bathing the nose:**

Bath the nose with cold water and cold air. Persevering in bathing the nose can improve the blood circulation of the nasal mucosa effectively, enhance the nasal adaptive capacity of weather changes and prevent common cold and other disease of respiratory tract (Bubenik, 2013).

ii. **Massage:**

This includes 3 movements of rubbing the nose, then scraping the nose and rubbing the apex of the nose. Rub the middle joint of the thumbs against each other until they get warm. Then, rub the two sides of the bridge of the nose with the warm middle joint for 24 times. This is the first movement. Scrap the nose bridge from the upper part to the lower part for 10 times. This is the second movement. Rub the apex of the nose for 12 times respectively with the fingers of the both hands. This is the third movement. This exercise promotes the local blood circulation, makes the nasal skin moist and lustrous, moisten the lung and prevent common cold (Soumya*et al*,2010).

iii. **Blowing:**

In addition, people should cultivate the good habit of blowing the nose. Namely, hold the nose between the thumb and index finger to discharge the nasal mucous forcefully; do not press one side to blow the nose. This may make the nasal discharge in the nasal cavity of the other side.

2.2.7 Care of the Eye among Primary School Pupils

The human eye is an organ that reacts to light and has several purposes. As a conscious sense organ, the mammalian eye allows vision. Rod and cone cells in the retina allow conscious light perception and vision including color differentiation and the perception of depth. The human eye can distinguish about 10 million colours (Barton and Byrne, 2017).

Similar to the eyes of other mammals, the human eye's non-image-forming photosensitive ganglion cells in the retina receive light signals which affect adjustment of the size of the pupil, regulation and suppression of the hormone melatonin and entrainment of the body clock (Barton and Byrne, 2017).

How to Care for the Eye

Diet and regular upkeep are two important factors in taking care of the eyes. Eye exercises can restore the sight. The eyes are the window to the world. It is important to take care of them. The American Optometric Association (2013), outlined the below ten (10) ways of caring of the eyes:

i. Eat lots of Fruits and Vegetables

Carrots, loaded with beta carotene are especially healthful in maintaining healthy eyes. That is because beta carotene is an antioxidant that reduces the risk of mascular degeneration.

a. Broccoli, bell peppers, and Brussels sprouts are also great for the eyes, containing lots of vitamin C. though, not the greatest tasting vegetables in the world but can be dip into hummus or other yummy yoghourt spread to make them palatable.

b. Wild salmon and sardines are also healthy options for the eye. That's because they contain omega-3 fats, which are the good fats for the body. These omega-3s protect tiny blood vessels in the eyes.

c. Sweet potatoes and spinach round out the healthy options for maintaining good eyes. Both contain beta carotene, and spinach contains lots of vitamin C, lutein and zeaxanthin. Make the sweet spuds into home-fries with a bit of olive oil, and make spinach into a tasty side or a delectable dip.

ii. Avoid Wearing contacts lenses for more than 19 hours.

This can cause permanent sight damage as well as extreme discomfort to the eyes. Glasses should not be worn for too long especially 3-D glasses.

a. Never sleep with contact lenses unless specifically instructed to do so. The eyes need regular supplies of oxygen, and lenses block the flow of oxygen to the eyes especially during sleep. So doctors recommend a normal period of break for the eyes during the night.

b. Avoid wearing the contact lenses when swimming. The lenses could easily slip off when they come in contact with the surface area of the water. If wearing goggles, contact lenses may be used while swimming.

iii. Use allergen- reducing eye drops sparingly.

Using an allergen-reducing eye drop during allergy season to 'get the red out' and sooth itchiness may help on a limited basis, but chronic daily use can actually make the problem worse.

a. Allergen- redu0cing eye drops work by constricting the blood flow to the cornea, thereby depriving it of oxygen. So while the eyes don't feel inflamed and itchy anymore, they are actually not getting any oxygen from the blood. That is not ideal.
b. Using redness-relieving eye drops chronically will cause more redness in the eyes. The body gets so accustomed to the chemicals in the eye drops that they no longer work effectively.
c. Read the labels of eye drops carefully; many drops cannot be used while wearing contacts.

iv. Use Cucumber on your eyelids.

Press cold cucumber slices gently against eyelids 10 times before going to sleep at night to prevent puffiness.

a. Cucumbers contain ascorbic acid and caffeic acid, which prevent water retention. These compounds help explain why cucumbers are used throughout the world to treat inflammation and dermatitis

b. Green tea bag may also help prevent puffiness if applied to the eyes. Soak the tea bag in cold water for a few minutes and place over eyes for 15 – 20 minutes. The tannins in the tea should help reduce inflammation.

v. Wear Ultraviolet (UV) protective sunglasses.

Polarized lenses, not just darker lenses should be used. The lenses that only make the world darker will just make the pupils dilate and do not stop the UV rays.

a. Prolonged exposure to UV rays can harm the eyesight; protection in youth can help prevent loss of eyesight in later years. Exposure to UV rays has been linked to cataracts, muscular degeneration, pingueculae and pterygia, harmful conditions for the eyes.

b. Since the damage to eyes from UV rays builds up over a lifetime, it is important to shield pupils from harmful rays. Ensure pupils wear hats and protective glasses when they are out in the sunlight for prolonged periods.

c. Be sure to wear sunglasses even if in the shade. Even though shade lessens UV exposure significantly, not wearing sunglasses still exposes the eyes to UV rays reflected off of building and other structures.

vi. Try not to spend so much time looking at your computer screen

Give the eyes a break, if it is not use to do anything too important.

a. While science has not yet proven that looking at computer screens causes permanent eye damage, it may cause eye strain and dry eyes. The glare from computer screens causes muscle fatigue in the eyes, either from being too bright or too dark.

b. People blink less when they are looking at a screen, causing drier eyes. Make a conscious effort to blink every 30 seconds when sitting down and looking at the computer screen to combat dry eyes.

vii Wear goggles when appropriate.

Be sure to wear goggles or other eye protective wear when working with chemicals or any place with harmful airborne particulates.

a. Minimize the transmission of harmful particulate matter into the eyes region.

Exercise the eyes, and also be sure to relax them.

a. Try focusing the eyes on objects that are near, then objects that are far away. Repeat this process multiple times.
b. Sit down, place the elbows on the hips, eyes closed and brought down, resting them on the palms. Keep the palms covering the eyes for 10 seconds. Open the eyes and repeat as necessary.
c. Stretch the arm out and place the thumb in the hitchhiker position. The vision focused on the thumb while the outstretched arm is slowly brought closer to the body, until the thumb is about five inches from the face. Slowly zoom the thumb back to its original position, on it with the eyes all the while.

1. **Do not read in dim light**

Reading in dim light can cause eye strain but will not damage the eyes. If the eyes feel tired, stop for a while and take a break.

2. **Do not look at a bright light directly.**

Never focus the eyes on the sun directly, as it can damage the eyes.

2.3 Oral Hygiene among Primary School Pupils

Oral hygiene is the practice of keeping the mouth and teeth clean to prevent dental problems, most commonly, dental cavities, gingivitis, and bad breath. There are also oral pathologic conditions in which good oral hygiene is required for healing and regeneration of the oral tissues. These conditions included gingivitis, periodontitis, and dental trauma(Zadik, 2008) such as sub-luxation, (Bayo, 2017) oral cysts, Zadik., Bechor., Shochat,. & Galor,(2011) and following tooth extraction.

Tooth decay is the most common global disease. Over 80% of cavities occur inside pits and fissures on chewing surfaces where brushing cannot reach food left trapped after every meal or snack, and saliva or fluoride have no access to neutralize acid and re-mineralized demineralized teeth, unlike easy-to-reach surfaces, where fewer cavities occur (Lai *et al*,2015).

2.3.1 Tooth Cleaning

Tooth Cleaning includes: Cleaning of Teeth, Removing Plaque, Flossing, Interdental Brushes, Tongue Cleaning, Gum Care and Oral Irrigation (Li *et al*, 2015).Tooth cleaning is the removal of dental plaque and tartar from teeth to prevent cavities, gingivitis, gum disease, and tooth decay. Severe gum disease causes at least one-third of adult tooth loss (Lai, 2014).

Generally, dentists recommend that teeth be cleaned professionally at least twice per year (ADHA, 1998). Professional cleaning includes tooth scaling, tooth polishing, and, if tartar has accumulated, debridement; this is usually followed by a fluoride treatment. This is

done through careful, frequent brushing with a toothbrush, combined with the use of dental floss to prevent accumulation of plaque on the teeth (Adebayo, 2014).

2.3.2 Removing Plaquefrom the Teeth

Plaque is a yellow sticky film that forms on the teeth and gums and can be seen at gum margins of teeth with a food dye. The bacteria in plaque convert carbohydrates in food (such as sugar) into acid that de-mineralizes teeth, eventually causing cavities. Daily brushing and flossing removes plaque and can prevent tartar from forming on the teeth.

Plaque can also cause inflammation of the gum (gingivitis), making it red, tender and can easily bleed when flossing or brushing your teeth. If this is not treated, bones around the teeth can be affected by the various inflammatory factors, eventually leading to bone damage. This condition is called periodontitis, which is mostly seen in the adult population. If not treated, the loss of bone structure may cause teeth to become mobile. The treatment is to remove plaque inside the deep pockets between the tooth surface and the soft tissues using specialized dental equipment. If the treatment is successful, the gum will pull away from the teeth (receding gums) as a result of the cessation of the inflammatory swelling. Eating a balanced diet and limiting snacks can prevent tooth decay and periodontal disease. The Fédération Dentaire Internationale(FDI World Dental Federation) has promoted foods such as raw vegetables, plain yogurt, cheese, or fruit as dentally beneficial—this has been echoed by the American Dentist Association (ADA, 2012).

2.3.3 Flossing ofTeeth

The use of dental floss is an important element of oral hygiene, since it removes plaque and decaying food remaining stuck between the teeth. This food decay and plaque cause

irritation to the gums, allowing the gum tissue to bleed more easily. Acidic foods left on the teeth can also demineralize teeth, eventually causing cavities (Croese, 2014.

Flossing for a proper inter-dental cleaning is recommended at least once per day, preferably before brushing so fluoride toothpaste has better access between teeth to help re-mineralize teeth, prevent (Curtis, 2017),receding gums, gum disease, and cavities on the surfaces between the teeth. It is recommended to use enough floss to enable easy use, usually ten or more inches with three to four inches of taut floss to put between teeth. Floss is then wrapped around the middle finger and/or index finger, and supported with the thumb on each hand. It is then held tightly to make taut, and then gently moved up and down between each tooth. It is important to floss under visible areas by curving the floss around each tooth instead of moving up and down on gums, which are much more sensitive than teeth. However, bleeding gums are normal upon first usage of floss, and will harden with use (Curtis, 2017). One should use an unused section of the floss when moving around different teeth. Removing floss from between teeth requires using the same back-and-forth motion as flossing, but gently bringing the floss up and out of gaps between teeth.

2.3.4 Tongue Cleaning

Cleaning the tongue as part of daily oral hygiene is essential, since it removes the white/yellow bad-breath-generating coating of bacteria, decaying food particles, fungi (such as Candida), and dead cells from the dorsal area of the tongue. Tongue cleaning also removes some of the bacteria species which generate tooth decay and gum problems (Lai, 2014).

2.4 Hand Hygiene among Primary School Pupils

Hand hygiene is defined as hand washing or washing hands and nails with soap and water or using a waterless hand sanitizer. It is central to preventing spread of infectious diseases in home and everyday life settings (Bloomfield*et al*,2017).The celebration of the Global Hand Washing Day on October 15 every year by the United Nations indicates the importance attached to hand hygiene. The hand is important in pupils, adolescent and adult because when not properly taken care of, can serve as a medium of transfer of harmful micro-organisms not just to the individual, but also from one individual to another (Soumya*et al*, 2010).

Improper hand washing is no better than no hand washing at all. It is a common practice, even among the intellectual community, to quickly wash hands without using soap. The reduction in germ load on our hands will not be remarkable by using water alone and thus we should convince first ourselves, then the health workers and the community about the importance of hand hygiene and how correctly to perform it. But when soap is a constraint, we can wash hands for longer time (about 30 seconds), or after toilet visit or touching dirty matter, one can wash his/her hand using ash. Usingash for hand washing will help to increase the friction while rubbing the two hands. In situations where hand washing with soap is not an option (e.g. when in a public place with no access to wash facilities), a waterless hand sanitizer such as an alcohol hand gel can be used. They can also be used in addition to hand washing, to minimize risks when caring for "at risk" groups. To be effective, alcohol hand gels should contain not less than 60%v/v alcohol. Hand sanitizers are not an option in most developing countries; in situations where availability of water is a problem, there are appropriate solutions such as tippy-taps, which use much less water and are cheap to make. In low income communities, mud or ash is sometimes used as an

alternative to soap. World Health Organization recommends hand washing with ash at least if soap is not available e.g. in emergencies, schools without access to soap and other difficult situations like post-emergencies where use of (clean) sand is recommended too (WHO, 2016).

