

**PERSONAL HYGIENE AND OCCURRENCE OF DISEASES AMONG
PRIMARY SCHOOL CHILDREN IN MAKINDYE
MUNICIPALITY, KAMPALA, UGANDA**

By

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DECLARATION

I, Toriola Funke Christiana, hereby declare that this report dissertation is my original work, and to the best of my knowledge, it has never been submitted by any other universities for any academic award in and out of Kampala International University.

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APPROVAL

I hereby certify that this thesis was compiled under my supervision, and is herein submitted for examination with my approval as the designated University supervisor.

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DEDICATION

This research work is dedicated to Almighty God for seeing me through the tides of the time. To my lovely husband Seyinde Anthony for his support and valuable contribution for the successful completion of my course of study. To my lovely daughters Esther Seyinde Tomisin and Eniola Seyinde Elisabeth for their understanding and patience with me during the course of study.

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ABSTRACT

The study revealed into the relationship between personal hygiene and the occurrence of diseases primary school children in Makindye municipality where the following aspects were investigated: (1). personal hygiene practices among primary school children, (2). occurrence of disease among primary school, (3). relationship between hygiene practices and occurrence of diseases, (4). difference between personal hygiene practices and occurrence of diseases between private and public primary schools. The study employed descriptive comparative and correlation design. Twelve teachers were chosen purposively in six primary schools and three hundred sixty eight pupils were selected from both public and private primary schools. Questionnaires were used to gather data. Frequency, percentage, means, Pearson correlation coefficient was used to determine the relationship between the variables and t-test was used to determine the difference between variables. Findings showed that the personal hygiene practices among primary school children was rated good with a mean of 2.07. The occurrence of diseases was high with a mean 1.71. As to personal hygiene practices between private and public primary school children , private school primary school has very good personal hygiene practices compared to public school children with a mean of 2.19. While occurrence of diseases both public and private school primary children have high occurrence of diseases with a mean of 2.17. Null hypothesis of no relationship between personal hygiene practices and occurrence of diseases was rejected. There is no difference between the personal hygiene practices and occurrence of disease between public and orivate primary school children. Based on the findings of the study the following conclusions were made Personal hygiene practices among primary school children was rated good which means that Primary school children are aware of the importance of practicing proper personal hygiene. The occurrence of diseases among primary school children was high despite practicing personal hygiene children are affected by diseases like bacterial diseases, waterborne diseases and fungal or infectious diseases. This means that the diseases affecting school children are not only due to personal hygiene but other factors like dirty surroundings and malnutrition. There is a relationship between personal hygiene practices and occurrence of disease. The occurrence of disease like bacterial infection, water borne diseases and other infections among primary school children is caused by [poor personal hygiene practices. There is no difference in the personal hygiene practices and occurrence of diseases among private and public primary school children. It can be concluded that both public and private primary school children practice good personal hygiene. The following were the recommendations; educational authorities can develop and adopt policies and guidelines that will make way to adequate access to resources, items and opportunities to maintain personal hygiene at school and home. Schools should provide hygiene education to kindergarten and early grade school children to supplement the training provided by parents and guardians to ensure that all children at an appropriate age learn how to protect themselves and others from preventable exposure to illness and other hygienic hazards. School based health children education program may be useful effort. The role of parent-teacher association should be emphasized where teachers and parents play a pivotal role in personal hygiene of the children.

CHAPTER ONE

INTRODUCTION

This study investigated the personal hygiene practices and the occurrence of diseases among primary school children in Makindye municipality, Kampala, Uganda. This chapter presents the background of the study, the statement of the problem, purpose of the study, objectives, research questions, hypothesis, scope and significance of the study.

1.1 Background to the study

The background of the study presents the historical, theoretical, conceptual and contextual perspectives.

1.1.1 Historical Perspective

The concept of hygiene dates back to the time when first man has moved into the caves to protect himself from the forces of nature that acts against his survival. The word hygiene comes from Hygeia, the Greek goddess of health (Beumer, Stanwell Smith R, Bloomfield SF, 2009).

Globally, since the arrival of the Industrial Revolution and the discovery of the germ theory of disease in the second half of the nineteenth century, hygiene and sanitation have been at the forefront of the struggle against illness and disease. Elaborate codes of hygiene can be found in several Hindu texts, such as the Manusmriti and the Vishnu Purana. Bathing is one of the five Nitya karmas (daily duties) in Hinduism, and not performing it leads to sin. Regular bathing was a hallmark of Roman civilization. Elaborate baths were constructed in urban areas to serve the public, who typically demanded the infrastructure to maintain personal cleanliness. The complexes usually consisted of large swimming pool-like baths, smaller cold and hot pools, saunas, and

spa-like facilities where individuals could be depilated, oiled, and massaged. Water was constantly changed by an aqueduct-fed flow (Prüss-Üstün et al, 2008).

Between 1550-1200B.C., the Ancient Israelites took a keen interest in hygiene. Moses gave the Israelites detailed laws governing personal cleanliness. He also related cleanliness to health and religious purification. Biblical accounts suggest that the Israelites knew that mixing ashes and oil produced a kind of hair gel. Records show that ancient Egyptians bathed regularly. The Ebers Papyrus, a medical document from about 1500 B.C describes combining animal and vegetable oils with alkaline salts to form a soap-like material used for treating skin diseases, as well as for washing. Public baths began in Greece in the sixth century B.C., where men and women washed in basins near places of exercise. The Ancient Greeks also start using chamber pots. In 400A.D. Medieval Britain, the population had begun various habits to keep their teeth clean. This included rinsing your mouth out with water, or a mixture of vinegar and mint, to remove gunk. Bay leaves soaked in orange flower water were also used, and the teeth would often be rubbed with a clean cloth too (Aiello AE, Larson EL, Sedlak R., 2008).

In the late 19th century, only the elite in Western cities typically possessed indoor facilities for relieving bodily functions. The poorer majority used communal facilities built above cesspools in backyards and courtyards. This changed after Dr. John Snow discovered that cholera was transmitted by the fecal contamination of water. Though it took decades for his findings to gain wide acceptance, governments and sanitary reformers were eventually convinced of the health benefits of using sewers to keep human waste from contaminating water. This encouraged the widespread adoption of both the flush toilet and the moral imperative that bathrooms should be indoors and as private as possible (Philippe Braunstein et al, 1988).

In Africa, during the 18th century Egyptian played a key role in the production of cosmetic and hygienic practices. A preserved traveler's box from Egypt's 18th Dynasty reveals their priorities: pumice, tubes of eye paint and a comb were featured as contents (Smith, 2008). The Egyptians also noticed that using normal ash and fat-based soap on their hair left an unsightly dull residue. They added citrus juice to soap to cut through the oil on the scalp and received shiny and fragrant hair as a result. Thus, the first rudimentary shampoo was born. According to Curtis (2007), ancient Egyptians stressed the importance of hygiene. Herodotus described how the Egyptians, and especially the priests, washed frequently. They associated water with health and life because they relied on the river Nile for so many things, for example the irrigation of their crops. Egyptians also used cosmetics regardless sex and social status for both aesthetic and therapeutic reasons. Oils and unguents were rubbed into the skin to protect it from the hot air. Most frequently used were white make-up, black make-up made with carbon, lead sulfide or manganese oxide and green make-up from malachite and other copper based minerals. Red ochre was ground and mixed with water, and applied to the lips and cheeks, painted on with a brush. Henna was used to dye the fingernails yellow and orange (Alfredo, G. T., 2004).

Egyptian perfumes were famous throughout the Mediterranean. The perfumes were mostly based on plants: the roots, blossoms or leaves of henna, cinnamon, turpentine, iris, lilies, roses, bitter almonds and others were soaked in oil and sometimes cooked. The essence was extracted by squeezing, and oil was added to produce liquid perfumes, while creams and salves were the result of adding wax or fat (Bloomfield, Exner, Signorelli, et.al. 2012). Many perfumes had more than a dozen ingredients. For soap Egyptians used natron, a paste containing ash or clay, which was often scented, and could be worked into a lather. The soap-like material was used for treating skin diseases, as well as for washing. Walking barefoot, as the Egyptians usually did, the feet got dusty, which, as the compacted earth floors of their houses were no different from the ground outside, probably did not matter much. Still, the better-off Egyptians

had wooden or clay foot baths for washing their feet, generally both at the same time; the laver on the right is exceptional, having space for one foot only. Most Egyptians were content with cleaning themselves by aspersion or by a dip in a canal or the river. The Egyptians had wash basins and may have filled them with a natron and salt solution from jugs with spouts and used sand as a scouring agent (Aiello AE, Coulborn RM, Perez V, Larson EL, 2008). They washed after rising and both before and after the main meals, but one may assume that their ablutions were mostly perfunctory. As mouth wash they used another solution called *bed*. The important upper-class Egyptians attached to cleanliness is reflected by the fact that the royal supervisor over the laundry was a prominent personality at court.

In East Africa, documented evidence of personal hygiene was influenced by Christian missions, colonial education and branding in the marketplace. In particular, Melvin Santer, (2009) argued that changing popular manners, hygienic practices and self-image became bound up with by the importation of soaps from the Far East (Bloomfield S. F. et. al. (2009). British and German colonial civilization created strict regulations concerning domestic and personal cleanliness, the disposal of the dead, the elimination of human and animal waste, and other forms of public sanitation. People were argued to maintain good health through a personal regimen that included adherence to a diet that was determined by the individual's work and climate, regular exercise, sufficient sleep, daily washing, daily bowel evacuation, and weekly bathing. Central to this writing was the idea that balance diet, exercise, and cleanliness was pleasing to God (Smith, 2008). The German colonial government developed rules of etiquette that required restriction of public spitting, use of handkerchiefs, and strict toilet practices in Tanganyika and the Island of Zanzibar (present day Tanzania) in 1898.

In Uganda, before the colonial rule, efforts ranging from coercion to persuasion in villages were made by chiefs and other local leaders to encourage citizens to build, maintain, and use latrines, keep themselves and their environment clean, and use clean

sources of water. From the 1900 to the 1960's, Uganda was no different from most other countries under a colonial government who held sanitation and hygiene high on their political and social agendas. First, keeping proper hygiene meant that the local population would be less exposed to tropical and common diseases (Smith, 2008). Secondly, with good hygiene, the indigenous population would become stronger and healthier, thus a better source of labour and income generation. And thirdly, good personal hygiene was a sign of 'civilizing' the country and, just as importantly, it went hand in hand with Christian ideals of cleanliness being next to godliness. Also in order to get the local people to 'understand' how and why to keep clean, ministries were established, public-health rules written and made official in Parliament, and inspectors appointed to enforce the standards.

On the occurrence of disease, the manifestation of both arteriosclerosis and cardiac disease was observed in mummies of ancient Egypt. Ötzi the Neolithic Iceman who lived around 3300 BC was found to have arthritis. At the beginning of the twentieth century, infectious diseases were the leading cause of death worldwide. In the United States and most of Western Europe, three diseases, tuberculosis, pneumonia, and diarrheal disease, caused 30% of deaths (Eppig, Fincher and Thornhill (2010). By the end of the twentieth century, most of the developed world, mortality from infectious diseases had been replaced by mortality from chronic illnesses such as heart disease, cancer and stroke. In Africa, G. W. Hartwig and K.D. Patterson (2008), asserted that it was possible to reconstruct some disease processes that affected African populations and it brought to light the fact that Eurasian diseases had been brought to Africa in the course of the eras of slave trade and colonial conquests. In Uganda, like the rest of Sub Saharan Africa, the burden of diseases has historically been high, particularly due to the high burden of infectious diseases. Maternal and neonatal complications, diarrheal diseases, pneumonia, and malnutrition are drivers of 'health loss', particularly in children were the commonly prevalent diseases that caused the highest mortality (Gangestad and Buss, 2009).

1.1.2 Theoretical Perspective

The study was guided by Personal Behavior theory by Melvin Santer (2009), which holds that diseases result from wrong personal behavior. It was democratically independent since it gave responsibility to individuals to control their own lives (Glanz and Rimer, 2009). In this formulation the source of the disease was not tied up with the mysterious ways of God, instead people caused their own disease by living fully unhealthy. Hence, improper diet, lack of exercise, poor hygiene and emotional tension become the focus of preventive actions. This theory does not blame the poor for the illness and in many aspects; it was homage to middle-class life. According to the personal behavior theory, health-related behavior is one of the most important elements in people's health and well-being. Its importance has grown as sanitation has improved and medicine has advanced (Cummings et al, 2010). Diseases that were once incurable or fatal can now be prevented or successfully treated, and health-related behavior has become an important component of public health. The improvement of health-related behaviors is, therefore, central to public health activities.

Behavioral factors play a role in each of the twelve leading causes of death, including chronic diseases such as heart disease, cancer, and stroke, which are the major causes of death in the United States and other developed countries. The most common behavioral contributors to mortality, or death, in 1990 included the use of alcohol, tobacco, firearms, and motor vehicles accident; diet and activity patterns; sexual behavior; and illicit use of drugs. Behaviors such as these are thought to contribute to almost half of the deaths in the United States. (Kasl and Cobb, 2008).

The last two decades of the twentieth century saw a rising interest in preventing disability and death through changes in health-related behaviors, particularly changes in lifestyle habits and participation in screening programs (Gochman, 2007). Much of this interest was stimulated by the change in disease patterns from infectious to chronic diseases as leading causes of death, combined with the aging of the population, rapidly

escalating health care costs, and data linking individual behaviors to increased risk of morbidity and mortality. The AIDS (acquired immunodeficiency syndrome) epidemic also contributed.

1.1.3 Conceptual perspective

Hygiene is a set of practices performed for the preservation of health. According to the World Health Organization (WHO, 2008), hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. Whereas in popular culture and parlance it can often mean mere 'cleanliness', hygiene in its fullest and original meaning goes much beyond that to include all circumstances and practices, lifestyle issues, premises and commodities that engender a safe and healthy environment (Irish, Kline, Gunn, et al, 2014). While in modern medical sciences there is a set of standards of hygiene recommended for different situations, what is considered hygienic or not can vary between different cultures, genders and age groups. Some regular hygienic practices may be considered good habits by a society while the neglect of hygiene can be considered disgusting, disrespectful or even threatening (Beumer et al, 2008).

Personal hygiene may be described as the principle of maintaining cleanliness and grooming of the external body. People have been aware of the importance of hygiene for thousands of years (Bloomfield et al, 2009). The ancient Greeks spent many hours bathing, using fragrances and make up in an effort to beautify themselves and be presentable to others. Maintaining a high level of personal hygiene helps to increase self-esteem and confidence, while minimizing the chances of developing imperfections. Failure to keep up a standard of hygiene can have many implications. Not only is there an increased risk of getting an infection or illness, but there are many social and psychological aspects that can be affected (Stanwell and Bloomfield, 2009). Poor personal hygiene, in relation to preventing the spread of disease is paramount in preventing epidemic or even pandemic outbreaks. To engage in some very basic

measures could help prevent many coughs and colds from being passed from person to person.

In this study, personal hygiene includes hand washing, dental and oral hygiene, laundry hygiene, bathroom and toilet hygiene, food and kitchen hygiene, bodily hygiene as well as water treatment and care. Occurrence of diseases refers to the number of times the diseases exists or happens on the individual. In this study, occurrence of diseases includes the contraction, spread and incidence of common diseases, including the number of people affected by infectious and parasitic diseases, and the rate of spread of common diseases like diarrhea, malaria, typhoid and cholera among others.

1.1.4 Contextual perspective

All over the world, approximately four (4) billion cases of diarrhea happen each year, causing 2.2 million deaths, mostly among children under the age of five (WHO, 2010) and diarrhea remains the biggest killer of children under five on the African continent (WaterAid, 2010). Deaths that is preventable up to 90% through access to sanitation, hygiene education and clean water (MoWE, 2009). In Uganda, in 2010 approximately 32% and 27% of Ugandans in rural and urban areas respectively did not have access to decent place of human waste disposal and continued to practice open defecation and the in primary schools countrywide the pupil to stance ratio stood at 47:1 in 2009 (MoH, 2008). Also on average 78% of Ugandans did not wash hands during critical times which increased the likelihood of diarrhea and other related health burden (WaterAid, 2010).

In Kampala, slum settlements are characterized by extreme poverty, lack of property tenure, lack of services and infrastructure and an informal economy. There has been failure by urban local authorities to enforce development control and to provide effective municipal services due to corruption, low revenue collections and poor civic competence among the population (Isunju et al, 2014). In most cases, shared human

excreta facilities provide an uncertain degree of improvement in sanitation. In Kampala, majority (70%) of the urban poor use shared latrines; with less than half (47%) of the latrines clean enough to be used and another 45% of the facilities being abandoned. The various sanitation initiatives in urban poor areas have not emphasized improved use, cleaning and maintenance of the available facilities; emphasis seems to be on mere sanitation infrastructure (Tumwebaze et al, 2015).

The WHO/UNICEF (2015) report on the trend in sanitation coverage in Uganda shows that on-site sanitation facilities are predominant and mainly consist of traditional pit latrines of varying standards. Morella et al. (2016) evaluated progress from open defecation to use of on-site sanitation in Uganda and found that it meets six sanitation indicators in the sanitation index. This index is a simple scoring system used to evaluate the progress of reforms and focuses specifically on on-site sanitation systems. The six main indicators are: existence of a hygiene promotion programme; existence of an accepted definition of sanitation; existence of a specific fund for sanitation; involvement of utilities in on-site sanitation; and clear cost recovery policies for on-site sanitation.

The practice of open defecation is generally declining in most parts of Kampala, and Makindye Municipality in particular, this practice remains quite widespread in slum areas in the municipality, and is still practiced by about 23% of the population (WHO/UNICEF 2015). During the period 1990–2015, there were notable demographic changes in Makindye Municipality where the population doubled during this period but access to improved sanitation has merely kept pace with population growth (Tumwebaze IK et al. (2015).Kampala city set targets of 80% sanitation coverage by 2015. However, different figures on progress towards this target have been presented by key national and international actors in the sector, indicating massive under-performance, particularly in Makindye Municipality.

1.2 Problem Statement

Children's ability to learn is affected by inadequate water, sanitation and hygiene conditions in several ways. These include infectious diseases which affect hundreds of millions of school-age children, long-term exposure to contaminants in water, diarrheal diseases and malaria infections, all of which force many school children to be absent from school. Improvement in personal hygiene practices can significantly reduce the incidence of childhood infectious disease. Many households and schools, particularly those in rural and slum areas, often completely lack safe drinking-water and sanitation and hand washing facilities; alternatively, where such facilities do exist they are often inadequate in both quality and quantity. Schools with poor water, sanitation and hygiene conditions, and intense levels of person-to-person contact, are high-risk environments for children and staff, and exacerbate children's particular susceptibility to disease infection (WHO/UNICEF, 2015).

Proper personal hygiene is the most effective and easiest way to control the occurrence of many diseases, unfortunately many people do not have proper personal hygiene. Only about half of the schools in low-income countries have provided access to water and sanitation facilities to their students. This means millions of children go to school either with the water that they will consume for the rest of the day, or with no water at all. According to Water Aid (2010), many of these children lack access to safe water at home too, often suffering from chronic diarrhea and are at risk to intestinal parasitic infestation. The two biggest killers of children in the developing world today are diarrheal disease and respiratory tract infections. However, there are no studies evaluating the connection between personal hygiene practices and the occurrence of diseases among school children. This study therefore explores the relationship between personal hygiene practices and the occurrence of diseases.

1.3 Purpose of the Study

This study investigated the relationship between personal hygiene and the occurrence of diseases among primary school children in Makindye Municipality, Kampala, Uganda.

1.4 Specific Objectives

The study aimed at achieving the following objectives;

- i. To identify the various personal hygiene practices among school children.
- ii. To examine the occurrence of diseases associated with personal hygiene practices among school children
- iii. To establish the relationship between personal hygiene and occurrence of diseases among school children
- iv. To find out the difference of personal hygiene practices and occurrence of diseases between public and private primary school children

1.5 Research questions

The study answered the following research questions;

- i. What are the various personal hygiene practices among school children?
- ii. What is the occurrence of diseases associated with personal hygiene practices among school?
- iii. What is the relationship between personal hygiene and occurrence of diseases among school children?
- iv. What is the difference in personal hygiene practices and the occurrence of diseases among public and private primary school children?

1.6 Null Hypotheses

Ho₁: There is no significant relationship between personal hygiene and occurrence of diseases among school children.

H0₂: There is no difference in the personal hygiene practices and occurrence of diseases among public and private primary school children

1.7 Scope of the Study

1.7.1 Geographical Scope

The study was carried out in selected public and private primary schools in Makindye Municipality, Kampala, Uganda. It's a densely populated, mainly low income neighborhood. Sanitation and hygiene in this area is a huge challenge, given the fact that there are many people living in the area with, inadequate sanitation facilities. Six primary schools were selected, with three public primary school and three private primary schools, as a way of acquiring a balanced picture of the hygiene situation in both schools.