A number of infectious diseases can be spread from one person to another by contaminated hands, particularly gastro-intestinal infections and hepatitis A. proper hand hygiene can help prevent the spread of these organisms. Some form of gastro enteritis can cause serious complications, especially for young pupils, the elderly or those with a weakened immune system. Drying of hands properly is as important of washing them (John and Didier, 2011).

Many diseases/ conditions can be prevented and/or controlled through proper hygiene by:

a. Washing hands with soap and clean running water (if possible):

Before and after preparing food, before and after eating food, after using the toilet, after changing diapers and cleaning pupils, during times of illness, after handling an animal or animal waste, after handling garbage (John and Didier, 2011).

b. Proper care of the hands also entails cutting of the nails.

Cutting of the nails regularly reduces risks of injecting harmful bacteria which may be hidden under the nails, reduces risks of injury to self or individuals in close contact and also improve the general outlook of the individuals. The cuticle protects the integrity of the nails by “guarding” the cell that manufactures keratin which forms the nails. If a cuticle is trimmed and become infected or if a cuticle is trimmed to expose a sensitive area of the nail,

future growth of that nail could be compromised. Many Doctors and Manicurists now advised their client not to cut their cuticle at all (Pearce, 2008).

Proper hand washing Procedures are:

i. Wet your hands with warm water (hot water can dry out your skin).
ii. Apply 1 dose of liquid soap and leather well for 15-20 seconds (or longer if the dirty is ingrained).
iii. Rub hands together rapidly across all surfaces of your hands and wrist to help remove dirt and germs.
iv. Don't forget the back of your hands, your wrists, between your fingers and under your finger nails.
v. Wash your hands for at least 10 seconds.
vi. Rinse well under running water and make sure all traces of soap are removed, as residue may cause irritation.
vii. Pat your hands dry using paper towel (or single use cloth towels). Make sure your hands are thoroughly dry.

Dry any ring you wear, as they can be a source of future contamination if they remain moist. If possible, remove rings and watches before you wash your hands. Hot air driers can be used but, again, you should ensure your hands are thoroughly dry. At home, give each family member their own towel and wash them often (John and Didier, 2011).

Consequence of Poor Hygiene of Fingernails among Primary School Pupils

If the hygiene of fingernails is/are not good it will have the following consequences:

i. Skin disease by way of scratching the skin followed by contamination of the normal skin

ii. Intestinal worms will be harbored in the fingernails and most probably there is a possibility of transfer into the mouth when eating.

iii. Contamination of food during food preparation: The chance of contracting disease this way is remarkable where hands are often used for preparation and feeding.

Control Measures to Prevent the Transmission of Diseases from Hands among Primary School Pupils

1. Keep finger nails always clean
2. Keep finger nails always trimmed or short
3. Use soap for hand washing before and after eating
4. Use soap for hand washing after visiting latrine
5. Use soap for hand washing before any food preparation is carried out.

2.5 Feet Hygiene among Primary School Pupils

The feet is one sure part of the human body that hither to has been neglected by most people through which one can contact disease. Between the toes, sweating of the skin makes a good breeding site for spores of fungus infection called athlete's foot. When cleanliness of the toes is neglected, the bad odor generated has social consequences especially if you are working in an office with poor ventilation (Soumya*et al*, 2010).

In most rural communities of Nigeria, people are used to walk in a bare foot. The people in these communities need to wash their feet frequently than the people who are wearing shoes, because the foot is exposed to the soil and surrounding environment (Soumya*et al*, 2010). If an individual fail to have frequent wash, hookworm and jigger flea can easily enter the feet and cause infections.

Method of Avoiding Foot Disease among Primary School Pupils

In rural village when people cannot afford expensive shoes locally made sandals can be used as effective replacement. The disadvantage of leather shoes that expose the feet for fungal infection is rarely seen in sandal shoes. The under-listed methods will help avoid foot diseases. These are:

a. Regular washing of feet with soap
b. Wearing of clean socks to absorb the sweat if possible
c. Wearing of shoes if possible (Soumya*et al*, 2010).

2.6 Hygiene of the Clothes (laundry) among Primary School Pupils

Laundry hygiene pertains to the practices that prevent or minimize disease and the spreading of disease via soiled clothing and household linens such as towels. Items most likely to be contaminated with pathogens are those that come into direct contact with the body, e.g., underwear, personal towels, facecloths, nappies. Cloths or other fabric items used during food preparation or for cleaning the toilet or cleaning up material such as faeces or vomit are a particular risk (Bloomfield *al*, 2012).

Infection risks from contaminated clothing can increase significantly under certain conditions. Example, in healthcare situations in hospitals, care homes and the domestic

setting where someone has diarrhea, vomiting, or a skin or wound infection. It also increases in circumstances where someone has reduced immunity to infection. Hygiene measures, including laundry hygiene, are an important part of reducing spread of antibiotic resistant strains (Bloomfield *et al*, 2012).

Clothes can be washed and cleaned by water and soap or other local cleaning materials. After washing it has to be sufficiently dried by sunshine and/or wind. Proper place has to be sought for washed clothes to avoid recontamination. Health problems that emanate from clothes that are not hygienic are:

a. Typhus
b. Relapsing fever
c. Bad smell
d. Body itching, ulceration, etc.

To prevent the above problems:

a. Regular washing and changing of clothes especially for pupils since it frequently gets dirty.
b. Frequent washing, outdoor drying and if possible ironing and putting in clean places.
c. Regular washing of night clothes such as bed sheets
d. Regular outdoor airing and washing as required of heavy clothes such as blankets and others.
e. Boiling for at least 10 minutes and outdoor drying of all clothes that are infested with lice.

f. Boiling and steaming of night clothes. The clothes should be immersed while boiling. Care should be taken not to release the steam from the clothes.

g. Delousing clothes with 10% DDT (DDT ("dichlorodiphenyltrichloroethane") is a colorless, crystalline, tasteless and almost odorless organochloride known for its insecticidal properties. DDT has been formulated in almost every conceivable form, including solutions in xylene or petroleum distillates, emulsifiableconcentrates, water-wet table, granules, aerosols, smoke candles and charges for vaporizers and lotions)or 1% Malathion and keeping them for one day at time of epidemic outbreak (*Toxicological Profile: for DDT, DDE, and DDE.*Agency for Toxic Substances and Disease Registry, 2012)

h. Putting infested clothes in a plastic bag and exposing to frequent sunshine till one can see dead louse. This might take 2-3 days or more depending on the amount of the cloth and sunshine available. In most cases white plastic bag is preferred.

i. Report epidemics outbreak (Soumya*et al*, 2010).

2.7 Rest and Sleeping Hygiene

Sleep hygiene is the term used to describe good sleep habits. Considerable research has gone into developing a set of guidelines and tips which are designed to enhance good sleeping, and there is much evidence to suggest that these strategies can provide long-term solutions to sleep difficulties. There are many medications which are used to treat insomnia, but these tend to be only effective in the short-term. Ongoing use of sleeping pills may lead to dependence and interfere with developing good sleep habits independent of medication, thereby prolonging sleep difficulties. Talk to your health professional about what is right for

you, but we recommend good sleep hygiene as an important part of treating insomnia, either with other strategies such as medication or cognitive therapy or alone.

2.8 Importance of Personal Hygiene among School Pupils

Basic hygiene should be taught to pupils at an early age to help establish good habits. Parents can reinforce good hygienic behaviour by creating routines and being good role models. Personal hygiene practices include bathing, washing your hands, keeping your hair clean and brushing your teeth. Your personal, social and professional worlds are all affected by hygiene habits (Oyibo, 2012).

a. **Disease Prevention:**Wash your hands often to prevent the spread of disease. Each time you use the restroom, wash your hands before leaving the area to remove germs. Wash your hands before you handle food, eat or take out contact lenses.
b. **Nice Smile:**Most people want to keep their teeth and have attractive smiles. This requires frequent brushing and good dental habits. If you fail to brush your teeth, they are more likely to become discoloured, get cavities and possibly fall out. According to the American Academy of Periodontology, regular brushing and flossing can significantly decrease the risk of gum disease, which can cause bad breath or even worse—tooth loose.
c. **Lower Health Care Costs:**Since it curbs the spread of disease, good hygiene results in lower health care costs. Brushing your teeth and keeping clean could eliminate unnecessary visits to your dentist and doctor, saving you money.
d. **Self-Esteem:**When you're clean, you'll feel much better about yourself than when you're dirty. People will react more positively to you, which will also help raise your self-esteem.

e. **Social Acceptance:**Good hygiene is critical for social acceptance, because most people don't want to be around others who are dirty or smelly. Pupils who practice good hygiene eliminate one major reason for other kids to make fun of or bully them. It's sad to see someone on the playground getting taunted for smelling bad or having dirty hair.

f. **Professional Acceptance:**Most employers prefer employees who are clean and well-groomed. Good hygiene can make the difference in being hired and getting promotions.

g. **Being a Role Model:**Parents should set an example for their pupils by practicing good hygiene. Pupils are more likely to do what you do than what you say.

2.9 Knowledge of Personal Hygiene among School Pupils

Health knowledge is the understanding of scientific facts on personal hygiene, environmental and communicable diseases. Croese, J., Loukas, A., Opdebeeck, J., Fairley, S. & Prociv, P, (2014) opinion that the dimension of knowledge deals with peoples' basic understanding of what constitute hygiene or unhygienic behaviour, environmental cleanliness, wholesome or good quality water/food as well as the relationship between health and sanitation, hygiene or cleanliness. In support of the above, Everitt, Little andSmith, (2016), expressed that knowledge implies an understanding of specific facts, terminology, conventions, ways and means of dealing with specifics, trends and sequences, classification and categories, methodology, criteria, universals and abstracts, principles and generalizations and finally theories and structures.

Ehrenkranz and Alfonso (2014), lamented that the personal hygiene for children must be allotted according to their age group. Accordingly adolescents can start to learn hygiene basics as toddlers. The hygiene promotion should be done on a wider scale which is a holistic approach that includes raising awareness on good hygiene behaviour, including proper management of menstruation for adolescent girls. Oyibo(2012) stressed that personal cleanliness is an essential pre-requisite of membership in human society. Apart from this, regular cleansing of skin is necessary to preserve it in good health and to prevent parasitic infestation. Bloomfield, Exner, Fara, Nath, Scott and Vander (2017) explained the knowledge of personal hygiene is the first step to healthy living, children begin learning hygiene techniques and these habits should be continued throughout their lives. Personal hygiene can also make one a healthier person through regular bathing and hand washing which will prevent many illness by killing the unseen germs found on the body. It also prevent body odour, athletes foot and other skin conditions that are caused from lack of washing useable clothes such as handkerchief, towels pillows and bed sheet. Bloomfield et al (2009) expressed that the knowledge of personal hygiene will make one to understand that good personal hygiene will prevent bad breath and tooth decay, brushing and flossing of teeth three times after taking meal a day and before going to bed at night will keep breath smelling clean.

Our parents even before our school days have taught us the importance of hygiene at a household level and we are trained to behave in a certain manner so that hygiene is maintained depending on the level of understanding of the community (Tadesse, 2013). How do we ensure a change in hygienic behaviour in a given community has occurred in the direction desirable to promote healthy life style? The recognition of existing poor hygienic

behaviour is the first step in developing hygiene education aimed at reducing sanitation related diseases in a particular community. Hygiene education should aim at encouraging the target community to be interested in having cleaner home, surrounding, neighborhood and environment through a greater understanding of why such cleanliness is necessary. It is only when such understanding is growing those sanitation efforts can succeed in making a difference and become sustainable (Tadesse, 2013).

Knowledge becomes meaningful and useful when learner has comprehended and applied the acquired knowledge and skills appropriately. According to Bloomfield et al (2012), knowledge connotes conceptualization which comes about as a result of learning via cognitive, effective and psycho-motor domains, which is much more than just acquisition of fact. Therefore, knowledge can be justified as the most important outcome of learning; hence, with increase information, there is a development of one`s acquaintance with reality. The reality here could be realized through what is known by convention or definition, or as finding due to result of inquiry, or as the more fruitful ways of attacking problems, or as means of organizing procedure for advancement.