1. 7.2 Content Scope

The study focused on examining the various personal hygiene practices and the occurrence of diseases among primary school children in Makindye Municipality, Kampala, Uganda

1.7.3 Theoretical scope

The study was guided by the Personal Behavior Theory of Melvin (2009), which holds that diseases result from wrong personal behavior, a democratic andante authoritarian in intent since it gave responsibility to individuals to control their own lives (Glanz and Rimer, 2009).

1.8 Significance of the Study

The findings of this study will benefit the following stakeholders:

School administrators/Teachers

This study will help the school administrators and teachers in understanding the personal hygiene practices of their pupils. This will enable the school administrators and teachers to plan activities to sensitize the pupils about personal hygiene to avoid acquiring diseases.

Parents

The findings of the study will generate new information about the real dangers of poor hygiene in the environment. This helps to shape parents' attitudes and teach their children on proper hygiene practices.

Pupils

The study will enlighten the pupils about the importance of proper hygiene practices. With this information pupils will be in better position to stay healthy and perform better in class.

Academicians

The findings of the study will contribute to new knowledge to the existing one. It will also serve as a reference for future researches in relation to personal hygiene and occurrence of diseases.

Researchers

It will benefit the researcher by helping her acquire practical research skills and also served as a partial requirement for the award of a Master's degree of Education (in Biology) of Kampala International University.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents review of the theories which are relevant to this study. It explores the findings of the various researches who have studied the same or related topics and analyze the applicability of their findings. It describes the conceptual framework and the gaps identified.

2.1 Theoretical Review

This study was based on Personal Behavior Theory by Melvin Santer (2009). This theory stated that diseases result from wrong personal behavior. It was democratically independent since it gave responsibility to individuals to control their own lives. In this formulation the source of the disease was not tied up with the mysterious ways of God, instead people caused their own disease by living fully unhealthy. Hence, improper diet, lack of exercise, poor hygiene and emotional tension become the focus of preventive actions. This theory does not blame the poor for the illness and in many aspects; it was homage to middle-class life. According to the personal behavior theory, health-related behavior is one of the most important elements in people's health and well-being. Its importance has grown as sanitation has improved and medicine has advanced (Cummings et al, 2010). There are many questions about health-related behavior, or health behavior, that are not yet well understood. Public health workers and scientific researchers continue to attempt to understand the nature and causes of many different health behaviors (Kasl and Cobb, 2008). Health behavior encompasses a large field of study that cuts across various fields, including psychology, education, sociology, public health, epidemiology, and anthropology.

In the broadest sense, health behavior refers to the actions of individuals, groups, and organizations as well as the determinants, correlates, and consequences of these actions which include social change, policy development and implementation, improved coping skills, and enhanced quality of life. This is similar to the working definition of health behavior that David Gochman (2007) proposed, which includes not only observable, overt actions but also the mental events and emotional states that can be reported and measured. Gochman (2007) defined health behavior as those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behavior patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement. Interestingly, this definition emphasizes the actions and the health of individuals. A public health perspective, in contrast, is concerned with individuals as part of a larger community. These perspectives are interrelated, as the behaviors of individuals determine many of the social conditions that affect all people's health.

No single theory or model dominates research or practice in health-related behavior. The most frequently mentioned theories of health behavior focus on a range of factors influencing behavior determinants, including factors within an individual (such as thoughts, feelings, and beliefs), factors in groups or relationships, and factors that exist in organizations, communities, and governments (such as structures, regulations, policies, and laws). The personal behavior model was originally developed to explain why people did or did not take advantage of preventive services such as disease screening and immunizations (Melvin, 2009). Its central thesis is that health behavior is determined by two interrelated factors: a person's perception both of the threat of a health problem and of his or her accompanying appraisal of a recommended behavior for preventing or managing the problem. The model works well, especially for early detection or for some conditions, such as infectious diseases, that people might find frightening, especially if they are uncertain about the effects of treatment methods.

The model concerns an individual's readiness to change, or to try to change, unhealthful behaviors. Its basic premise is that behavior change is a process and not an event, and that individuals are at varying levels of motivation, or readiness, to change (Cummings, 2010; Glanz and Rimer, 2009). This means that people at different points in the process of change can benefit from different programs for change, and the programs work best if matched to their stage of readiness. From this theory's perspective, people and their environments are thought to interact continuously. A basic premise of this theory is that people learn not only through their experiences, but also by watching the way other people act and the results they achieve. It also takes the view that, while people are influenced by the world around them, they can also actively change that world (Cummings, 2010). The theory provides a foundation for several strategies for behavior change, for example the use of role models who carry out a behavior and achieve good results.

Community organization articulates the process by which community groups identify problems or goals, mobilize resources, and develop ways to reach their goals. It includes several ways of bringing about change, including developing resources and skills; getting specialized help from outside experts; and social action, which involves people joining together for a cause, especially one that involves a particular group that is being greatly affected by a particular problem. The various theories of health-related behavior often overlap (Gochman, 2007). Not surprisingly, these explanations for behavior and models for change share several constructs and common issues.

One central idea that has gained wide acceptance is the simple notion that behavior change is a process, not an event, which is the major tenet of the stages of change model. It is important to think of the change process as one that occurs in stages (Glanz and Rimer, 2009). It is not a question of someone deciding one day to stop smoking and the next day becoming a nonsmoker for life. Likewise, most people won't be able to dramatically change their eating patterns all at once. The idea that behavior

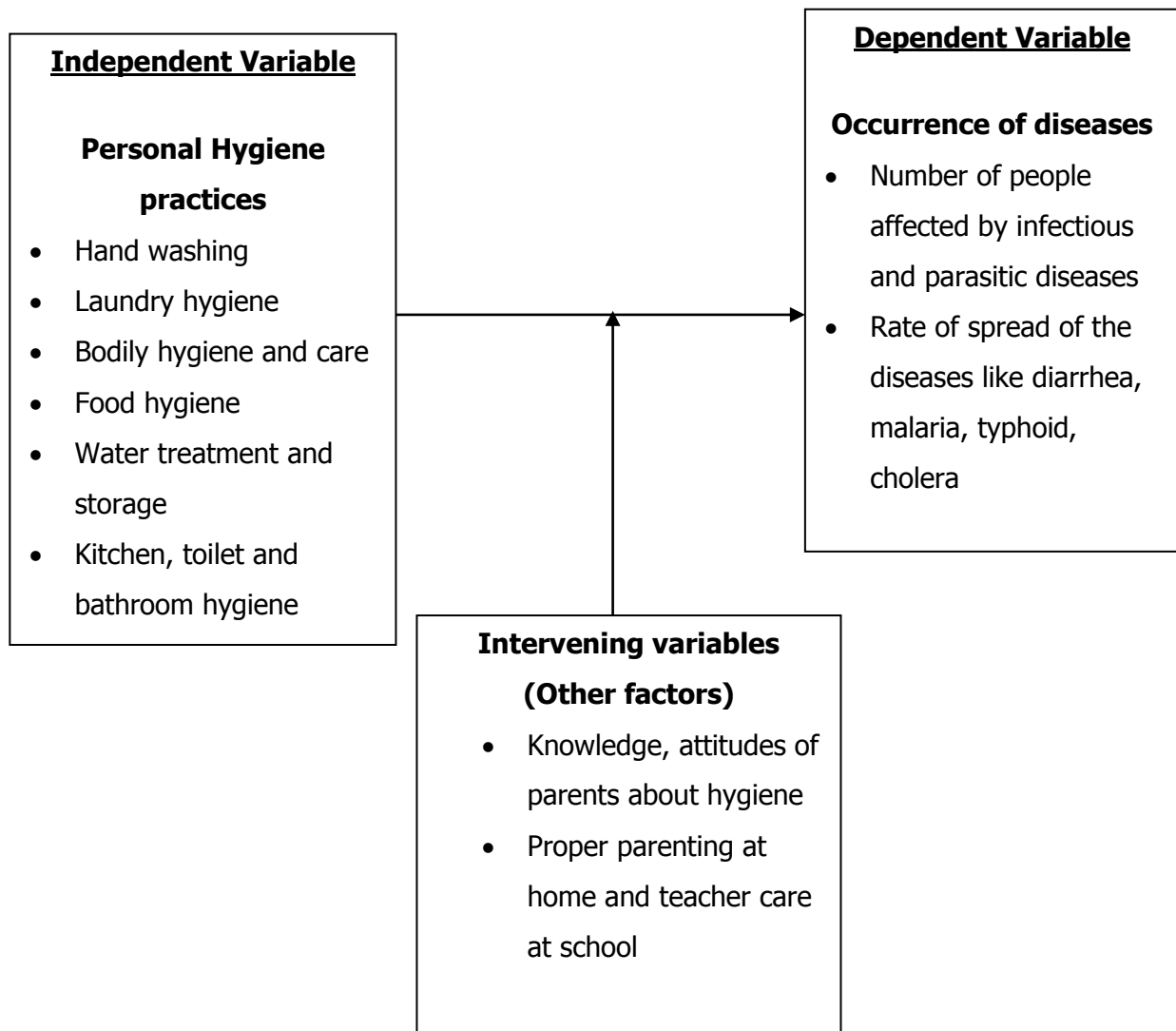
change occurs in a number of steps is not particularly new. In fact, various multistage theories of behavior change date back to the 1940s. This theory gained wider recognition toward the end of the twentieth century, however.

Even where there is good initial compliance to a health-related behavior change, a relapse to previous behavior patterns is very common. Undertaking a behavior change and maintaining the change, therefore, require different types of programs and self-management strategies (Glanz, 2007). For example, someone could quit smoking by going 'cold turkey,' but he or she will probably be tempted again, perhaps at a party where friends are smoking. Maintaining cessation involves developing self-management and coping strategies, as well as establishing new behavior patterns that emphasize perceived control, environmental management, and improved confidence in one's ability to avoid temptation. A model called the relapse prevention model focuses very specifically on this issue.

The concept of barriers to action, or perceived obstacles, is often mentioned in theories of health behavior. An extension of this concept involves what is known as 'decisional balance.' This idea is called the 'net benefits of action' in the health belief model and "pros minus cons" in the stages of change model (Cummings et al, 2010). These terms all reflect the idea that individuals engage in a relative weighing of the pros and cons of a prospective behavior change. This notion is basic to models of rational decision making, in which people intellectually think about the advantages and disadvantages of engaging in a particular action.

2.2 Conceptual Framework

The conceptual framework in this study examines the relationship between the variables in the study. It explores how the independent variable interacts with the intervening variable to influence or determine the dependent variable



Source: Adopted from Baigue, Long, Adak, O'Brien (2010)

Figure 1: The diagram shows the relationship between personal hygiene practices and occurrence of diseases

In the current study, the independent variable, which is personal hygiene practices (such as hand washing, laundry hygiene, bodily hygiene and care, food hygiene, water treatment and storage, kitchen, toilet and bathroom hygiene), works hand in hand with the intervening variables such as the knowledge and attitudes of parents about hygiene, and the proper parenting at home and teacher care at school, and together influence the dependent variable, which is case is the occurrence of diseases.

2.3 Related Studies

2.3.1 The Concept of Personal Hygiene

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 (domestic) and everyday life settings, hygiene practices are employed as preventative measures to reduce the incidence and spreading of disease (Aiello et al, 2008). 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. The terms cleanliness (or cleaning) and hygiene are often used interchangeably, which can cause confusion.

In general, hygiene mostly means practices that prevent spread of disease-causing organisms. Since cleaning processes (examples hand washing) remove infectious microbes as well as dirt and soil, they are often the means to achieve hygiene. Other uses of the term appear in phrases including: body hygiene, personal hygiene, sleep hygiene, mental hygiene, dental hygiene, and occupational hygiene, used in connection with public health. Hygiene is also the name of a branch of science that deals with the promotion and preservation of health, also called hygienic. Hygiene practices vary widely, and what is considered acceptable in one culture might not be acceptable in another (International Scientific Forum, 2007).

The human body provides protection against external environment pollutants to some extent. However, skin cracks and wounds can allow pathogens to enter the body. For this reason, personal hygiene is one of the most important practices in terms of protecting the body from diseases. Hygiene is a personal matter (Curtis and Cairn cross, 2009). Hygiene practices, taught during childhood by mothers, fathers or teachers, mostly through practicing, need to be continued by the individual after childhood. Correct adoption of these habits has a direct impact on a person's future health (Aiello AE, Larson EL, Sedlak R. (2008) Hygiene behavior includes hand hygiene, personal

care, home hygiene and food hygiene. Individual hygiene behaviors can be affected by many factors, including beliefs, values, habits, socio-economic and cultural factors, level of knowledge Personal preferences, family characteristics and physical and social characteristics of the work and living environments.

Therefore, the hygiene habits of each individual differ, meaning that these habits are unique to individuals (Curtis V, Cairncross S, 2009). The most important aspect of maintaining good health is good personal hygiene. Personal hygiene which is also referred to as personal care includes all of the following: Bathing and Showering, Hair care, Nail care, Foot care, Genital care, Dental care Personal hygiene is keeping the body clean, and helps prevent the spread of germs. Grooming is caring for fingernails and hair examples of these activities would be styling hair, shaving, trimming and painting fingernails. Maintaining good health also includes the following areas: Nutrition, Leisure/recreation opportunities, sleep, and exercise. As you can see, there are many factors that contribute to feeling and looking good. Feeling and looking good are important to each individual's emotional and physical wellbeing (Curtis V, Cairncross S, 2009).

Maintaining personal hygiene is necessary for many reasons; these can be personal, social, for health reasons, psychological or simply as a way of life. Essentially keeping a good standard of hygiene helps to prevent the development and spread of infections, illnesses and bad odors.

Personal Reasons

Many people, women in particular, are very conscious of their hygiene needs and practices. This can be a result of being taught of the importance from an early age, from being picked-on at school for head lice or similar, or as a way of making themselves more attractive to the opposite sex. Self-esteem, confidence and motivation can all be altered by our body image, often reflected on our ability to care for ourselves

and keep good hygiene practices. A bright white smile with clean and healthy teeth can endear people to us, whereas brown, unhealthy teeth can cause embarrassment and can alter our sense of well-being. Healthy hair, skin and nails are signs of a good well-balanced diet and can give us confidence in everyday life (Beumer R, 2008)

Social Reasons

Most people hate to be talked about, especially in a negative manner. By ensuring that our body is clean and well presented, we are more assured of projecting a positive body image that reflects our personalities. Children should be taught the importance of hygiene and how to achieve good hygiene very early to keep themselves and others healthy and to reduce the risk of being bullied at school (Aiello AE, 2008).

Health Reasons

If a person is due to go into hospital, sometimes that person becomes very aware of their hygiene. The thought of being vulnerable and exposed to strangers can cause the person to become very strict on their hygiene needs. If you have cut yourself, the wound should be cleaned and dressed suitably, this can help reduced the risk of infection and pain. Conditions such as head lice, athletes foot and other related diseases should be treated immediately to prevent further infections and spread to others. Hand washing cannot be emphasized enough as this simple action can prevent a plethora of illnesses and disorders. Many people forget to wash their hands after using the toilet or before handling foods; this deed can cause a great deal of illness and even death (Curtis, 2007).

Psychological Issues

By being well, clean and tidy, people can feel more confident, especially in social situations. Many job interviews and such like are highly dependent of hygiene as many decisions are made by first impressions within the first few minutes of meeting; these decisions are often made in the sub-conscious. Our chances of succeeding either in

work or social settings, or even with the opposite sex can be altered by our maintenance of hygiene. Maintaining hygiene practices helps to reduce the risks of ill health, but equally important affects how we and others perceive ourselves and can influence our levels of confidence and self-esteem which can affect many aspects of our lives (Bloomfield et al, 2008).

2.4 Personal Hygiene Practices

Hand Washing

Hand washing is the act of cleaning the hands with or without the use of water or another liquid, or with the use of soap, for the purpose of removing soil, dirt, and/or microorganisms. Medical hand hygiene pertains to the hygiene practices related to the administration of medicine and medical care that prevents or minimizes disease and the spreading of disease. The main medical purpose of washing hands is to cleanse the hands of pathogens (including bacteria or viruses) and chemicals which can cause personal harm or disease. This is especially important for people who handle food or work in the medical field, but it is also an important practice for the general public. People can become infected with respiratory illnesses such as influenza or the common cold, for example, if they don't wash their hands before touching their eyes, nose, or mouth (Bloomfield et al, 2008).

Indeed, the Centers for Disease Control and Prevention (CDC) has stated: 'It is well documented that one of the most important measures for preventing the spread of pathogens is effective hand washing.' As a general rule, hand washing protects people poorly or not at all from droplet- and airborne diseases, such as measles, chickenpox, influenza, and tuberculosis. It protects best against diseases transmitted through fecal-oral routes (such as many forms of stomach flu) and direct physical contact (such as impetigo).(Curtis and Cairncross, 2007).

This hygienic behavior has been shown to cut the number of child deaths from diarrhea (the second leading cause of child deaths) by almost half and from pneumonia (the leading cause of child deaths) by one-quarter. There are critical times in washing hands with soap and/or using of a hand antiseptic related to fecal-oral transmission: after using a bathroom (private or public), before eating and before preparing food or handling raw meat, fish, or poultry, or any other situation leading to potential contamination .To reduce the spread of germs, it is also better to wash the hands and/or use a hand antiseptic before and after tending to a sick person.(Muegge OJ, 2014).

The control of staphylococcal infections in hospitals has been found that the greatest benefit from hand-cleansing came from the first 20% of washing, and that very little additional benefit was gained when hand cleansing frequency was increased beyond 35%.Washing with plain soap results in more than triple the rate of bacterial infectious disease transmitted to food as compared to washing with antibacterial soap. Comparing hand-rubbing with alcohol-based solution with hand washing with antibacterial soap for a median time of 30 seconds each showed that the alcohol hand-rubbing reduced bacterial contamination 26% more than the antibacterial soap. But soap and water is the more effective than alcohol-based hand rubs for reducing H1N1 influenza A virus and Clostridium difficult spores from hands (Muegge OJ, 2014).

Food hygiene at home

Food hygiene is concerned with the hygiene practices that prevent food poisoning. The five key principles of food hygiene, according to WHO (2012), are:

- Prevent contaminating food with pathogens spreading from people, pets, and pests;
- Separate raw and cooked foods to prevent contaminating the cooked foods;
- Cook foods for the appropriate length of time and at the appropriate temperature to kill pathogens;

- Store food at the proper temperature; and
- Use safe water and raw materials.

Household water treatment and safe storage

Household water treatment and safe storage ensure drinking water is safe for consumption. Drinking water quality remains a significant problem, not only in developing countries but also in developed countries; even in the European region it is estimated that 120 million people do not have access to safe drinking water. Point-of-use water quality interventions can reduce diarrheal disease in communities where water quality is poor, or in emergency situations where there is a breakdown in water supply. Since water can become contaminated during storage at home (e.g. by contact with contaminated hands or using dirty storage vessels), safe storage of water in the home is also important. (Glanz, K., and Rimer, B. K. 2009).

Hygiene in the kitchen, bathroom and toilet

Routine cleaning of contact (hand, food and drinking water) sites and surfaces (such as toilet seats and flush handles, door and tap handles, work surfaces, bath and basin surfaces) in the kitchen, bathroom and toilet reduces the risk of spread of germs. The infection risk from the toilet itself is not high, provided it is properly maintained, although some splashing and aerosol formation can occur during flushing, particularly where someone in the family has diarrhea. Germs can survive in the scum or scale left behind on baths and wash basins after washing and bathing (Herbst S, Fayzieva D, Kistemann, 2008).

Water left stagnant in the pipes of showers can be contaminated with germs that become airborne when the shower is turned on. If a shower has not been used for some time, it should be left to run at a hot temperature for a few minutes before use. Thorough cleaning is important in preventing the spread of fungal infections. Molds can live on wall and floor tiles and on shower curtains. Mold can be responsible for

infections, cause allergic responses, deteriorate/damage surfaces and cause unpleasant odors. Primary sites of fungal growth are inanimate surfaces, including carpets and soft furnishings. Air-borne fungi are usually associated with damp conditions, poor ventilation or closed air systems. Cleaning of toilets and hand wash facilities is important to prevent odors and make them socially acceptable. Social acceptability is an important part of encouraging people to use toilets and wash their hands. (Beumer et al, 2003)

Laundry hygiene

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. Micro-organisms can also be transferred between contaminated and uncontaminated items of clothing and linen during laundering. Experience in the USA suggests that these strains are transmissible within families, but also in community settings such as prisons, schools and sport teams. Skin-to-skin contact (including un abraded skin) and indirect contact with contaminated objects such as towels, sheets and sports equipment seem to represent the mode of transmission (Vuan LT. Hanoi medical university, 2012).