Therefore, similar studies from developing countries show that there was a wide gap between knowledge regarding most of the indicators of personal hygiene. This finding corroborates with the study done in Philippines (2016), as well as with a study done in Nigeria among school pupils aged 6-14 years by Oyibo (2012). It is quite expected that a lesser percentage of pupils having correct knowledge will be able to translate their knowledge into practice. According to Vivas A, Gelaye B, Aboset N, Kumie A, Berhane Y, Williams MA,(2010), who carried out a research onKnowledge, attitude and practice of personal hygiene among school children inAngolela, Ethiopia observed that about 52% of

school children have adequate knowledge of personal hygiene. This knowledge is necessary for the practice of proper hygiene in the school environment. Only 14.8% of the students washed hands after defecation the day prior to the interview. We also found that out of the personal hygiene characteristics assessed, students having proper knowledge of hygiene were more likely to have clean clothes.

Mohammed*et al*,(2016) revealed that knowledge and practices of personal hygiene among primary school students in Sharjah, United Arab Emirate are satisfactory. Vivas*et al*, (2010), states that Schools are the right place to initiate the practice of personal hygiene early in childhood. In addition, the study also observed that around half (46%) (N=197) of the students mentioned their teachers as a source of information regarding personal hygiene. These observations clearly demonstrated that the schools and its teachers can play a vital role in imparting the knowledge and practices of personal hygiene very early in the Childs' life. It is well known that children are more receptive to learning and are very likely to adopt healthy behaviours at a younger age. Furthermore, they have also demonstrated that they can also be agents of change by spreading what they have learned in school to their family and community at large. Vivas, (2010) and Sarkar(2013)have observed that knowledge and practices of hygiene was well correlated with students wearing clean cloths and presentable appearance.

Oyibo (2012) revealed that the average knowledge and practice scores related to basic personal hygiene recorded among the school children studied were 74.6 % and 54.9 % respectively.This high level of knowledge related to basic personal hygiene exhibited by the children was not totally reflective of their practices of basic personal hygiene; as 29.4 %, 37.0 % and 46.3 % of them washed their hands after using the toilet, wash their uniform

daily and wash their hands after playing respectively. The result of physical inspection of the children revealed that 17.9 %, 45.2 % and 57.4 % of them had dirty hair, dirty uniform and dirty nails respectively. This study have shown that although a sizeable number of the children studied had adequate knowledge related to basic personal hygiene, their practices related to same was poor among primary school children in Abraka, Delta State, Nigeria.

Knowledge of the parents even before our school days have taught us the importance of hygiene at a household level and we all are trained to behave in a certain manner so that hygiene is maintained depending on the level of understanding of the community (Tadesse, 2013). How do we ensure a change in hygienic behaviour in a given community has occurred in the direction desirable to promote healthy life style? The recognition of existing poor hygienic behaviour is the first step in developing hygiene education aimed at reducing sanitation related diseases in a particular community. Hygiene education should aim at encouraging the target community to be interested in having cleaner home, surrounding, neighborhood and environment through a greater understanding of why such cleanliness is necessary. It is only when such understanding is growing those sanitation efforts can succeed in making a difference and become sustainable (Tadesse, 2013).

2.10 Attitude towards Personal Hygiene among School Pupils

Lutans, (2017) stated that attitude are complex are cognitive processes which consist of three component: the emotional, information and behavioural. The informational component consists of the belief and information the individual has about the object. The behavioural component consists of a person`s tendencies to behave in a particular way towards an object. It is further stated that attitudes tend to persist unless something is done to

change them. Attitude can also fall anywhere along a continuum from very favorable to unfavorable. Finally, attitudes can be directed towards some object about which a person has feelings and beliefs (Lutans, 2017). The health belief model (Payne and Walker, 2016) posits that individuals must perceive themselves to be at risk of the health before they will take actions to reduce risk behaviours.

Furthermore, attitude refers to ones feeling, thoughts, and predisposition to behave in some particular manner towards some aspects of one's environment (Muherjee, 2012).Individual'sbehaviour can be observed and measured. However, from such observation it would be difficult to trace the underlying factors of his/her feelings, why he/she behave in that manner in the manner. Many factors force individual to behave in a manner of their choice. For example, if the wife of an informed but wretched person falls ill and needs surgery worth one million naira, and there are no avenues to raise such money, the man could be compelled to resort to traditional medicine. It would be wrong to say that such a person had positive attitude towards traditional medicine. Attitude are best expressed when individual make statement about their feeling or opinions about certain object, issues or things. For example, "I like sweeping my room every day''. This statement contains some element of feeling and opinion, which denote the attitude of individual concerned (Musa, 2014).

One`s feeling are generated from one`s cognition or knowledge obtained directly or indirectly about things or object about which the feelings are centered without which there would not be feeling or opinion (Maruthi, 2008). According to Albanese, G., Venturi, C. & Galbiati, G., (2015) attitude is mental or neural state of readiness, organized through

experience, exerting a directive and dynamic influence upon the individual`s response to all object or situations with which it is related.

From the above definition, attitude must first be organized through experience because from it, individual acquire cognition/knowledge, and feelings/affection about things, or situation of their environment, while "readiness'' implies that it is kind of "predisposition'' to respond (Operational/behavioural component).In the context of social psychology, attitude is a predisposition to classify objects and event and to react to them with some degree of evaluative consistence, Attitude are logically hypothetical construct i.e. they are inferred but not objectively observable. They are manifested in conscious experience, verbal reports, gross behaviours, and physiological symptoms; the concept of attitude arises from attempts to account for observed regularities in behaviour of individual person. The quality of one`s attitude is judge from the observable, evaluate responses one tends to make.

However, attitude of student towards personal hygiene also improved significantly after education. The practice of personal hygiene also revealed improvement. Falsey (2017) also found that, with the implementation of the school health education programme with the emphasis on improvement of personal hygiene, the proportion of children with clean and cut nails, clean hands and hair increased significantly. Thus, the ultimate goal of health education intervention is to positively influence health status and bring about behavioural changes regarding health. Previous hand hygiene studies have indicated that children with proper hand washing practices are less likely to report gastrointestinal and respiratory symptoms. Schools should provide for hygiene education to kindergarten and early grade school children to supplement the training provided by parents and guardians, to ensure that

all children learn at an appropriate age how to protect themselves and others from preventable exposure to illness and other hygienic hazards. Hand washing with soap has been reported to reduce diarrhea morbidity by 44% and respiratory infection by 23% (Oyibo, 2012).

Mohammed*et al***,** (2016), observed that personal hygiene is an isolated behaviourinstead it varies from person to person according to different factors. Intervention programmes, raising the awareness and importance of personal hygiene among school children in Sharjah, United Arab Emirate through coordinated education measure by parents, teachers and Media will be beneficial to impart hygienic behaviour early in life.

2.11 Practice of Personal Hygiene among Primary School Pupils

Practice is an action or behaviour that an individual engages in and is normally induced by an attitude either consciously or unconsciously. It can also be referred to as behaviour. Specifically referring to behaviour a person engages in. The terms, practice and behaviour, are used synonymously in this study. Behaviour is mostly learned and this learned action is a reaction to social or physical environment stimulus and is goal-oriented. It is an overt manifested or inner feelings and though which form attitude and is therefore an indirect mechanism of expressing attitude (Bubenik, 2013). The type of behaviour an individual will engage in can be predicted from type of attitude formed. For instance, a positive hygiene attitude based on positive hygiene values will lead to engaging in beneficial hygiene behaviours However, for this to happen, enabling factors such as time, self-esteem and availability and accessibility of need technical power needs to be present (Bubenik, 2013). These make it possible for an individual to convert an attitude into behaviour.

From the earlier discussion on knowledge and attitude and how they are intertwined,it can be comfortably said that behaviour is a product of knowledge and attitude. Given this scenario, Bloomfield (2012) have summarized the relationship among these four statements:

a. “There are no option without knowledge’’
b. “knowledge is the basic and essential element of conceptualization’’
c. “conceptualization is the heart of attitude formation’’
d. Attitude direct behaviour

According to Helen, Latha, Cecilia and Nicola (2017) practices, behaviour or habit are interchangeable concepts which mean an act acquired by experience and performed regularly and automatically. Such action include mannerism, conversational gestures, satisfying psychological cravings like smoking of overeating, characteristic reading preference, such as a regular diet of horror novels. Educations, especially psychologist are interested in habit because of their function as a basic element of learning and as problem to be treated when they prove descriptive to a person`s well-being. Psychoanalysts consider practices as expression of erotic and aggressive impulses. Repressed, these impulses find an outlet through the counter-productive, repetitive behaviour that comprised habits.

Practice is an action or behaviour that an individual engages in and normally induced by an attitude either conscious or unconsciously. It can also be referred to as behaviour that a person engages in (Griffin, 2014). From the earlier discussion on knowledge and attitude and how they are intertwined, it can be comfortable said that behaviour is a product of knowledge and attitude (William, 2015).

Vivas*et al.*, (2010),assessed the knowledge ad practices of hygiene among school children in Angolela, Ethiopia. He observed that about 52% of school children have proper knowledge of personal hygiene. This knowledge is necessary for the practice of proper hygiene in the school environment. He also observed that students having proper knowledge of personal hygiene were more likely to have clean clothes. He states that one reason that can influence hygiene practices among school children is the low level of parental literacy.Mohammed*et al*,(2016),observed that local hot, dry ad dusty desert climate ad adequate water availability might have influencein ranking showering or bathingthe most importanthygiene practice among the studentsin Sharjah, United Arab Emirate.

Vivas*et al*, (2010), reported that bathing and washing of hair are the least common practices of personalhygiene and the reason is due to inadequate water availability.Inge (2017), pointed out that adequate hand hygiene practice is great deterrent to the spread of gastrointestinal and respiratory tract infections especially inchildren. This study shows that washing of hands using soap can prevent these infections and inturnreduces the absenteeismin the school. Furthermore, He states that hand sanitizer usage is also being encouraged as a practice of hand hygieneamong the primary school children.Sarkar (2013), assessed the knowledge and practice of personal hygiene among the primary school children living in a slum area of Chetla, Kolkata, India. He found that the female students were more knowledgeable than the male students regarding the maintenance of personal hygiene. There was a wide gap between practice and knowledge of personal hygiene among the primary school children living in the slum area. Even, misconceptions do exist on certain indicators of personal hygiene among the students. Statistically significant association was observed

between practices of personal hygiene among the primary school children and the literacy status of their mother

Hygiene practices are preventive measures to reduce the incidence and spreading of disease and are parts of good personal grooming**.** Hygiene as a system included not only personal hygiene related to food, clothing and exercise but also sciences such as engineering, bacteriology, public sanitation and waterworks (Oyibo, 2012)**.** School teachers are considered the major source of information for their pupils and would appear to be suitable as health educators. School teachers are expected to be role models so that pupils can emulate and adopt their behaviour and attitudes.Meaningful knowledge positively influences attitude formation because of the recipient`s comprehension of health facts, it is positive attitude formation which leads to positive behaviour. On the contrary, superficial knowledge leads to misconception of facts and development of negative attitude. Negative attitudes result practicing harmful behaviour (Kalua, 2011).

2.12 Diseases and Conditions that may arise from Inadequate Personal Hygiene among Primary School Pupils

Having outlined what personal hygiene is and some of the perspective from which it might be viewed, paying special attention to primary school pupils and adolescents, it is now imperative to briefly outline consequences of improper hygiene. Schools are more than places of knowledge sharing: they often become Centre of diseases transmission. Several studies highlight the potential for inadequate hand washing and sanitation facilities in schools to contribute to the spread of gastrointestinal infection among pupils and adult.

From diarrhea diseases, Hepatitis A to intestinal worms, all these diseases have detrimental effects on cognitive and educational achievement (Soumya*et al.*,2010).

Head Lice

Head lice are small, wingless, blood-sucking insects. They live in the hair on your head and feed off the blood from your scalp. A louse (a single adult) is about the size of a sesame seed. A nit (louse egg) is about the size of a flake of dandruffPreschool and elementary school pupils have the highest risk of getting head lice. They tend to play close together and share items which touch their heads. There is also an increased risk of head lice for family members of school aged pupils. People who work in a daycare, preschool, or elementary school share this risk.

Causes of Head Lice

Head lice are contagious hence, can be transferred by brushes, combs, barrettes, headbands, headphones, and hats. They can also live for a time on upholstered furniture, bedding, towels, or clothing. Other causes include:

a. touching your head to an infected person's head
b. sharing the personal items of someone with head lice
c. using a fabric item after an infected person

Dandruff

Dandruff is a harmless, chronic condition that occurs when the scalp becomes dry or greasy and produces white flakes of dead skin that appear in the hair or on the shoulders. People most often think of dandruff as anything that produces a flaky scalp. Dandruff usually starts between the ages of 10 and 20 and affects up to 40% of people over the age of 30.