Two processes are considered suitable for hygienic cleaning of clothing and linen: Washing or laundering at 60 °C (140 °F) or above Washing or laundering at 30 °C (86 °F) - 40 °C (104 °F) using a bleach-based product: This produces decontamination of fabrics by a combination of physical removal and chemical inactivation. However, some types of fungi and viruses that are harder to inactivate, may not be removed. Washing at temperatures of 40 °C (104 °F) or below with a non-bleach product is considered to carry a risk of inadequate decontamination. (Bloomfield SF, Cookson B et al, 2006)

Medical hygiene at home

Medical hygiene pertains to the hygiene practices that prevents or minimizes disease and the spreading of disease in relation to administering medical care to those who are infected or who are more at risk of infection in the home. Across the world, governments are increasingly under pressure to fund the level of healthcare that people expect. Care of increasing numbers of patients in the community, including at home is one answer, but can be fatally undermined by inadequate infection control in the home. Increasingly, all of these at-risk groups are cared for at home by a caregiver who may be a household member who thus requires a good knowledge of hygiene. People with reduced immunity to infection, who are looked after at home, make up an increasing proportion of the population currently up to 20%. The largest proportion are the elderly who have co-morbidities, which reduce their immunity to infection. It also includes the very young, patients discharged from hospital, taking immuno-suppressive drugs or using invasive systems. Antiseptics may be applied to cuts, wounds abrasions of the skin to prevent the entry of harmful bacteria that can cause sepsis. Day-to-day hygiene practices, other than special medical hygiene procedures are no different for those at increased risk of infection than for other family members. The difference is that, if hygiene practices are not correctly carried out, the risk of infection is much greater. (WHO/UNICEF Joint Monitoring Programme (JMP), (2015).

Body Hygiene

Body hygiene pertains to hygiene practices performed by an individual to care for one's bodily health and well-being, through cleanliness. Motivations for personal hygiene practice include reduction of personal illness, healing from personal illness, optimal health and sense of well-being, social acceptance and prevention of spread of illness to others. Personal hygiene practices include: seeing a doctor, seeing a dentist, regular washing/bathing, and healthy eating. Personal grooming extends personal hygiene as it pertains to the maintenance of a good personal and public appearance, which need not necessarily be hygienic. Body hygiene is achieved by using personal body hygiene

products including: soap, hair shampoo, toothbrushes, tooth paste, cotton swabs, antiperspirant, facial tissue, mouthwash, nail files, skin cleansers, toilet paper, and other such products (Irish, Leah A et al, 2014).

2.5 Occurrence of Diseases Among Primary School Children

According to the WHO (2008) report on the global burden of disease, worldwide infectious and parasitic diseases account for 9.5 million (16.2%) deaths a year. The report shows that, of the top 10 leading causes of death worldwide, lower respiratory tract and diarrheal infections rank 3rd and 5th respectively, accounting for 7.1% and 2.2% of all deaths. Of the 10.4 million deaths among children under 5 years old, diarrheal diseases and neonatal infections (mainly sepsis) account for 17% and 9% of deaths, respectively. Although the reduction in intestinal disease mortality in the developed countries represents one of the great achievements in public health in the last century. In these regions, the pattern of intestinal diseases has changed, and the overall incidence, of typhoid and cholera was less but more viral infections and an increasing range of emerging infections of *Campylobacter* species, *Cryptosporidium parvum* and Human immune virus.

The significant decline in mortality due to intestinal diseases is, however, predominantly an achievement of the developed world. The WHO 2008 report assesses that, of the 10.4 million deaths in children aged under 5 years worldwide, 4.7 million (45%) occur in the African region, and an additional 3.1 million (30%) occur in the South East Asia Region (WHO, 2008). The death rate per 1000 children aged 0-4 years in the African region is almost double that of the region with the next highest rate, the Eastern Mediterranean and more than double that of any other region. The two leading communicable disease killers in all regions are diarrheal disease and respiratory infections. In Africa and the Eastern Mediterranean diarrheal diseases account for 8.9% and 5.8% of total deaths compared with 0.4% and 1.1% for Europe and America, respectively. In developing countries introduction of oral rehydration therapy has led to

a marked reduction in deaths caused by diarrhea and cholera among children due to poor hygiene and lack of safe water. In the South East Asia region the annual diarrheal episodes range from 0.7 to 3.9 per child.

A report prepared for the WHO by Prüss-Üstün et al (2008) estimates that, globally, poor water, sanitation and hygiene account for at least 9.1% of the global disease burden or 6.3% of all deaths. Children, particularly those in developing countries, suffer a disproportionate share of this burden, as the fraction of total deaths or disability-adjusted life years (DALYs) attributable to unsafe water, inadequate sanitation or improper hygiene is more than 20% in children up to 14 years of age. Although a substantial proportion of this estimated reduction is made up, not only of diarrheal disease reduction but also conditions such as malaria, lymphatic filariasis and schistosomiasis which are water source-related and would derive from public-funded improvements in sanitation and water supply. The report estimates that diarrheal diseases improvements in the provision of sanitation and water supply would produce, respectively, a 32% and 25% reduction in diarrheal disease burden, improvements in water quality which is achievable by promotion of home water treatment and safe storage as well as better control of public supply. The promotion of other hygiene interventions including, but not limited to, hand washing in the home and community could produce, respectively, 31% and 37% reduction in diarrheal disease burden (Herbst, Fayzieva, and Kistermann, 2008).

In making the assessments, Prüss-Üstün et.al. (2008) gauge that the 9.1% of the disease burden attributed to unsafe water, inadequate sanitation or insufficient hygiene may be an underestimate. Diseases that are unquantifiable include some that are likely to be significant at a global scale including legionellosis, leptospirosis, conjunctivitis and otitis, which are mostly respiratory infections related to hygiene. The report also concludes that water, sanitation and hygiene interventions interact with one another, and that the impact of each may vary widely according to local circumstances. This

means that prioritizing investment in disease reduction needs to be based on local conditions and evidence from implementation rather than from pooled data, such as the average impacts defined above. The WHO (2008) report on the global burden of disease, contains region by region statistics on the incidence of specific IDs, using data for 2004.

Assessing the strength of the association between hygiene and the prevention of specific diseases or groups of diseases comes from a range of sources including epidemiological data and micro-biological/biological plausibility data (Aiello et al, 2008). It is becoming increasingly accepted that since transmission of pathogens is highly complex, involving many different pathogens each with multiple routes of spread, infection control policies and guidelines must be based on the totality of the evidence including microbiological and other data. This is particularly important for home hygiene, for which little or no intervention data is available and where it is virtually impossible to isolate the effects of specific hygiene procedures (hand washing, surface hygiene, laundry, washing and bathing and others.

Infectious intestinal diseases, the link between poor hygiene and spread of disease is well established and is supported by epidemiological as well as microbiological and other data (Bloomfield et al, 2007). The reduction in risk of diarrhoeal disease by ensuring safe faeces disposal comes from intervention studies that assess the impact of improved sanitation. With regard to water quality, the 2005 systematic review concluded that diarrhoeal episodes can be reduced by 25% through improving water supply and by 39% via household water treatment and safe storage. A review of randomized controlled trials confirmed the key role that point-of-use water quality interventions could play in reducing diarrhoea episodes, reporting a reduction in diarrhoeal disease morbidity by roughly half, on average, with some studies resulting in disease reductions of 70% or more.

(Fewtrell, Kaufmann, Kay et. al.)

There is good evidence that handling of food by the family (either during preparation in the kitchen, or at mealtimes), with hands contaminated by faecal pathogens, is a frequent cause of infectious intestinal diseases. Infection can also arise from pathogens which enter the food chain from animal and other sources during preparation for retail sale to the public (Le Baigue et al, 2010). There are various factors critical for a large proportion of food borne diseases, including use of contaminated raw food ingredients, contact between raw and cooked foods, and poor personal hygiene during food handling.

In low income communities in developing countries, limited access to sanitation means that rates of direct hand-to-mouth transmission from faeces are likely to be very high relative to other routes of transmission (Aiello et al, 2008). The strong causal relationship between hand hygiene and gastrointestinal disease risk has also been demonstrated by meta-analysis studies of community-based interventions. Curtis and Cairncross (2007) estimated a 42% to 47% reduction in diarrhoeal diseases associated with hand washing. Fewtrell et al (2007) showed a 44% reduction in diarrhoeal illness associated with hand washing. In a study by Aiello et al, (2008) estimated it is that hand washing with soap could produce a 39% reduction in gastrointestinal illness.

For respiratory diseases the link between poor hygiene and spread of disease is also supported by both epidemiological and microbiological data. The data indicate three possible routes of transmission of respiratory viruses, namely droplet transmission, airborne transmission which are drawn down into the lungs where they infect the lung tissue and contact transmission individuals become infected if they rub their eyes or nose with contaminated hands. It is probable that colds and flu are transmitted by all three pathways, but there is considerable disagreement as to the relative importance of each pathway, which may differ for different viruses (Le Baigue et al, 2010). The link between poor hygiene and the spread of respiratory diseases is supported by epidemiological data and also by a whole range of microbiological studies (Bloomfield et

al, 2007). In a study by Aiello et. al (2008), estimated that the reduction in respiratory illness associated with the pooled effects of hand hygiene (hand washing with soap, use of alcohol, handrubs) was 21%.

2.6 Summary of Gaps Identified

1. Most of the studies have been done on personal hygiene, knowledge and attitudes but on personal hygiene practices and occurrence of diseases. The literature and past studies on personal hygiene practices and occurrence of diseases was very scanty.
2. Within the context of Uganda, there was a scarcity of literature and past studies related to personal hygiene practices and occurrence of diseases. Most of the studies conducted were only on personal hygiene practices.
3. Most of the studies conducted were on the personal hygiene practices of primary school children in general. In this study the personal hygiene practices and occurrence of diseases was compared between public and private primary school children.
4. No studies on personal hygiene practices and occurrence of diseases were conducted in Makindye Municipality.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The chapter presents the research design, research population the sample size, sampling procedures, the research instrument, validity and reliability, data gathering procedures, data analysis, ethical consideration and limitations of the study.

3.1 Research Design

The study employed a descriptive correlational and descriptive comparative survey design, because it aims to test the relationship and difference between personal hygiene practices and the occurrence of diseases among primary school children. It also used quantitative approach using the researcher made questionnaire to gather the data.

3.2 Research population

A total of 600 respondents from both public and private primary pupils and teachers. There were 400 p.5 and p.6 pupils and 6 teachers from public primary schools and 188 p.5 and p.6 pupils and teachers from private primary schools.

3.3 Sample size

To determine the sample size, Krecjie and Morgan table was used. Table 3.1 shows the data.

Table 3.1: Population Size and Sample Size

Category	Population	Sample size	Sampling techniques
Teachers	12	12	Purposive sampling
Private Primary School Children	188	188	Purposive sampling
Public Primary school Children	400	192	Random Sampling
Total	600	392	

Source: Primary data, 2017

Based on the distribution of sample size in Table 3.1, six (6) teachers respondents were from public primary schools and six(6) teachers were from private primary schools. One hundred eighty eight (188) from private primary school and one hundred ninety two (192) were selected from public primary school. A total of three hundred ninety -two respondents.

3.4 Sampling Procedure

The following inclusion criteria were used to select the teachers and pupils from private primary school as respondents of the study through purposive sampling: the respondents were (1). Either male or female (2). Primary 5 and 6 pupils and teachers. Simple random sampling was used to select primary 5 and 6 pupils and teachers from public primary school. Questionnaires were distributed to qualified respondents.

3.5 Research Instruments

The research tools that were utilized in the study were the questionnaires which consist of section A which gather the demographic characteristics of the respondents. Section B is a 24 item questionnaires on the personal hygiene practices of pupils and Section C consist of 5 items on the occurrence of diseases. Section D consist of 7 items on the different diseases affecting school children.

The response mode of the questionnaire on both variables were indicated as frequently (3), sometimes (2) and never (1).

3.6 Validity and reliability of instruments

3.6.1 Validity

The questionnaires were given as given to the supervisor and other lecturers who are expert in the field to judge the validity of questions according to the objectives. After the assessment of the questionnaire, the necessary adjustments were made bearing in mind the objectives of the study. Then a content validity index (CVI) of 0.96 was obtained by using the following formula,

$$\text{CVI} = \frac{\text{Number of items rated as relevant}}{\text{Total items rated in the questionnaire}}$$
$$\text{CVI} = \frac{36}{40} * 100 = 0.9$$

3.6.2 Reliability

Cronbach Alpha was used to measure the reliability of non-standardized instruments. Cronbach Alpha was used to measure the reliability of the questionnaires and the results were : on the personal hygiene practices was 0.736, on occurrence of diseases was 0.823 and diseases affecting school children was 0.874 which was beyond acceptable level 0.70 and the findings regarding these are presented in table 3.2.

Table 3.2: Results of Reliability Test

No.	Dimensions	Cronbach's Alpha	No of Items
1.	Personal Hygiene practices	0.736	24
2.	Personal hygiene practices	0.823	5
3.	Diseases affecting school children	0.874	7

Source: survey research 2017

3.7 Data Gathering Procedure

3.7.1 Before Data Gathering

An introduction letter was obtained from the College of Education, Open and Distance Learning, Kampala International University for the researcher to solicit approval to conduct the study in the selected private and public primary schools in Makindye Municipality . Once approved by the Headmasters of the selected primary schools the researcher reproduce the questionnaires for distribution.

3.7.2 During Data Gathering

The respondents were requested to answer completely and not to leave any part of the questionnaire unanswered. The researcher retrieved the questionnaire after the respondents finished answering and make sure that all questions were answered.

3.7.3 After data gathering

After the data collection was done, the data were collated and entered into statistical Package of Social Sciences (SPSS) processing and analysis.

3.8 Data Analysis

The demographic characteristics of the respondents and the diseases affecting school children were presented in the table that shows frequency and percentage of the respondents. The means were applied for the personal hygiene practices and occurrence of diseases. The following mean range were used to arrive at the means of the individual indicators and interpretation.

Mean Range	Response Mode	Interpretation
2.34 -3.00	Always	Very Good/Very High
1.67 -2.33	Sometimes	Good/ High
1.00 – 1.66	Never	Poor/ Low

The t test was utilized to test the difference between the means for hypothesis 2 at 0.05 level of significance.

The Pearson linear Correlation Coefficient was employed to test the hypothesis on correlation (hypothesis 1) at 0.05 level of significance.

The regression analysis (R^2) was computed to determine the influence of the dependent variable on the independent variable.

3.9. Ethical Consideration

To ascertain that ethics was practiced in this study the following activities were implemented by the researcher:

1. The respondents were coded instead of reflecting their names
2. Solicited permission through a written request to the concerned school officials of the primary schools under study
3. Acknowledge the authors mentioned in the study by documenting in the reference.
4. Presentation of the findings were generalized

3. 10 Limitations in the Study

In the course of carrying out this study, the researcher anticipates several constraints, which may in one way or the other, limit the findings of the research.

The findings of the study may be limited by the fact that situation in selected primary schools in Makindye Municipality might not be identical to other regions of the country, for example in the countryside. In that case, the findings might not bring out the true reflection of the entire country. The researcher addressed the above limitations so that they wouldn't compromise the research exercise and the findings of the study in any way.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.0 Introduction

This chapter presents the data collected from the field, statistically analyzed as reflected in the tables. Analysis and interpretation of the data.

4.1. Respondents' Demographic profile

Table 4.1 A: Demographic Information of Teachers (n=12)

Categories	Frequency	Percentage
Gender		
Males	5	41.7
Females	7	58.3
Total	12	100
Age		
18 – 25	2	16.7
26 – 35	4	33.3
36 – 45	3	25.0
46 and above	3	25.0
Total	12	100
Marital status (n=12)		
Married	6	50
Single	5	41.7
Widower	1	0.8
Total	12	100
Education levels of Teachers (n=12)		
Masters' degree	4	33.3
Bachelor's degree	5	41.7
Diploma	3	25
Total	12	100
Duration of stay in school		
1-3 years	3	25
3 – 5 yrs	4	33.3
5 – 10 yrs	3	25
Over 10 yrs	2	16.7
Total	12	100

Source: Primary data, 2017

Table 4.1 A. shows that majority of respondents were females 7(58.3%) and only5 (41.7%) were males, and therefore this indicates gender imbalance especially in teaching profession which is usually dominated by females. As to age two (16.7%) of the respondents were between the age of 18 to 25 years, four (33.3%) were between the age of 26 to 35, three (25.0%) were between the age of 36 to 45 and 46 and above respectively. This implies that majority of the respondents were mature enough to handle and take care primary school children.

As to marital status out of 12 respondents, six (50.0%) were married, five (41.7%) were single and one (8.3%) was a widower. As to educational levels of teacher, out of twelve respondents four (33.3%) were master's degree holder, five (41.7%) were bachelor's degree holders and three (25%) were diploma holder. This means that the teachers are very much qualified to teach in the primary level. And in terms of the duration of stay in school, three (25%) stayed in school between 1 to 3 years and 5 to 10 years respectively, four (33.3%) stayed in the school between 3 to 5 years and two (16.7%) stayed in school for over ten years. This means that most of the teachers have been teaching in the school for quite a long time and they know their pupils well.

Table 4.1B. Demographic Information of Pupils (n=380)

Categories	Frequency	Percentage
Gender		
Males	150	39.5
Females	230	60.5
		100
Age		
10 – 15	380	100.0
School attended		
Private primary school	188	47.3
Public primary school	192	50.5
Total		100

Source: Primary data, 2017

Table 4.1B show the demographic information of the primary school pupils. Out of three hundred eighty respondents one hundred fifty (39.5%) were males and two hundred thirty (60.5%) were females. It shows that majority of the pupils were females. As to age all the pupils were between the age of 10 to 15 years. This means that some pupils were older than the others and not within the age bracket of pupils in primary 5 and 6. Based on the school attended one hundred eighty eight were from private primary schools and one hundred ninety two were from the public school. It shows that there were more children studying in the public schools compared to private schools because of higher school fees in the private schools.

4.2 Personal Hygiene Practices Among Primary School Children

The personal hygiene practices among primary school children are shown in Table 4.2A and Table 4.2 B. This includes Washing of hands, brushing their teeth, taking a bath, eating and drinking, using bathroom, toilet and kitchen and wearing clean clothes.

Table 4.2A: Personal Hygiene Practices among School Children

n = (380)

Statements	Never	Sometimes	Always	Mean	Interpretation	Rank
Do you wash your hands?						
Using soap	15 (3.9%)	159 (41.8%)	206 (54.2%)	2.36	Very Good	1
After using the toilet/latrine	13 (3.4%)	211(55.5%)	156 (41.0%)	2.01	Good	2
After playing	27(7.1%)	200 (52.6%)	154 (40.5%)	1.99	Good	3
Before eating food	104(27.3 %)	158 (41.6%)	119 (31.3%)	1.87	Good	4
Average mean				2.03	Good	
Do you brush your teeth						
Every morning when you wake up	2 (0.5%)	159 (41.8%)	220 (57.9%)	2.97	Very Good	1
After eating food	80 (21.1%)	180(47.4%)	120(31.6%)	2.31	Good	2
Before sleeping	221(58.1 %)	103 (27.1%)	56 (17.7%)	1.65	Poor	3
After eating sweets	220 (57.9%)	7 (1.8%)	154 (40.5%)	1.63	Poor	4
Average mean				2.17	Good	
Do you take a bath?						
When you wake up in the morning	15 (3.9%)	159 (41.8%)	206 (54.2%)	2.28	Very Good	1
Before you go to sleep	104(27.3%)	158 (41.6%)	119 (31.3%)	2.01	Good	2
After playing	113 (29.7%)	156 (41.0%)	111(29.2%)	1.81	Good	3
When you sweat	154 (40.5%)	200 (52.6%)	27(7.1%)	1.66	Poor	4
Average mean				2.07	Good	

Source: Survey data, 2017

Mean Range	Response Mode	Interpretation
2.34-3.00	Always	Very good
1.67 - 2.33	Sometimes	Good
1.00 - 1.66	Never	Poor

Table 4.2A shows the personal hygiene practices of primary school children in public and private schools. As to washing of hands, using soap while washing has a mean of 2.36 which is very good, using the hands after using toilet or latrine has a mean of 2.01 which is good, washing hands after playing has a mean of 1.99 which is good and washing hand before eating food has a mean of 1.87 which is good. The average mean is 2.03 which good. This implies that children wash their hands with soap water to avoid getting sick.

As to brushing of teeth, majority of the pupils brush their teeth every morning when they wake up with a mean 2.97 which means very good. After eating food most of the pupils brush their teeth with a mean of 2.31 which means good, and before sleeping and after eating sweets both has a mean 1.65 which means poor respectively. The average mean is 2.17 which means good. The data shows that most of the children do not brush their teeth before sleeping and after eating sweets which can cause them cavities and toothaches which can affect their attendance in school as well as their performance.

When the children were asked about how they take a bath, majority of them said that they take a bath every morning when they wake up with a mean of 2.28 which means very good, most of them take a bath before sleeping with a mean of 2.01, some take a bath after playing with a mean of 1.81 which is good and some take a bath when they sweat with a mean of 1.66 which means poor. This means that children clean themselves well despite the scarcity of water in their area. This also shows that children are aware of their cleanliness.