Causes of Dandruff

Skin cells are formed continuously on the scalp, so the shedding of dead skin cells is a normal process. With dandruff, however, skin cells are shed at a faster rate than normal. Oil from the scalp causes the skin cells to clump together and appear as white flakes.

a. Dandruff can be caused by a number of things, including dry skin; sensitivity to hair products; and skin conditions such as psoriasis, seborrheic dermatitis, or eczema.
b. The overgrowth of yeast can also cause dandruff. This overgrowth can be caused by stress, hormones, too much oil on the scalp, or problems with the immune system.

Prevention of Dandruff

To help keep dandruff under control, shampoo frequently, reduce your stress levels, try reducing your use of hair products (e.g., gels and sprays), and eat a healthy diet.

Trachoma

Trachoma (Greek: τράχωμα, 'roughness') also called granular conjunctivitis, Egyptian ophthalmia, and blinding trachoma is an infectious disease caused by the bacterium *Chlamydia trachomatis*. The infection causes a roughening of the inner surface of the eyelids. This roughening can lead to pain in the eyes, breakdown of the outer surface or cornea of the eyes, and possibly to blindness(WHO, 2013).

Most commonly pupils with active trachoma will not present with any symptoms as the low grade irritation and ocular discharge is just accepted as normal. However, further symptoms may include:

a. Eye discharge
b. Swollen eyelids
c. Trichiasis (turned-in eyelashes)

d. Swelling of lymph nodes in front of the ears

e. Sensitivity to bright lights

f. Increased heart rate

g. Further ear, nose and throat complications.

The major complication or the most important one is corneal ulcer occurring due to rubbing by concentrations, or trichiasis with superimposed bacterial infection.

Causes of Trachoma among Primary School Pupils

The bacteria that cause the disease can be spread by both direct and indirect contact with an affected person's eyes or nose. Indirect contact includes through clothing or flies that have come into contact with an affected person's eyes or nose. Pupils spread the disease more often than adults. Many infections are usually needed over a period of years before scarring of the eyelid becomes so great that the eyelashes begin to rub against the eye. Poor sanitation, crowded living conditions, and not enough clean water and toilets also increase the spread of trachoma (WHO,2013).

Prevention of Trachoma among School Pupils

Although trachoma was eliminated from much of the developed world in the last century, this disease persists in many parts of the developing world particularly in communities without adequate access to water and sanitation. The under-listed measures will prevent trachoma:

a. Environmental Measures

Environmental improvement: Modifications in water use, fly control, latrine use, health education, and proximity to domesticated animals have all been proposed to reduce transmission of *C. trachomatis*. These changes pose numerous challenges for

implementation. It seems likely that these environmental changes ultimately impact on the transmission of ocular infection by means of lack of facial cleanliness(WHO, 2013).

b. Antibiotics

Antibiotic therapy: WHO Guidelines recommend that a region should receive community-based, mass antibiotic treatment when the prevalence of active trachoma among one to nine year-old pupils is greater than 10 percent (WHO, 2013). Subsequent annual treatment should be administered for three years, at which time the prevalence should be reassessed. Annual treatment should continue until the prevalence drops below five percent. At lower prevalence, antibiotic treatment should be family-based.

Tooth Decay and Cavities

Bad Breath

Bad breath, also known as halitosis, is breath that has an unpleasant odor. This odor can strike periodically or be persistent, depending on the cause.In many people, the millions of bacteria that live in the mouth (particularly on the back of the tongue) are the primary causes of bad breath. The mouth's warm, moist conditions make an ideal environment for these bacteria to grow. Most bad breath is caused by something in the mouth.

Some types of bad breath, such as "morning mouth," are considered to be fairly normal, and they usually are not health concerns. The "morning mouth" type of bad breath occurs because the saliva that regularly washes away decaying food and odors during the daytime diminishes at night while you sleep. Your mouth becomes dry, and dead cells adhere to your tongue and to the inside of your cheeks. Bacteria use these cells for food and expel compounds that have a foul odor (Helen, 2017).

In addition, bad breath can be caused by the following:

a. **Poor dental hygiene** — Infrequent or improper brushing and flossing can leave food particles to decay inside the mouth.
b. **Infections in the mouth** — Periodontal (gum) disease
c. **Respiratory tract infections** — Throat infections, sinus infections, lung infections
d. **External agents** — Garlic, onions, coffee, cigarette smoking, chewing tobacco
e. **Dry mouth** (xerostomia) — this can be caused by salivary gland problems, medications or by "mouth breathing."
f. **Systemic illnesses** — Diabetes, liver disease, kidney disease, lung disease, sinus disease, reflux disease and others
g. **Psychiatric illness** — some people may perceive that they have bad breath, but it is not noticed by oral-health-care professionals or others. This is referred to as "pseudohalitosis."

Prevention of Bad Breath

a) Bad breath caused by dental problems can be prevented easily. Daily maintenance calls for brushing your teeth, tongue and gums after meals, flossing, and rinsing with mouthwashes approved by the American Dental Association (ADA).
b) Regular visits to the dentist (at least twice a year) should be made for dental examinations and for professional teeth and gum cleaning.
c) Bad breath also can be combated by drinking plenty of water every day to encourage saliva production. An occasional swish of the mouth with water can loosen food particles.

d) Other products that keep breath fresh and prevent plaque from forming include sugar-free gum, sugarlesslozenges, raw carrots and celery.

Gastrointestinal System (Via Hands)

a. Infectious Diarrhea (Acute Gastroenteritis, Amoebiasis)

Gastroenteritis is defined as vomiting or diarrhea due to infection of the small or large bowel. The changes in the small bowel are typically non-inflammatory, while the ones in the large bowel are inflammatory. The number of pathogens required to cause an infection varies from as few as one (for *Cryptosporidium*) to as many as 10:8 (for *Vibrio cholerae*) (Tintinalli, 2010).

Gastroenteritis or infectious diarrhea is a medical condition from inflammation (‘’-itis’’) of the gastrointestinal tract that involves both the stomach ("gastro"-) and the small intestine("entero"-). It causes some combination of diarrhea, vomiting, and abdominal pain and cramping(Tintinalli, 2010). Dehydration may occur as a result. Gastroenteritis has been referred to as gastro, stomach bug, and stomach virus. Although unrelated to influenza, it has also been called stomach flu and gastric flu.

Transmission of Infectious Diarrhea (Acute Gastroenteritis, Amoebiasis)

Transmission may occur via consumption of contaminated water, or when people share personal objects. In places with wet and dry seasons, water quality typically worsens during the wet season, and this correlates with the time of outbreaks (Galanis, 2017). In areas of the world with four seasons, infections are more common in the winter. Bottle of babies with improperly sanitized bottles is a significant cause on a global scale. Transmission rates are also related to poor hygiene, especially among pupils, in crowded

households, and in those with pre-existing poor nutritional status. After developing tolerance, adults may carry certain organisms without exhibiting signs or symptoms, and thus act as natural reservoirs of contagion. While some agents (such as Shigella) only occur in primates, others may occur in a wide variety of animals (such as Giardia)(Tintinalli, 2010).

Prevention of Infectious Diarrhea (Acute Gastroenteritis, Amoebiasis)

1. A supply of easily accessible uncontaminated water and good sanitation practices are important for reducing rates of infection and clinically significant gastroenteritis.
2. Personal measures (such as hand washing) have been found to decrease incidence and prevalence rates of gastroenteritis in both the developing and developed world by as much as 30%.Alcohol-based gels may also be effective.
3. Breastfeeding is important, especially in places with poor hygiene, as is improvement of hygiene generally. Breast milk reduces both the frequency of infections and their duration.
4. Avoiding contaminated food or drink should also be effective.
5. Vaccination: Due to both its effectiveness and safety, in 2017 the World Health Organization recommended that the rotavirus vaccine be offered to all pupils globally. Two commercial rotavirus vaccines exist and several more are in development. In Africa and Asia these vaccines reduced severe disease among infant and countries that have put in place national immunization programs have seen a decline in the rates and severity of disease. This vaccine may also prevent illness in non-vaccinated pupils by reducing the number of circulating infections. Since 2015, the implementation of a rotavirus vaccination program in the United States has

substantially decreased the number of cases of diarrhea by as much as 80 percent. The first dose of vaccine should be given to infants between 6 and 15 weeks of age. The oral cholera vaccine has been found to be 50–60% effective over 2 years (WHO, 2017).

Skin Diseases

Diseases of the skin include skin infections, skin neoplasms (including skin cancer) and a whole lot which are briefly discussed below (Marks and Miller, 2016).

According to Sherrow (2016), skin diseases and conditions include:

i. **Rash**: Nearly any change in the skin's appearance can be called a rash. Most rashes are from simple skin irritation; others results from medical conditions.

ii. **Dermatitis**: A general term for inflammation of the skin. Atopic dermatitis (a typeof eczema) is the most common form.

iii. **Eczema**: Skin inflammation (dermatitis) causing an itchy rash. Most often, it's due to an overactive immune system.

iv. **Psoriasis**: An autoimmune condition that can cause a variety of skin rashes. Silver, scaly plaques on the skin are the most common form.

v. **Dandruff**: A scaly condition of the scalp may be caused by seborrheic dermatitis, psoriasis, or eczema

vi. **Cellulitis**: Inflammation of the dermis and subcutaneous tissues, usually due to an infection. A red, warm, often painful skin rash generally results.

vii. **Skin abscess (boil or furuncle)**: A localized skin infection creates a collection of pus under the skin. Some abscesses must be opened and drainage by a doctor in order to be cured.

viii. **Rosacea**: A chronic skin condition causing a red rash on the face. Rosacea may look like acne, and is poorly understood.

ix. **Warts:** A virus infects the skin and causes the skin to grow excessively, creating a wart. Warts may be treated at home with chemicals, duct tape, or freezing, or removed by a physician.

x. **Melanoma**: The most dangerous type of skin cancer, melanoma results from sun damage and other causes. A skin biopsy can identify melanoma.

xi. **Basal cell carcinoma**: The most common type of skin cancer. Basal cell carcinoma is less dangerous than melanoma because it grows and spread more slowly.

xii. **Seborrheic keratosis**: A benign, often itchy growth that appears like a "stuck- on" wart. Seborrheickeratoses may be removed by a physician, if bothersome.

xiii. **Actinic keratosis**: A crusty or scaly bump that forms on sun-exposed skin. Actinic keratosis can sometimes progress to cancer.

xiv. **Squamous cell carcinoma**: A common form of skin cancer, squamous cell carcinoma may begin as an ulcer that won't heal, or an abnormal growth, it usually develops in sun-exposed areas.

xv. **Herpes**: The herpes viruses HSV-1 and HSV-2 can cause periodic blisters or skin irritation around the lips or the genitals.

xvi. **Hives**: Raised, red, itchy patches on the skin that arise suddenly. Hives usually result from an allergic reaction.

xvii. **Tineaversicolor**: A benign fungal skin infection creates pale areas of lowpigmentation on the skin.

xviii. **Viral exantham**: Many viral infections can cause a red rash affecting large areas of the skin. This is especially common in pupils.

xix. **Shingles (herpes zoster**): Caused by the chicken pox virus, shingles is a painful rash on one side of the body. A new adult vaccine can prevent shingles in most people.

xx. **Scabies**: Tiny mites that burrow into the skin cause scabies. An intensely itchy rash in the webs of fingers, wrists, elbows, and buttocks is typical of scabies.

xxi. **Ringworm**: A fungal skin infection (also called tinea). The characteristics rings it creates are not due to worms.

xxii. **Acne**: Acne is the most common skin condition that affects over 85% of people at some time in life. It is responsible for spots in most people (Marks and Miller, 2016).

Prevention of skin diseases

According to Marks and Miller (2016), skin diseases can be prevented by one or more of the following:

1. **Bathing:** bathing is essential to personal hygiene; it can lead to gradual removal of natural body oils. Bathing once a day is good enough to maintain hygiene unless you live in a hot and humid place, in which case bathe twice a day. Avoid using hot water, instead use warm water and limit your shower/bath time to 15 minutes. Choose mild soaps and add bath oils to your bath for moisturizing purposes. Avoid using antibacterial or antimicrobial soap as they decrease the skin's acidity levels.

2. **Moisturizing:** Apply a cream or a moisturizer after you step out of the shower or bath as they help in sealing the moisture in your skin. From drier skins, use heavier water-in-oil moisturizers.
3. **Sun protection:** Protect your skin from sun's harmful rays with a sunscreen lotion. Overexposure to the sun can lead to skin cancer.
4. **Dieting:** Your diet should be rich in fruits, whole grains and vegetables. A balanced diet will contain adequate amounts of mineral, vitamins and proteins to keep the skin healthy. Drink plenty of water to keep your skin hydrated.
5. **Exercising:** Exercise, even if it is just brisk walking for 30 minutes a day. It will improve your blood circulation, which in turn gives your skin that healthy skin tone and colour.

Urinogenital Tract Infection among School Pupils

Infections which are associated with the urinary and genital tracts could occur due to inadequate or bad personal hygiene practices, some of them include: Schistosomiasis, Jock itch or groin ring worm; is a fungal infection (caused by certain fungi and yeasts) that usually occurs in warm weather. It is caused by wearing tight clothes that are not well ventilated. The symptoms include redness, blisters, itchiness and pain of the groin and upper, inner thigh area. Yeast infection, body odor, toxic shock syndrome (Marks and Miller, 2016).

Respiratory Tract Infections among School pupils

Respiratory tract infections affect the nose, throat, and airways and may be caused by any of several different viruses.

Pupils develop on average six viral respiratory tract infections each year. Viral respiratory tract infections include the common cold and influenza. Doctors often refer to these as upper respiratory infections (URIs), because they cause symptoms mainly in the nose and throat.

a. Common respiratory tract infections include the common cold and influenza.
b. Typical symptoms include nasal congestion, a runny nose, scratchy throat, cough, and irritability.
c. The diagnosis is based on symptoms.
d. Good hygiene is the best way to prevent these infections, and routine vaccination can prevent influenza.
e. Treatment aims to relieve symptoms.

Transmission of Respiratory Tract Infections among School Pupils

Most often, viral respiratory tract infections spread when pupils' hands come into contact with nasal secretions from an infected person. These secretions contain viruses. When the pupils touch their mouth, nose, or eyes, the viruses gain entry and produce a new infection. Less often, infections spread when pupils breathe air containing droplets that were coughed or sneezed out by an infected person.

Prevention and Treatment/management of Respiratory Tract Infections among School Pupils

Antibiotics are not necessary to treat viral respiratory tract infections. Pupils with respiratory tract infections need additional rest and should maintain normal fluid intake (Natze, 2017)

a. The best preventive measure is practicing good hygiene. An ill child and the people in the household should wash their hands frequently.
b. In general, the more intimate physical contact (such as hugging, snuggling, or bed sharing) that takes place with an ill child, the greater the risk of spreading the infection to other family members.
c. Acetaminophenornonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, can be given for fever and aches.
d. Influenza is the only viral respiratory infection preventable by vaccination. All pupils aged 6 to 59 months should receive a yearly vaccination, as should older pupils with certain disorders. Such disorders include heart or lung disease (including cystic fibrosis and asthma), diabetes, kidney failure, and sickle cell disease. Additionally, pupils whose immune system is compromised (including pupils with human immunodeficiency virus [HIV] infection and those undergoing chemotherapy) should receive the vaccine.

2.13 Empirical Studies

Adegboyega,(2010) assessed knowledge, Attitudes, and Practices (KAP) of Hygiene among School Children in Osun State, Nigeria. Poor hygiene practices and inadequate sanitary conditions play major roles in the increased burden of communicable diseases within developing countries. The study evaluate the knowledge, attitudes, and practices (KAP) of hygiene among rural school children in Osun State and assessed the extent to which proper knowledge of hygiene was associated with personal hygiene characteristics. This cross-sectional study comprised of 669 students who were interviewed by trained staff.

Participants were in grades 1-6 at Osogbo Primary School, located in rural Osun State. Data consist of hygiene and hand washing practices, knowledge about sanitation, personal hygiene characteristics, and presence of gastrointestinal parasitic infection. Thefindings of the study underscore the need for more hand washing and hygiene education in schools; and provide objective evidence that may guide the development of comprehensive health and hygiene intervention programs in rural Osun State schools. Successful implementation of the findings is likely to substantially attenuate transmissible disease burden borne by school children in rural settings.

Oyibo (2012) assessed Knowledge and Practices of Basic Personal Hygiene among School Children aged 6-14 years inAbraka, Delta State, Nigeria. The study covers an area of 21.2 square kilometer and is located on longitude 50 45' N and 60 15' E of the meridian. It is in the tropical rain forest area of Nigeria and comprises of nine communities namely Otororho, Uhruoka, Ekrejeka, Oria, Ajalomi, Erho, Ugono, Urhovie and Umeghe; with River Ethiope running through. The official language of the people is Urhobo and their major occupation is farming. A minimum sample size of 384 was obtained using the Fischer's formula for population above ten thousand (Araoye, 2013).

Although the computed minimum sample size was 384, a multi-stage sampling technique was however used to select a total of 476 children who gave assent for the study as follows: In the first stage, ten public primary schools were selected from the list of twenty-one primary schools in Abraka by simple random sampling technique. In the second stage, making using the class register, a stratified simple random technique (proportionate sampling) was used to select children from each class level in the ten selected schools. The study instrument was a pre-tested structured interviewer administered questionnaire which

elicited information on the socio-demographic characteristics of the children and assessed their knowledge and practices related to basic personal hygiene. Data collected was entered into the computer using the SPSS (version 15.0) software. A simple descriptive analysis was carried out to give a general overview of the study population. This was followed by bivariate analysis. The level of significance was set at $P< 0.05$. Ethical approval for this study was obtained from the Health Ethics and Research Committee of the Delta State University Teaching Hospital, Oghara, Delta State. Informed consent was also obtained from the Local Government Education Department, the School Authorities and Parent-Teachers Associations of the ten Primary Schools that were selected.

The average knowledge and practice scores related to Basic Personal Hygiene recorded among the School Children studied were 74.6 % and 54.9 % respectively. This high level of knowledge related to basic personal hygiene exhibited by the children was not totally reflective of their practices of basic personal hygiene; as 29.4 %, 37.0 % and 46.3 % of them washed their hands after using the toilet, wash their uniform daily and wash their hands after playing respectively. The result of physical inspection of the children revealed that 17.9 %, 45.2 % and 57.4 % of them had dirty hair, dirty uniform and dirty nails respectively.The study revealed that although a sizeable number of the children studied had adequate knowledge related to basic personal hygiene, their practices related to same was poor.

Emeka, (2016) assessed Knowledge and Practice of Personal Hygiene among Primary School Students in Imo State. Proper knowledge and practices of personal hygiene plays critical role in avoiding communicable diseases and benefit the primary school children to enjoy healthy and productive school life. The present study evaluated the

knowledge and practices related to personal hygiene among primary school children in Imo State. This cross-sectional study involving 428 primary school children was conducted in Owerri. Out of 428 students, 155 were from grade 1 (27%), 164 from grade 3 (38%) and 149 from grade 5 (35%). The mean age for students was 8.61 years (SD=1.91). The ability to define personal hygiene was significantly higher among girls (95%) (N=194) as compared to boys (82%) (N= 183). Parents and teachers were the most common source of knowledge providers about personal hygiene to the participants. With the existing knowledge and practices related to personal hygiene among the students, parents and teachers can play positive and significant role to improve it further. The Study used SPSS (21) to enter and analyze the datausing Chi-Square and ANOVA statistical test.

Sarkar (2013) assessed Personal hygiene among Primary School Children living in a slum of Kolkata, India.For children, maintenance of personal hygiene helps to improve the quality of life and longevity. This is of particular importance in a slum community with compromised living situation. This study was undertaken to find out the knowledge and practice of personal hygiene among the primary school children living in a slum area, to identify any misconception among them regarding the maintenance of personal hygiene, to find out their morbidity pattern, and also to elicit the relationship between practice of personal hygiene among the children and the literacy status of their mother. A cross-sectional observational study was conducted among 104 primary school children of a primary school situated in the slum area of Chetla, Kolkata, India with the help of a predesigned, pre-tested and structured questionnaire. Data were analyzed statistically by simple proportions and tests of significance(Z-test and chi-square test), as and when necessary.

This study shows that the age of primary school children ranged from 5 to 14 years, maximum number (84) of students (80.77%) being between 7 to 12 years. Among 104 students, male and female students were 43 (41.35%) and 61 (58.65%), respectively. Maximum students (76) were Hindus (73.08%) and rests (28) were Muslims (26.92%). Estimates of maternal and paternal literacy were 31.73% (33 out of 104 mothers) and 69.23% (72 out of 104 fathers), respectively.It was found that the female students were more knowledgeable than the male students regarding the maintenance of personal hygiene. There was a wide gap between practice and knowledge of personal hygiene among the primary school children living in the slum area. Even, misconceptions do exist on certain indicators of personal hygiene among the students. Statistically significant association was observed between practices of personal hygiene among the primary school children and the literacy status of their mother. The future of any society depends considerably on the health of its children. The parents and the school teachers, as constructive shapers of children's health behaviours, should play a responsible role in early education of children on personal hygiene.

2.14 Summary

This study assesses the knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State. Personal hygiene is one of the mechanisms used for breaking disease transmission cycles. It also helps the individual to have a good aesthetic value among the people he/she is living with. Personal hygiene is therefore, a measure taken at individual level to promote personal cleanliness so that transmission of diseases from

source to susceptible hosts is prevented. It can be seen that the most effective way in protecting the health of communities where treatment options are constrained due to lack of health care delivery systems is personal hygiene. However, attitude of student towards personal hygiene also improved significantly after education. The practice of personal hygiene also revealed improvement. Baxter and Clearly (2012) also found that, with the implementation of the school health education programme with the emphasis on improvement of personal hygiene, the proportion of children with clean and cut nails, clean hands and hair increased significantly. Hygiene practices are preventive measures to reduce the incidence and spreading of disease and are parts of good personal grooming**.** Hygiene as a system included not only personal hygiene related to food, clothing and exercise but also sciences such as engineering, bacteriology, public sanitation and waterworks (Oyibo, 2012)**.** School teachers are considered the major source of information for their pupils and would appear to be suitable as health educators. School teachers are expected to be role models so that pupils can emulate and adopt their behaviour and attitudes.Meaningful knowledge positively influence attitude formation because of the recipient`s comprehension of health facts, it is positive attitude formation which leads to positive behaviour. On the contrary, superficial knowledge leads to misconception of facts and development of negative attitude. Negative attitudes result practicing harmful behaviour.

This study is unique because an attempt was made to assess knowledge, attitude and practice of Personal Hygiene among Primary School Pupils in Plateau State. The fact is that several study has been conducted on knowledge, attitude and practice of Personal Hygiene in Nigeria and other parts of the world at large, but this study is different from such studies in terms of the Scope, Population, Sample and Sampling Techniques.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The purpose of this study was to assess knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State. The steps followed to achieve this purpose are outlined in this chapter under the following sub-headings:

i. Research Design

ii. Population for the Study

iii. Sample and Sampling Techniques

iv. Instrument for Data Collection

v. Validity of the Instrument

vi. Procedure for Data Collection

vii. Statistical Analysis

3.2 Research Design

An ex-post-facto research design was adopted to assess knowledge, attitude and practices of personal hygiene among primary school pupils in Plateau State.Oyibo (2012), stressed that ex-post-facto research design is a systematic empirical research design that does not in any way control or manipulate independent variables because the situation for the studies already exist or had taken place. But the researcher could indeed create a situation that generated the requisite data for analysis. Therefore, the ex-post-facto research design was considered appropriate for this study.

3.3 Population for the Study

The study population comprises of primary 4 to 6 pupils within the age bracket of 7 and 13. The estimated population of pupils within the age of 7 and 13 are 828,717 (UBE, 2016).

3.4 Sample and Sampling Techniques

For the purpose of this study multistage sampling technique was used.Stratified random sampling technique was used to divide the state into three (3) already existing

senatorial zones or strata namely Plateau Northern Zone, Plateau Central Senatorial Zone and Plateau Southern Senatorial Zone. In each of the three (3) Senatorial zones (Strata), a simple random sampling technique was used to select two Local Government Areasin the state. The samples are Jos North, Bassa under North Zone, Pankshin, Mangu under Central Zone and Mikang, Wase under Southern Zone.

The three senatorial zones in Plateau State was written on slips of paper. These slips werethen folded and put in a container after thorough reshuffling, one of the researcher's assistance dip her hand and picked one slip at a time. The slip was unfolded and the Local Government Area it contained was recorded. This process was repeated until the required number of Local Government Areas were drawn in each of the senatorial zone.