Table 4.2B: Personal Hygiene Practices Among School Children (n=380)

Do you eat/drink?	Never	Sometimes	Always	Mean	Interpretation	Rank
Boiled water	159 (41.8%)	15 (3.9%)	206 (54.2%)	2.57	Very Good	1
Well cooked food	21 (5.5%)	159 (41.8%)	200 (52.6%)	2.36	Very Good	2
Water that is kept in clean container and well covered	104(27.3%)	115 (30.2%)	161 (42.3%)	1.79	Good	3
Food that is well covered	104(27.3%)	119 (31.3%)	158 (41.6%)	1.88	Good	4
Food that was left over from previous night	156 (41.0%)	211(55.5%)	13 (3.4%)	2.01	Good	5
Food that is half cooked or raw	200 (52.6%)	27(7.1%)	154 (40.5%)	1.52	Poor	6
Average mean				2.05	Good	
Do you use?						
Clean bathroom and toilet	104(27.3%)	119 (31.3%)	158 (41.6%)	2.04	Good	1
A well organized and clean kitchen to prepare your food	100 (26.3%)	124(32.6%)	156 (41.0%)	2.01	Good	2
Water when you go to the bathroom or toilet	154 (40.5%)	200 (52.6%)	27(7.1%)	1.99	Good	3
Average mean				2.02	Good	
Do you wear?						
Clothes that have been ironed	150 (39.5%)	217(51.1%)	13 (3.4%)	2.32	Good	1
Fresh and clean clothes every day	30 (7.8%)	150 (39.5%)	200 (52.6%)	2.30	Good	2
Change clothes every time you bath	100(26.3%)	123 (32.4%)	158 (41.6%)	1.66	Poor	3
Average mean				2.07	Good	
Overall mean				2.07	Good	

Source: Survey data, 2017

Table 4.2B shows the other personal hygiene practices among primary school children. When the children were asked if they boiled water for drinking majority of them used boiled water for drinking with a mean of 2.57 which is very good. This shows that every household in Makindye Municipality boil water for drinking. This could prevent them from suffering any water borne diseases. Also majority of them eat well cooked food with a mean of 2.36 which is very good. Food must be cooked well before eating so microorganisms will be killed to avoid contamination of diseases especially tapeworms, ascaris and others. Most of them eat food that was left over in the previous night with a mean of 1.79 which means good, that they eat food that is well covered with a mean of 1.88 which is good, most of the pupils drink water that is kept in clean container and well covered with a mean 2.01 which means good and some eat food that is half covered or raw with a mean 1.52 which means poor. Eating half cooked food or raw is very dangerous for children because it can cause diseases which may affect their health. If the children are sick then it affects their schooling.

As to the use of clean and organized kitchen when preparing food most of the students answered good with a mean of 2.04, using water when going to the bathroom and toilet most students answered good with a mean of 2.01 and when they use water to clean the bathroom and toilet also answered good with a mean 1.09. This shows that water is a necessity for pupils when they prepare food, use the bathroom, toilet and other household chores. The average mean is 2.02 which means good.

Most of the pupils wear fresh and clean clothes everyday with a mean of 2.32 which means good, on changing clothes every time they bathe most of the pupils answered good with a mean of 2.30 and most of the pupils wear ironed clothes with a mean 2.07 which means good. The average mean is 2.07 which means good. This implies that children wear clean and ironed clothes everyday especially in going to school.

The overall mean for personal hygiene practices is 2.07 which means good. This implies that the pupils in public and private primary schools in Makindye Municipality practice proper hygiene. They are aware of the effect of practicing personal hygiene on their health.

4.3 Occurrence of diseases associated with personal hygiene practices among school children (n=12)

The occurrence of diseases associated with personal hygiene practices among school children is reflected in Table 4.3

Table 4.3: Occurrence of diseases associated with personal hygiene practices among school children

Aspects		Freq.	Percentage	Mean	Interpretation
Children get sick every week	Always	3	25.0	1.33	Low
	Sometimes	8	66.7	2.41	High
	Never	1	8.3	1.01	Low
			100		
Children get sick every month	Always	3	25.0	1.33	Low
	Sometimes	7	58.3	2.38	High
	Never	2	16.7	1.21	Low
			100		
Children commonly suffer from bacteria diseases	Always	6	50.0	2.34	High
	Sometimes	4	33.3	1.37	Low
	Never	2	16.7	1.21	Low
			100		
The common diseases are waterborne	Always	7	58.3	2.38	High
	Sometimes	3	25.0	1.33	Low
	Never	2	16.7	1.21	Low
			100		
Children suffer from fungal/infectious diseases	Always	3	25.0	1.33	Low
	Sometimes	7	58.3	2.38	High
	Never	2	16.7	1.21	Low
			100	2.34	

Source: Primary Data, 2017

Mean Range	Response Mode	Interpretation
2.34 – 3.00	Always	Very High
1.67 – 2.33	Sometimes	High
1.00 – 1.66	Never	Low

The occurrence of diseases is associated with the personal hygiene practices. The teacher advisers of the pupils were the ones who answered this questions because they know when their pupils get the diseases and the type of diseases they suffer.

Table 4.3 shows that as to the occurrence of diseases most of the children got sick sometimes in a week with a mean of 2.41 which is high. And every month most of the children got sick sometimes with a mean 2.38 which is high. This implies that children got sick sometimes because they are aware of their personal hygiene.

As to the diseases commonly suffered were bacterial diseases which the children frequently suffered and waterborne diseases with a mean of 2.34 and 2.38 which is high respectively. On the other hand, children suffer on fungal/infectious diseases sometimes with a mean 2.38 which is high.

4.3 Relationship Between Personal Hygiene and Occurrence of Diseases Among School Children

The correlation between independent variable (personal hygiene) and dependent variable (occurrence of diseases) are established and reflected in Table 4.4.

Table4.4: Relationship between personal hygiene and occurrence of diseases among school children

Variables correlated	Computed R-Value	Sig	Interpretation	Decision on Ho
Personal hygiene Vs Occurrence of diseases	.295	.003	Significant correlation	Rejected

(0.05 level of significance)

Sources: Survey Data, 2017

Using Pearson's correlation coefficient at 0.05 level of significance, it is evident that the null hypothesis of no relationship between the personal hygiene and occurrence of diseases is rejected because it shows that the r value is .295 and the sig. is .003 is less than 0.05. This implies that there is a relationship between personal hygiene and occurrence of diseases among primary school children in Makindye Municipality.

Regression Analysis

Through the determination of the R², the influence of the dependent variable on the independent is noted in table 4.4B.

Table 4.4B: Regression Analysis between Personal Hygiene and Occurrence of Diseases (n=380)

Variables regressed	Adjusted r²	F-value	Sig.	Interpretation	Decision on H_o
Personal hygiene Vs Occurrence of diseases	0.684	252.797	.000	Significant effect	Rejected

Source : Primary Data, 2017

Table 4.4B indicates that there is a significant effect between personal hygiene and occurrence of diseases therefore the null hypothesis is rejected. This shows that 68% of occurrence of diseases among primary school children is due to the personal hygiene practices. The other 32% is caused by other factors other than personal hygiene.

4.3.1 Diseases Affecting Primary School Children

The disease affecting primary school children is reflected in the following table:

Table 4.5.Diseases Affecting Primary School Children(n=12)

		Public primary schools		Private primary schools	
Aspects		Frequency	Percentage	Frequency	Percentage
Diseases affecting children are from eating dirty food	Diarrhea	4	66.7	2	33.3
	Typhoid	1	16.7	4	66.7
	Dysentery	-	-	-	-
	Cholera	1	16.7	-	-
			100		100
Diseases are caused by poor bodily hygiene (not bathing)	Scabies	1	16.7	2	33.3
	Skin rashes	4	66.7	2	33.3
	Jiggers	1	16.7	2	33.3
			100		100
Diseases are contracted from using dirty toilet/latrine	STIs	4	66.7	3	50
	STDs	2	33.4	3	50
			100		100
Diseases affecting children come from drinking dirty water	Yes	4	66.7	6	100
	No	2	33.3	-	-
			100		100
Diseases are caused by eating with dirty hand	Yes	4	66.7	100	100
	No	2	33.3	-	-
			100		100
Diseases are caused by eating contaminated/uncovered food	Yes	4	66.7	5	83.3
	No	2	33.3	1	16.7
			100		100

Source: Primary Data, 2017

Table 4.5 shows the different diseases affecting primary school children in Makindye Municipality. As to the diseases affecting school children from eating dirty food for public primary school children diarrhea affects majority of the pupils with a percentage of 66.7, followed by typhoid fever and cholera with percentage of 16.7 respectively. While in private primary school typhoid fever affects the children with a percentage is 66.7 and followed by diarrhea with a percentage is 33.3. Majority of the public primary schoolchildren suffered from skin rashes with a percentage of 66.7, then scabies and jiggers with a percentage of 16.7 respectively due to poor bodily hygiene not bathing always while in private primary school children from scabies, skin rashes and jiggers with a percentage of 33.3 respectively. This showed that public school children are affected by skin rashes because of not bathing always due to scarcity of water in the area. As to the diseases contacted from using dirty toilets and latrines majority of the public school children are affected by urinary tract infection (UTI) with a percentage of 66.7 and some children have sexual transmitted disease (STD). Private primary school children suffered STI and STD with a percentage of 50%. The table also shows that children were also affected by diseases because their drinking dirty water, they eat with dirty hands and eating contaminated food.

4.4 Comparison of Personal Hygiene Practices and Occurrence of Diseases Among Public and Private Primary School Children

The comparison of the personal hygiene practices and occurrence of diseases among public and private primary school children is reflected in table 4.6A.

Table 4.6A. Means Showing the Difference between Personal Hygiene Practices and Occurrence of Diseases Among Public and Private School Children (n=380)

Variables	Means	Interpretations	p-value
A. Personal hygiene practices			
Public primary schools	1.97	Good	0.00*
Private primary schools	2.35	Very Good	
Average mean	2. 16	Good	
B. Occurrence of diseases			0.00*
Public primary schools	2.11	High	
Private primary schools	2.16	High	
Average mean	2.14	High	
Overall mean	2.15	High	

Source: Primary Data, 2017

Table 4.6A shows that as to personal hygiene practices private primary school children has better personal hygiene practices as shown by the mean of 2.35 which is very good as compared to the public primary school children with a mean of 1.97 which means good. This implies that children from the private primary practice personal hygiene better compared to public school children. For the occurrence of diseases it show that both public and private school children are affected by different diseases as shown by the means of 2.11 and 2.16 respectively. The occurrence of diseases among school children can also be attributed to the environment.

The difference between the personal hygiene practices and occurrence of diseases among private and public primary school children was computed using the t-test.