Simple random sampling technique was used to select the number of the respondents (pupils) that filled the questionnaires. In selecting the respondents the researcher wrote Yes or No on pieces of papers and dropped in a container and shuffled. The pupils were then asked to pick. Any student who picked "Yes" was used as a respondent to fill the questionnaires. The researcher and her two (2) trained research assistants moved from class to class to distribute the questionnaires to the respondents. All copies of the questionnaire were retrieved on the spot after they were filled. The administration and the collection of the questionnaires took the researcher and her trained research assistants two (2) weeks to complete.

Table 3.1: Senatorial Zone, Selected Local Government Areas and their Population

S/No	Senatorial Zone	LGA	Primary School Population
1.	Plateau North	Jos North	84,043
		Bassa	73,696
2.	Plateau Central	Pankshin	81,625

		Mangu	85,780
3.	Plateau South	Mikang	29,102
		Wase	23,627
Total			**377,873**

Source: UBE(2014)

The sample size for this study was drawn from the population of the three (3) randomly selected local government area as shown in table 3.1. To obtain a sample size from the total of 377,873, Yamane (1967), formula for determining sample size was used. "Yamane's Formula" is used because the population is known (Finite). Below is the formula:

$$n = \frac{N}{1+N(e)^2}$$

Where:

n=the sample size

N= the finite population

e=level of significance (or limit of tolerable error)

1=unit (a constant)

$$\frac{377,873}{1+377,873\ (0.05)^2}$$

$$\frac{377,873}{1+377,873x0.0025}$$

$$\frac{377,873}{944.685}$$

n=399.998

From the formula above, a sample size of 399.99 was obtained. Hence a total 400 respondents were randomly drawn from the sample Local Government Areas. The respondents from each Local Government Area were sampled using proportionate sample teaching as shown in table 3.2 below.

Proportionate Sampling can be calculated using the formula below:

$n_h = (N_h / N) \times n$

Where:

n_h= Proportionate Sampling;

N_h= Population Size;

N = Total Population Size; and

N= Total Sample Size

Table 3.2: Numbers of Respondents Proportionately Sampled from Local Government Areas

S/n	SelectedLGA's	Population	Proportion	Sample size for LGAS
1	Jos north	84043	$\frac{84043}{377,873} \times 400$	89
2	Bassa	73,696	$\frac{73,696}{377,873} \times 400$	78
3	Pankshin	81625	$\frac{81625}{377,873} \times 400$	86
4	Mangu	85780	$\frac{85780}{377,873} \times 400$	91
5	Mikang	23102	$\frac{29102}{377,873} \times 400$	31

6	Wase	23627	$\frac{23627}{377,873} \times 400$	25	
Total				400	

Table 3.3: Number of Respondents Proportionately Sampled from Selected Primary School

S/N	LGAS	Selected Primary school	Population	Sample size for LGAS	Proportion	Sample for primary schools
1.	Jos north	Townshi Primary School.	415		$\frac{415}{809} \times 89$	46
		L.G.E.A Primary School Gangare	394	89	$\frac{394}{809} \times 89$	43
	Total.		809			
2.	Bassa	LGEA Primary School Rukuba	211		$\frac{211}{369} \times 78$	45
		ManguCentry Primary School Mangu	158	78	$\frac{158}{369} \times 78$	33
	Total.		369			
3.	Pankshin	Holy Cross Primary School.	284	78	$\frac{284}{395} \times 86$	62
		Central Primary School	111		$\frac{111}{395} \times 86$	24
	Total		369			
4	Mangu	Mangu Central Primary School.	517		$\frac{517}{845} \times 91$	56
		LGEA Primary School, Gindiri.	328	91	$\frac{328}{845} \times 91$	35
	Total		845			
5	Mikang	T/R.C.M School Tonkus.	141		$\frac{141}{255} \times 31$	17
		LGEA Primary School, Tonkus.	114	31	$\frac{114}{255} \times 31$	14
	Total		255			

6	Wase	LGEA Primary School, Wase.	108	25	$\frac{108}{220} \times 25$	12
		Wase Central Primary School, Wase.	112		$\frac{112}{220} \times 25$	13
	Total		220			
	Grand Total					400

3.5 Instrumentation

The instrument for data collection was a closed ended questionnaire. The questionnaire consisted of four (4)Sections, namely A, B, C and D. Section A contained four (4) Statements on Personal Data of the Respondents; Section B, contained ten(10) Statements of Knowledge on Personal Hygiene; Section C, contained ten (10) Statements on attitude of personal hygiene; Section D, contained ten (10) Statements on the practices of Personal Hygiene Practice. Hence the questionnaire consisted thirty-four (34) items. To score the responses of the respondent, a 4-point Likert Scale was used as follows:

SA –Strongly agree = 4 points

A - Agree = 3 points

D – Disagree = 2 points

SA - Strongly Disagree = 1 point

Hence, mean score of response was considered positive, if it is 2.5 and above and mean score of any response less than 2.5 is regarded as negative.

3.6 Validity of the Instrument

In order to establish the face and content validity of the instrument adopted by the researcher, the questionnaire was vetted by experts in Department of Physical and Health

Education and Nursing Department of Ahmadu Bello University, Zaria. After the vetting of the questionnaire by the jurors, all suggestions and corrections were incorporated and the clean copy of the questionnaire was used to collect data from the respondent (Moronkola, O.A., Abe, C.V. & Ogunmuyi,1997)

3.7 Procedure for Data Collection

To collect data for this study a letter of introduction was collected from the department of human kinetics and health and was taken to the Headmaster/Headmistress of the sampled schools for approval.A total of 400copies of questionnaireswere distributed to primary school pupils in six Local Government Areas that were selected for the study. The researcher visited each of the primary schools in the Local Government Area selected for the study during school hours and administered the questionnaires. Pupils of primary 4 to 6 were given copies of the questionnaires at random until the desired number of the subjects have been served. Those pupils served with the questionnaire were re-oriented on the purpose of the study and instructed on how to complete the questionnaires. Completed copies of the questionnaire were retrieved immediately.

3.8 Procedure for Data Analysis

The data collected for this study was analyzed using descriptive statistics of frequency count. Percentages was used to analyze the bio-data of the respondents.Research question

one was analyzed using simple percentage while research question 2 and 3 were analyzed using mean and standard deviation. Inferential statistics ofone sample t-test was used to analyzeall the 3 stated hypothesis at 0.05 confidence level.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The purpose of this study was to assess knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State, Nigeria. To achieve this purpose, four hundred (400)questionnaires were randomly distributed to the respondents. Out of these 400 questionnaires administered, three hundred and ninety three (393) (98.3%) were completed and retrieved. The data collected were analyzed and the results are presented and discussed in this chapter.

4.2 Results

Table 4.1: Demographic Characteristics of the Respondents

S/N	Variable	Option	Frequency	Percentage %
1.	Gender	Male	248	63.1
		Female	145	36.9
		Total	**393**	**100.0**
2.	Class	Primary Four	124	31.6
		Primary Five	135	34.4
		Primary Six	134	34.0
		Total	**393**	**100.0**
3.	Age Range	7 – 9 years	106	27.0
		10 – 11 years	214	54.5
		12 – 15 years	73	18.6
		Total	**393**	**100.0**

Table 4.1 above shows the demographic characteristics of the respondents. An observation of the results revealed that 248 (63.1%) were male while 145 (36.9%) of the respondents were female. According to their classes, 124 (31.6%) were in primary four, 135 (34.4%) were primary five pupils while 134 (34.0%) were in primary six. Also the age of the respondents revealed that 106 (27.0%) were between the age range of 7 – 9 years, 214 (54.5%) were between the age of 10 – 11 years and 73 (18.6%) were between the age range of 12 – 15 years.

4.2.1 Answering of Research Questions

Research Question One: Do Primary School Pupils in Plateau State have knowledge of personal hygiene?

Table 4.2: Response on the Knowledge of personal hygiene among primary school pupils

S/N	Item	Yes		No	
		Frequency	%	Frequency	%
1	Personal hygiene is about body Cleanliness.	235	59.7	158	40.3
2	Keeping your nails trimmed and clean is part of personal hygiene.	221	56.2	172	43.8
3	Washing the hair regularly is part of personal hygiene.	231	58.7	162	41.3
4	Keeping the hair well-trimmed is part of personal hygiene.	225	57.2	168	42.8
5	Picking your teeth with broom stick is not healthy for your teeth.	217	55.2	176	44.8
6	Cleaning your teeth with chewing stick/tooth paste and brush prevent tooth decay.	285	72.5	108	27.5
7	Cleaning your teeth with chewing stick/tooth paste and brush freshens the breathe.	247	62.8	146	37.2
8	Washing your school uniform regularly prevent skin diseases.	233	59.3	160	40.7
9	Wearing foot wear or shoes prevent you from having leg infection.	199	50.6	194	49.4
10	It is good to take your bathe everyday as part of personal hygiene.	311	79.1	82	20.9

Table 4.2 shows the frequency and percentage score of the responses on the knowledge of personal hygiene among primary school pupils. Questions 1-10 shows that all the pupils have a positive knowledge of personal hygiene with questions 10 and 6 with the highest percentage of 79.1% and 72.5% respectively on cleaning of teeth and taking their bath. The implication of this result is that primary school pupils had knowledge of personal hygiene in Plateau State.

Research Question Two: What is the attitude of primary school pupils towards personal hygiene in Plateau State?

Table 4.3: Mean scores of the Attitude of primary school pupils towards personal hygiene

Items	Mean	Std. Dev.
I like washing my hands before eating food	1.8115	1.17638
I always like to keep my finger nails short and clean	2.6191	1.05089
I like washing my hands with soap and water after playing	1.2798	0.58957
I like washing my mouth everyday	2.1313	1.40132
I always like to wash my hands after using the toilet	1.7907	0.98354
I prefer to wash my uniform every day	2.4001	1.31921
I like taking my bath everyday	3.8147	1.61872
I always like to wash my hair to keep it neat	2.4013	0.74441
I like washing my feet whenever I play without shoes	2.2593	1.43382
I like keeping my body and cloths clean always	2.1351	0.84012
Aggregate mean	**2.264**	

Table 4.3 shows the mean score of the responses on the attitude of primary school pupils towards personal hygiene. Washing my hands with soap and water after playing has a mean of 1.2798 and standard deviation of 0.5895, I like washing my feet whenever I play without shoes has a mean of 2.2593 and standard deviation of 1.4338, I always like to wash my hands after using the toilet has a mean of 1.7907 and standard deviation of 0.9835.The aggregate mean score of the items is 2.264 which were found to be less than benchmark

score of 2.5. This implies that attitude of primary school pupils towards personal hygiene is negative.

Research Question 3: Do primary school pupils practice personal hygiene in Plateau State?

Table 4.4: Mean scores of the practice adopted by primary school pupils towards personal hygiene

Items	Mean	Std. Dev.
I wash my hands after eating.	2.1179	0.90209
I wash my hands after playing.	2.5324	0.96394
I wash my hands before eating.	1.4751	1.03941
I wash my mouth every day.	2.2721	0.80224
I wash my hands after using the toilet.	2.0039	1.18836
I wash my uniform every day.	2.1206	1.32072
I wash my feet whenever I play without shoes.	2.2315	0.5307
I cut my finger nails every week.	1.3194	0.41195
I wash my hair always.	2.7593	1.01862
I take my bathe every day.	1.4503	0.61271
Aggregate Mean	**2.028**	

Table 4.4 above shows the mean score of the responses on the practice adopted by primary school pupils towards personal hygiene.I wash my hands before eating has a mean of 1.4751 and standard deviation of 1.0394, I cut my finger nails every week has a mean of 1.3194 and standard deviation of 0.4119, I wash my hair always has a mean of 2.7593 and standard deviation of 1.01862.The aggregate mean score of the items is 2.028 which

werefound to be less than the fixed mean score of 2.5. This implies that the practice adopted by primary school pupils towards personal hygiene were not positive. They do not apply their knowledge of personal hygiene.

4.3 Hypotheses Testing

Hypothesis one: Knowledge of primary school pupils towards personal hygiene in plateau state is not significant.

Table 4.5: One sample t test on knowledge of school pupils towards personal hygiene

	Mean	Std. Deviation	t-value	Df	P-value
Aggregate mean	3.1726	1.4168	5.207	392	0.021
Constant mean	2.50	0.00			

t (392) = 1.972, P < 0.05

From the results of the analysis presented above, it shows that the probability value is less than 0.05 at 5% level of significance. The t-value value is 5.207 greater than the t-critical is 1.972 at degree of freedom 392. The null hypothesis which states that "Knowledge of school pupils towards personal hygiene in Plateau State is not significant" is rejected.

Hypothesis Two: Attitude of primary school pupils towards personal hygiene in plateau state is not significant.

Table 4.6: One sample t-test analysis of attitude of school pupils towards personal hygiene

	Mean	Std. Deviation	t-value	df	P-value
Aggregate mean	2.264	.86511	1.341	392	0.081
Constant mean	2.50	0.00			

t (392) = 1.972, P $\leq$ 0.05

From the above result of analysis presented, it shows that the probability value is greater than 0.05 at 5% level of significance. The t-value value is 1.341 is less than the t-critical is 1.972 at degree of freedom 392. The null hypothesis which states that attitude of school pupils towards personal hygiene in Plateau State is not significant is retained

Hypothesis Three: Practice of primary school pupils towards personal hygiene in plateau state is not significant.

Table 4.7: One sample t-test analysisofknowledge practice of school pupils towards personal hygiene

Variables	Mean	Std. Deviation	t-value	Df	P-value
Actual mean	2.048	.90483	1.291	392	0.39
Constant mean	2.50	0.00			

t (392) = 1.972, P $\leq$ 0.05

From the above result of analysis presented, it shows that the probability value is greater than 0.05 at 5% level of significance. The t-value value is 1.291 is less than the t-

critical is 1.972 at degree of freedom 392. The null hypothesis which states that Practice of school pupils towards personal hygiene in plateau state is not significant is retained.

4.4 Discussions

The result of this study reveals that Primary School Children in Plateau State have significant knowledge of personal hygiene. This finding agreed with a research conducted by Emeka(2016) on Knowledge and Practice of Personal Hygiene among Primary School Children in Imo State, which revealed that about 65% of school children in Imo State. had some perceptions on the importance of personal hygiene and could spell it when interviewed. The study concluded that personal hygiene knowledge and practice are satisfactory among the school Children in Imo State. This study is in line with Adegboyega,(2010) who carried out a research on Knowledge, Attitude and Practice of Hygiene among School Children in Osun State, which pointed out that 52% of Children were having adequate knowledge of personal hygiene. Most students (99.0%) reported hand washing before meals but only 36.2% reported using soap. Although, 76.7% of students reported that washing hands after defecation was important, only 48.8% reported actually followed this practice. Students with adequate knowledge of proper hygiene were more likely to have clean clothes and have lower risk of parasitic infections in Osun State. This study is in line with Sarkar (2013) who conducted a research on personal hygiene among school children living in a slum of Kolkata, India. He observed that female students were more knowledgeable than male students regarding the maintenance of personal hygiene among primary school children living in the slum of Kolkata, India. This study is in line with the research conducted by Oyibo (2012) on knowledge and practice of basic personal

hygiene among school children age 6-14 in Abraka, Delta State, Nigeriawho revealed that the school children studied in Abraka, had high level of knowledge related to basic personal hygiene. This high level of knowledge related to basic personal hygiene recorded among the children studied could be attributed to the teaching of hygiene education in Primary Schools.

As regards to Attitude of Primary School Pupils towards Personal Hygiene in Plateau State, the findings revealed that the subjects did not have adequate attitude. This observation is in line with Adegboyega,(2010) where it was observed that hygiene attitude of students in some selected schools in Osun State is poor towards their personal hygiene because they are not heavily influenced by individual's awareness, knowledge and attitude in their various schools and the school issupposed to be the right place to initiate this behaviour early in childhood. In addition, it was observed that children are more receptive to learning and are very likely to adapt to healthy behaviour at a younger age and can also be agents of change by spreading what they have learned in School to their Family and Community at large. Mohammed*et al*,(2013) revealed that personal hygiene is not an isolated behaviour, instead it varies from person to person according to different factors. Intervention programmes raising the awareness and importance of personal hygiene among school children through coordinated education measures by Parents –Teachers and media will be beneficial to impart these early in life. This study is in line with Adegboyega,(2010),who conducted a research on Knowledge, Attitude and Practice of Hygiene among School Children in Osun State who pointed out that 76.7% of students reported that washing hands after defecation is important but only 14.8% actually followed this practice due to the attitude of the school children. Although, the students know that washing hands after defecation is important, they may be

negatively influenced by factors such as laziness, the rush to play with friends or even the lack of hand washing facilities close to the latrines.

As regards practice, the outcome of this study also shows that the practice of personal hygiene among primary school pupils in Plateau State is not significant. This study agreed with Sarkar (2013) who carried out a research on Personal Hygiene among Primary School living in a slum of Kolkata, India. The study revealed that practice of personal hygiene among the Primary School Children in slum area of Kolkata, India is not satisfactory. Students with poor hygiene practice suffer from diarrhoea, fever with or without cough or cold, passage of worms in stool, head lice, scabbies, dental carries and multiple boils. This study is in line with Adegboyega,(2010) who pointed out ina research they conducted on Knowledge and Practice of Personal Hygiene among Primary School Children in osun state. The study also revealed that about half of the student mentioned their teacher as a source of information regarding personal hygiene. This observation clearly shows that the school and its teacher plays vital role in imparting knowledge and practice of personal hygiene very early in the child's life. This study is in line with the research conducted by Oyibo (2012)on Knowledge and Practices of Basic Personal Hygiene among School Children in Abraka, Delta State, Nigeria. It revealed that the practices related to basic personal hygiene reported by the school children in Abraka was low and was not totally reflective of the high level of knowledge related to the basic personal hygiene observed among the children. This disparity between knowledge and practice related to basic personal hygiene observed in this study is in line with Health Education Principle that knowledge does not necessary lead to practice (Onwasigwe, 2015). Kalua(2015) viewed that meaningful knowledge positively influence attitude formation because of the recipient`s comprehension of health facts, it is positive

attitude formation which leads to positive behavior. On the contrary, superficial knowledge leads to misconception of facts and development of negative attitude. Negative attitudes result practicing harmful behavior. Long-Shan, Bo-Jun, Jin-Xiang, Sen-Hai, and Jack (2015) observed that good personal hygienic practices encouraged through health education has been reported to be associated with low prevalence of communicable diseases in school pupils. Personal hygienic practices therefore plays an important role in preventing spread of respiratory infections, helminthiasis, skin infections, eye infections food borne diseases, spread of new pathogens as in epidemics. Certain respiratory infections (common cold, influenza virus infection, etc.) have also been linked to poor personal hygienic practices.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The purpose of this study is to assess knowledge, attitude and practice of personal hygiene among primary school pupils in Plateau State, Nigeria. Three (3) purposes of the study, research questions and hypotheses respectively were formulated and tested for this study. Related literature were reviewed under the conceptual framework, theoretical framework and empirical studies. Ex-post facto research design was adopted for this study. The population of this study comprised of primary 4 to 6 Pupils within the age bracket of 7 and 13. The estimated population of pupils within the age of 7 and 13 are 828, 717. A multi-stage sampling approach that involved a stratified random sampling technique, simple random sampling technique and convenient sampling techniques was used to select four hundred (400) respondents who were drawn from the population out of which three hundred and ninety three (393) students data were used for the study. The instrument used for data collection was the questionnaire. Data collected was analyzed with Statistical Package for Social Science (version 17) using frequencies, percentages, mean, standard deviation, one sample t-test and Independent sample t-test. Out of three (3) hypotheses, one null hypothesis was rejected while two null hypotheses were accepted.

The major findings of this study were summarized as follows:

1. knowledge of school pupils towards personal hygiene in plateau state is significant ($t = 5.207$; $p = 0.021$)
2. Attitude of school pupils towards personal hygiene in plateau state is not significant ($t= 1.341$; $p=0.081$).

3. Practice of school pupils towards personal hygiene in plateau state is not significant ($t = 1.291$; $p = 0.39$)

5.2 Conclusions

On the basis of the findings of this study, the following conclusions have been draw from the knowledge, attitude and practice of personal hygiene in Plateau State:

1. Primary school pupilsin Plateau State have knowledge of personal hygiene.
2. The attitude of primary school pupils in Plateau State towards personal hygiene in not positive.
3. The primary school pupils do not practice personal hygiene in plateau state

5.3 Recommendations

In light of the findings of this study, the following recommendations are made:

1. State Ministry of Health/Other relevant Organizations concerned with Health Care should intensify effort by creating health and Hygiene Promotion Programmes such as Talk shows and Seminars in Schools on the importance of hygiene through the formation of Health Club that would teach pupils on proper hygienic practices, and provide incentives for good hygiene practices.
2. Teachers and parents should encourage the primary school pupils to improve on their attitudes towards personal hygiene at early stage because this will stick to them when they grow up.

3. Although, the respondents have adequate knowledge of personal hygiene, there should be continuous education and sensitization by the School Authorities through proper monitoring of the pupils.

5.4 Suggestions for Future Research

This study was conducted in Plateau State of Nigeria, it is suggested that this study should be replicated in other states of the Federation to ascertain knowledge, attitude and practice of Personal Hygiene among Primary School Pupils.

REFERENCES

Adegboyega, D. J. (2010) Knowledge, Attitudes, and Practices (KAP) of Hygiene among School Children in Osun State. J Prev Med Hyg. 2010; 51(2): 73–79.

Albanese, G., Venturi, C. &Galbiati, G. (2015). Treatment of Larva Migranscutanea (creeping eruption): A Comparison between Albendazole and Traditional Therapy. *International Journal of Dermatology*40 (1): 67–71. doi:10.1046/j.1365-4362.2015.01103.x. PMID 11277961

American Optometric Association (2013). Lutein and zeaxanthin. Retrieved from http://www.aoa.org/patients-and-public/caring-for-your-vision/diet-and-nutrition/lutein

Ananthakrishnan, S., Pani, S.P.&Nalini, P. (2015).*A Comprehensive Study of Morbidity in School Age Pupils Indian Pediatrics* 2015; 38: 1009-1017

Andrews, R.M., McCarthy, J., Carapetis, J.R. & Currie, B.J. (2017). Skin Disorders, Including Pyoderma, Scabies, and Tinea Infections.*Pediatr.Clin. North Am.*56 (6): 1421–40. doi:10.1016/j.pcl.2017.09.002. PMID 20162029

Barton, H. & Byrne, K. (2017).*Introduction to Human Vision, Visual Defects & Eye Tests* p. 22.

Bloomfield, S.F., Aiello, A.E., Cookson, B., O'Boyle, C.&Larson, E.L. (2017). The Effectiveness of Hand Hygiene Procedures Including Hand-Washing and Alcohol-Based hand Sanitizers in Reducing the Risks of Infections in Home and Community Settings.*American Journal of Infection Control*2017;35, suppl 1:S1-64

Bloomfield, S.F., Exner, M., Signorelli, C., Nath, K.J. & Scott, E.A. (2012).The chain of infection transmission in the home and everyday life settings, and the role of hygiene in reducing the risk of infection. *International Scientific Forum on Home Hygiene*.http://www.ifh-homehygiene.com/best-practice-review/chain-infection-transmission-home-and-everyday-life-settings-and-role-hygiene

Bubenik, A. (2013). Why do humans get "goosebumps" when they are cold, or under other circumstances?.*Scientific American.*

CDC, (2016).Dental Caries.Disease Control Priority Project. Available at www.ncbi.nlm.nhi.gov.com.

Characteristics of Abnormal Vaginal Discharge available at http://www.faqs.org/health/Healthy-Living-VI/Personal-Care-and-Hygiene.htmlRetrieved in June, 2016.

Adebayo. (2014).Human enteric infection with canine hookworms.*Ann. Intern. Med.*120 (5): 369–74. doi:10.7326/0003-4819-120-5-201403010-00003. PMID 8304653.

Dave, P. (1978). *Poorculture*: How America is shaped by its Grossest National Product.

Dean, I.& Siva-Jothy, M.T. (2011).*Human fine body hair enhances ectoparasite detectio*n. *Biology Letters*8 (3): 358–61. doi:10.1098/rsbl.2011.0987. PMC 3367735.PMID 22171023.edit

Deb, S., Dutta, S., Dasgupta, A. &Misra, R. (2010). Relationship of Personal Hygiene with Nutrition and Morbidity Profile: A Study among Primary School Pupils in South Kolkata. *Indian Journal Community Medicine* 2010;35:280-4.

Curtis, (2017). Definition of hygiene available at http://www.who/int/water sanitation health/en/facsfigures04.pdf Retrieved in June, 2016).

Dickinson, P. (1989). *Views on Cleanliness*. Loyalty ltd. P 6-7.

Dongre, A.R.,Deshmukh, P.R.,Boratne, A.V.,Thaware, P. &Garg, B.S. (2008). *An approach to hygiene education among rural Indian school going pupils.Online Journal of Health and Allied Sciences* 2008.

Ehrenkranz, N.J. & Alfonso, B.C. (2014). Failure of bland soap hand wash to prevent hand transfer of patient bacteria to urethral catheters. *Infection Control and Hospital Epidemiology*; 12: 654-662.

Emeka, A. R. (2016). Healthy Living Personal Care and Hygiene available at http://www.faqs.org/Healthy-Living-VI/Personal-Care-and-Hygiene.html. retrieved in June, 2016.

Everitt, H.A., Little, P.S., &Smith, P.W (2016).A randomised controlled trial of management strategies for acute infective conjunctivitis in general practice. *BMJ*. 2016 Aug 12;333 (7563):321. Epub2016 Jul 17.

Falsey, A.R. (2017). Evaluation of a hand washing intervention to reduce illness rates in senior day-care centres. *Infection Control and Hospital Epidermiology*.20:200-205.

Fewtrell, L. (2015). *Water, Sanitation and Hygiene Intervention to Reduce Diarrhoea in Developing Countries*; A Systematic Review and Meta-Analysis. Lancet Infections Diseases.

Bayo, H. (2017). Textbook of paediatrics. University of IbadanPress Ltd; 2017.

Galanis, E. (2017). Campylobacter and bacterial gastroenteritis.*CMAJ: Canadian Medical Association*177 (6): 570–1. doi:10.1503/cmaj.070660. PMC 1963361.PMID 17846438.

Gasser, R.B., Cantacessi, C. & Campbell, B.E. (2017).Improved Molecular Diagnostic Tools For Human Hookworms. *Expert Rev. Mol. Diagn.*9 (1): 17–21.

Gemson, G.S. &Kyamru, J.I. (2013). Theory and Practice of Research Method for the Health and Social Sciences Bauchi: Living Stone Educational Publishing Enterprises (Nig).

Griffin, B. (2014). Why do we have eyebrows?*Why*. Retrieved June 2014.

Guyton, T. & Hall, G. (2015). Textbook of Medical Physiology. Elsevier 11th ed. P 439.

Helen, A., Latha, V., Cecilia, D. & Nicola, S. (2017). Hand hygiene and school pupils. Health Action. Oct;26 -30.

IngeNandrup-Bus R. (2017). Mandatory hand-washing in elementary schools reduces absenteeismdue to infectious illness among pupils: a pilot intervention study. Am J Infect Control.2017; 37: 820–826.

John, M.B. & Didier, P. (2011).Guideline for Hand Hygiene in Health-Care Settings. Recommendation of the Healthcare Infection Control Practice Advisory Committee.

Kalua, F (2015). The relationship between Knowledge, |Attitude and Practice of Care Giversand Food Hygiene in Day Care Centres. Unpublished M. Tech Dissertation, Pretoria, Technikon Pretoria: 12-23

Krause, K. & Foitzik, K (2016). Biology of the Hair Follicle: The Basics. *Seminars in Cutaneous Medicine and Surgery.* 25: 2. doi:10.1016/j.sder.2016.01.002.

Lai, Y.L. (2014). Osteoporosis and periodontal disease.*J Chin Med Assoc.* 67 (8): 387–8. PMID 15553796.

Long-Shan, X., Bao-Jun, P., Jin-Xiang, L., Sen-Hai, Y. & Jack, J. (2015). Creating health-promoting schools in China: a project started from deworming. *Health promotion International*; 15(3): 197-206.

Lutans, F. (2014). Organisation Behaviour 10thed Nigeria- Hill book Company: 81-84

Marks, J.G. & Miller, J. (2016).*Looking bill and Marks' Principles of Dermatology*. (4th ed.). Elsevier Inc. ISBN 1-4160-3185-5.

Maruthi, A.Y., Lakshmi, A.K., Rao, R.S., Hossain, K., Chaitanya, A.D. &Karuna, K. (2008).Dermatophytes and other fungi associated with hair-scalp of primary school pupils in Visakhapatnam, India: A case study and literature review. *The Internet Journal of Microbiology*2008;5(2).

Moronkola, O.A., Abe, C.V. & Ogunmuyi, A.O. (1997). (Eds.). Understanding research Methodology in Education. Ibadan: Amazing Grace and Educational Business Service.

Musa, U. (2014). Relationship of Health Knowledge with Attitude towards Health ad Healthful Practice of Senior Secondary School Students in Nigeria an unpublished thesis in the department of human kinetics and health education ABU Zaria.

Natze, B. (2017). Policy Option for Water, Sanitation and Hygiene Improvement.PUB Press

NPC (2013).Nigeria Census Figures.

Onwasigwe C.N (2012). Effects of Health Education on the Perception of EnvironmentalSanitation and Personal Hygiene among Nigerian Primary School Children.Orient Journal of Medicine; 14(4): 34-36

Oyibo, P.G. (2012). Basic personal hygiene: Knowledge and practices among school pupils aged 6-14 years in Abraka, Delta State, *Nigeria. Continental J Tropical Medicine*; 6:5-11.

Park, K. (2017). *Park's textbook of preventive and social medicine*. 19th ed. Jabalpur: M/s BanarasidasBhanot.

Pearce, E.C. (2008). A general textbook of nursing: a comprehensive guide to the final state examination. Ulvsses 4th ed. p355

Personal Grooming available at http://en.wikipedia.org/wiki/Personal grooming Retrieved in June, 2016.

Pheabean, A. (2014). Water Sanitation and Hygiene Links to health. Facts and FiguresPax.

Postma, L., Getkate, I. &Vanwijk, C. (2014). Life Skill Based Hygiene Education; International Water and Sanitation Centre. URL:http://www.orc.org:- Accessed 5th April 2011.

Rotter, M. (2015). *Hand washing and hand infection*. Edu Press Ltd. Chapter 87

Sally, S. (2015). Profit is a Dirty Word: The Development of Public Bath and Wash houses in Britain 1847-1915, *Social History of Medicine,* 13, no.1, P 66

Sanusi, A. (2016). Survey of Reported Cholera Cases, Borno State. Nigeria: *Medical Journal,* 18(1) 39-43.

Sarkar, M. (2013). Personal hygiene among primary school children living in a slum of Kolkata, India. *Journal of Preventive Medicine and Hygiene*. 2013; 54(3):153-158.

Sherrow, V. (2016). *Encyclopedia of Hair: A Cultural History*. 88 Post Road West, Westport, CT: Greenwood Press. p. iv. ISBN 0-313-33145-6.

Soumya, D., Sinjita, D., Aparajita, D. &Raghunath, M. (2010). Relationship of personal Hygiene with nutrition and morbidity profile: a study among primary school pupils in south kolkata. *Indian j com med*; 35 (2): 280-3

Strachan, D.P. (2015). *Family size infection and atopy*: the first decade of hygiene hypothesis.1: 52.

Tadesse, P. (2013). *Module on Infection CONTROL in Health Care Facilities*.Dilla, Carter Center in collaboration with MoE Ethiopia.

Tintinalli, J.E. (2010). *Emergency Medicine: A Comprehensive Study Guide (Emergency Medicine (Tintinalli))*. New York: McGraw-Hill Companies. pp. 830–839. ISBN 0-07-148480-9.

Ullah, I., Sarwar, G., Aziz, S. & Khan, M.H. (2017).Intestinal Worm Infestation in PrimarySchool Pupils in Rural Peshawar.*Gomal Journal of Medical Sciences* Jul-Dec;7(2):132-6.

UNICEF (2013).*School Sanitation Package for Primary School.* Kathmandu, Nepal, UNICEF, Water and Environmental Sanitation Sect.

Walton, S.F., & Currie, B.J. (2017).Problems in Diagnosing Scabies, a Global Disease in Human and Animal Populations.*Clinical Microbiology Reviews*20 (2): 268–79. doi:10.1128/CMR.00042-06. PMC 1865595.PMID 17428886

Williams, S.T. (2015).*Influences of Knowledge, Attitude and Practice on food kiosk hygiene*. Unpublished M.Sc Thesis Tshwane University of Technology, Kenya, 35-74

World Health Organization (2011). http://www.who.int/water_sanitation_health/publications/2011/tn5_treatment_water_en.pdf?ua=1retrievedJune, 2016

World Health Organization (2013). "Blinding Trachoma Fact sheet N°382". *World Health Organization*. November 2013 Retrieved June, 2016.

World Health Organization (2014). Zimbabwe develops participatory methods for hygiene education in schools. In: *Environmental health*, no. 18, April 2013, p. 11.

World Health Organization (2016).Strengthening Interventions to Reduce Helminth Infections as an entry point for the development of health promoting schools. Geneva, World Health Organization, 2016 (document HPR/HEP/96.10).

World Health Organization (2017). *Rotavirus vaccines: an update (PDF). Weekly epidemiological record*. 51–52 (84): 533–540. PMID 20134143. Retrieved June, 2018

Zadik, Y., Bechor, R., Shochat, V. &Galor, S. (2016). *Ethnic origin and alveolar bone loss in Israeli Adult* (in Hebrew).refuatHapehVehashinavim:25(2):19-22.

APPENDIX I

QUESTIONNAIRE ON THE KNOWLEDGE AND PRACTICE OF PERSONAL HYGIENE AMONG PRIMARY SCHOOL PUPILS

DEPARTMENT OF HUMAN KINETIC AND HEALTH EDUCATION AHMADU BELLO UNIVERSITY, ZARIA

The Researcher is a Postgraduate student of the above Department in Partial Fulfillment of the requirement for the award of Master of Education in Health Education, she is conducting a research on "Knowledge and Practice of Personal Hygiene among Primary School Pupils in Plateau State.

She seeks your cooperation to honestly respond to the statements. All information obtained would only be used for the purpose of this study and will therefore be held confidential.

SECTION A: PERSONAL DATA

Please tick (√) the column that is most appropriate to you.

School Name:

1. Age Range:
   a) 7-9 years ( )
   b) 10-11 years ( )
   c) 12-13 years ( )
2. Gender:
   a) Male ( )
   b) Female ( )
3. Class:
   a) Primary Four 4 ( )
   b) Primary Five 5 ( )
   c) Primary Six 6 ( )

SECTION B: KNOWLEGDE OF PERSONAL HYGIENE

Please read each of the following statement in this section and tick (√) the column that is most appropriate to you against each space or column by answering.

Knowledge of personal hygiene		**Yes**	**No**
1	Personal hygiene is about body Cleanliness.		
2	Keeping your nails trimmed and clean is part of personal hygiene.		
3	Washing the hair regularly is part of personal hygiene.		
4	Keeping the hair well-trimmed is part of personal hygiene.		
5	Picking your teeth with broom stick is not healthy for your teeth.		
6	Cleaning your teeth with chewing stick/tooth paste and brush prevent tooth decay.		
7	Cleaning your teeth with chewing stick/tooth paste and brush freshens the breathe.		
8	Washing your school uniform regularly prevent skin diseases.		
9	Wearing foot wear or shoes prevent you from having leg infection.		
10	It is good to take your bathe everyday as part of personal hygiene.		

Section C: Attitude of School Pupils towards Personal Hygiene

S/n	Attitude	SA	A	D	SD
1	I like washing my hands before eating food				
2	I always like to keep my finger nails short and clean				
3	I like washing my hands with soap and water after playing				
4	I like washing my mouth everyday				
5	I always like to wash my hands after using the toilet				
6	I prefer to wash my uniform every day				
7	I like taking my bath everyday				
8	I always like to wash my hair to keep it neat				
9	I like washing my feet whenever I play without shoes				
10	I like keeping my body and cloths clean always				

Section D: Practice of Personal Hygiene

S/N	Practice of personal hygiene	SA	A	D	SD
1	I wash my hands after eating.				
2	I wash my hands after playing.				
3	I wash my hands before eating.				
4	I wash my mouth every day.				
5	I wash my hands after using the toilet.				
6	I wash my uniform every day.				
7	I wash my feet whenever I play without shoes.				
8	I cut my finger nails every week.				
9	I wash my hair always.				
10	I take my bathe every day.				

APPENDIX II

Department of Human Kinetic and Health

Education, Ahmadu Bello University, Zaria.

21st June, 2016

M.Ed/Educ/20258/2012-2013

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Dear Sir/Madam,

REQUEST TO VET A QUESTIONAIRE

The bearer **KURE RAHILA** with Registration Number M.Ed/Educ/20258/2012-2013 is a post graduate (M.Ed Health Education)student of this Department. She is currently conducting aresearch work on "**Knowledge, Attitude and Practice of Personal Hygiene among Primary School Pupils in Plateau State**".

On the basis of your professional expertise and experience,you have been selected to serve as juror to critically vet the questionnaire and make the necessary corrections for its improvement.

Please kindly return the questionnaire to the researcher after completing the vetting.
Thank you.

Dr.M. Umaru

Major Supervisor