Table 4.6B. t-teston the Difference of Personal Hygiene Practices and Occurrence of Diseases Among Private and Public Primary School Children

Categories	Sig. (2tailed)	t- value	Mean difference	Decision of Ho
Personal hygiene practices	.022	-2.381	-.27750	Rejected
Public primary schools Vs Private primary schools				
Occurrence of diseases	.025	-2.379	-.27851	Rejected
Public primary schools Vs Private primary schools				

Source: Primary Data, 2017

Table 4.6B shows the difference of personal hygiene practices and occurrence of diseases among public and private primary school children. t – test was used to compute the difference at 0. 05 level of significance. The null hypothesis that there is no difference in the personal hygiene practices and occurrence of diseases among public and private primary school children is rejected. This means that both public and private primary school children practice good personal hygiene.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This part deals with the discussions conclusions, recommendations and suggested areas that need further research.

5.1 Discussions

5.1.1 Personal Hygiene Practices Among Primary School Children

From the findings of the study, it was concluded that personal hygiene practices among primary school children in both public and private schools was good. The findings contradicts with the findings of Sarkar (2013) in which he found out that personal hygiene practices among primary school children in India were not satisfactory although he found out that female pupils were better compared to male pupils in their personal hygiene practices. But in the study of Ghanim, et al. (2016) among primary school children in Sharjan, United Arab Emirates have a good personal hygiene practices. Personal hygiene is not an isolated behavior instead it varies from person to person according to different factors intervention programs 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.

In the study conducted by UNICEF (2015) among school children in the Philippines it shows that most of the children wash their hands using soap were 73.2% from Luzon, 75.6% from Visayas and 74.4% from Mindanao. And tooth brushing habits had dropped by 86% percent of all ages. In the study conducted by Vuan (2012) in Hanoi found that children that practice good personal hygiene resulted in good health. The results indicated that 81.4% of school children wash their hands after using the toilets and 85.9% washed their hands before eating. Only 39.5% regularly trimmed their fingers and toenails, 83.2% of children took bath daily and 83.8% wore slippers and shoes

most of the time. In the study conducted among One thousand six hundred eight 1608 school children for the items on nails, scalp, hairs and teeth relating to personal hygiene from two sets of villages that is one set where primary school teacher were working and primary care workers and the other where community health volunteers were delivering primary health care to evaluate the efficiency of school teacher role and the community health volunteers in improving health education to school children. Results was evident that children of group 1 village were better with respect to all items related to personal hygiene and ineffective conditions except with the scalp where the children had infection. The result showed that teachers are effective in their role as primary care workers compared to community health volunteers in imparting health education to school children, (Awate, R.V, Ketkar Y.A, Somalya P.A, 2012).

The utilization of water and sanitation facilities at schools is mainly influenced by the availability and level of such facilities at the school. When the school has enough latrines for both boys and girls this stimulates the utilization among student. In enclosed communities such as schools the presences of latrines attracts pupils to use them even when at home they do not have such facilities at home. Also, due to the fact that school acts as a training institution, school train pupils on how to use latrine facilities and teach the pupils on the importance of such facilities in the prevention of diseases. This is in agreement with Sarkar, M. (2013) who indicated that the provision sanitation facilities in schools is a basic step towards a healthy physical learning environment benefiting both the learning process and health of the students.

However, mere provision of sanitation facilities with adequate knowledge and training of pupils on how to use such facilities might not yield the desired benefits of rising responsible future citizens among pupils who adhere to sanitation practices of utilization latrine facilities. But the challenge of space within primary schools whereby most schools are located on limited piece of land hindered the construction of rubbish pits in some schools. The use of the trucks provided by Kampala Capital City Authority was another opportunity for schools to dispose of their rubbish. However, the use of these

trucks was also limited because they had specific days such as Tuesdays and Thursdays when they moved around to collect the rubbish. This increased accumulation of rubbish within the school without disposing it waiting for the trucks. This could attract flies which could contribute to the transmission of diseases among pupils.

Hand washing practices of pupils were mainly affected by the presence of hand washing facilities at the school. The availability of hand washing facilities like water tanks specifically designated for hand washing for pupils attracted pupils to wash their hands before and after every meal. However, the location of hand washing facilities next to the latrines increased the likelihood of pupils washing their hands after a latrine visit. This is because pupils could immediately realize the need for hand washing after the latrine visit due to the physical presence of the hand washing facility. However, when the hand washing facilities were located away from the latrine, pupils were likely to forget about hands or just neglect the practice due to the distance and movement involved to get to the hand washing facility. This reduced the likelihood of pupils washing hands which could contribute to morbidity of sanitation and hygiene diseases among the pupils.

However, in other cases, improving sanitation is still a big challenge, particularly in rapidly growing urban slums. Even though building improved sanitation facilities is a crucial health intervention, the full health benefits will not be realized without proper use and maintenance of the facilities and good personal and domestic hygiene (Carr and Strauss, 2001). Having a good personal hygiene practices means taking care of yourself and leading a healthy lifestyle. According to Boehlke, Julie (July, 2017) that personal hygiene habits and techniques should be instilled by parents to their children at a very young age . Personal hygiene includes cleaning all the areas of the body on a daily or regular basis to prevent odor and keeping up with your appearance . Personal hygiene is more than just staying clean it can affect the self esteem and how others view and approach you.

5.1.2 Occurrence of Diseases Among Primary School Children

The primary school children commonly suffered from bacteria diseases. This is in line with an Observational Health survey conducted by Jitta fesca (2010), on a Sanitation and Hygiene in primary schools in Uganda. The findings revealed that 71% of the children acknowledge that not washing the hands after using the toilet cause transmission of the worms. 33% of the clients examined were suffering from fungal skin infection & 35% from scabies. Dental examination showed that 92.4% of them have had dental caries & 76.3% have periodontal or gum diseases.

In this point of view a study conducted to determine the prevalence of parasitic infections among 514 school children in Srinagar city, Kashmir, India. The stool samples were collected in 4 middle schools. The findings revealed that 46.7% had 1 or more parasites. Prevalence of *Ascaris lumbricoides* was highest i.e. 28.4% followed by *Giardia lamblia* 7.2%: *Trichuris, trichura* 4.9% and *Taenia saginata* 3.7% conditions most frequently associated with infection included the water source, defecation site, personal hygiene and the extent of maternal education (Showkat et al, 2012)

Additionally, waterborne infectious diseases, such as diarrheal, are linked to poor sanitation, inadequate hygiene, ingestion of and contact with unsafe water, and lack of access to adequate amounts of safe water. This was among diseases associated with personal hygiene practices among school children. However, in Uganda where access to clean water stands at 55% and 62% for rural and urban communities respectively leaves the practice of hand washing in compromise which exposes individuals and communities to water related and water borne diseases and consequently leading to deaths from diseases such as diarrhoea and cholera (WHO/UNICEF, 2012). although tap water could also be contaminated in the process of transferring it from the source to individual households or school, the risk of contamination is only limited to leakages on underground taps. The use of tape water as the main source of water has got public health implications which are mainly beneficial in the prevention and control of water borne and water related diseases.

According to Muegge O.J, (2014), Water related diseases contribute 80% of all illnesses and deaths in the developing world yet diarrheal and malaria are by far the largest causes of under five child mortality in Africa cause 34% of the deaths. The number of deaths due to water-related diseases is estimated at 5 million of which most of them are children. These death, most of which are preventable occur among 1.2 billion people world-wide without access to safe and reliable drinking water and 2.5 billion people do not have access to sanitation services.

In Uganda, more than 90% of the rural population lack access to improved sanitation while 70% of the urban population face the same problem (USAID and Uganda Water and Sanitation Profile, 2008). About 40% of the population living in the slums of Kampala city practice open defecation instead of latrines or toilets for human excretal disposal; this is mainly the reason of diarrheal diseases mostly in the rainy seasons. Approximately 23,000 Ugandans including 19,700 children under 5 years old die each year from diarrhoea which is among the water borne disease.

According to Pruss, Anette, et. al (2002) diseases related to water, sanitation and hygiene disproportionately affect the poorer members of the society. The reasons behind this are complex and interconnected. They include better access by more wealthy to services and/or less polluted environment. The burden of diseases due to water, sanitation and hygiene. But according to Naber, Ton HJ, et. al. (1997), that the severity of diseases suffered by school children may not always be influenced by personal hygiene practices but also other factors like malnutrition. Malnutrition was found in children who had gastrointestinal diseases and other internal diseases.

5.1.3 Relationship between Personal Hygiene and Occurrence of Diseases Among Primary School Children

Based on the findings there is a positive and significant relationship between personal hygiene and Occurrence of diseases among school children in Makindye division, and

this was indicated by the r and sig values (r-value=.295 and sig=.003), this implies that improving in implementing practicable measures against diseases that automatically increased the extent of personal hygiene among school children in Makindye division and curb any syndrome resulted from dirtiness. From the regression analysis results showed that Personal hygiene which depends on hands cleanness, taking bath significantly affects Occurrence of diseases among school children in Makindye division. In this case, personal hygiene accounted for 68% on occurrence of diseases and this was indicated by adjusted r squared of 0.684 leading to a conclusion that Personal hygiene significantly influences the neutralization of any disease among school children in Makindye division. Hence, hygiene education for children would help them supporting the hygiene practices and not dirtiness during the meeting yielded effective result.

Hygiene is a personal issue with changing frequency for all; however, it is of great importance to wash hands after using bath room and before eating or touching food. The findings showed us that the majority of primary school children stated that they wash their hands after using bathroom which is an indicator of the fact that they have positive behavior towards this issue. Therefore, the most important aspect of maintaining good health is personal hygiene. Personal hygiene is keeping the body clean and helps prevent the spread of germs. Maintaining good health also includes nutrition, leisure/recreation opportunities, sleep and exercise. Hygiene practices taught during childhood by mother, father or teachers, mostly through practicing, need to be continued by the individual after childhood. correct adoption of these habits has a direct impact on a person future health can be affected by many factors including beliefs, values, habits, socio-economic and cultural factors, level of knowledge personal preferences. Effective result also is likely observed when such action is applied to schools in Makindye division. The reason is that many children in schools are already victims of the diseases attack and due to this health issue, headmasters should be in position to bring solutions to curb the problem as soon as possible.

According to World Health Organization (WHO, 2012) most of the children suffered diseases and sometimes untimely death due to poor personal hygiene and sanitation. If school children hygiene as a way guaranteed well-being and long life they will make efforts to put in place proper hygiene measures in their everyday life. There had been an increasing recognition within the international university that improving health of the poor especially the children depended on adequate understanding of the socio-cultural and economic aspects of the community in general and family in particular. Health is a state of complete physical, mental and social well being which is a fundamental right of the individual. But according to Amoaning (2006), the improvement of sanitation is known to have a significant impact on the health of households especially children and across communities even in the niche of working environment.

5.1.4 Personal Hygiene Practices and Occurrence of Diseases Between Public and Private Primary School Children

It was observed that personal hygiene practices were for both private primary school was very good and for public primary schools was good. The practicability personal hygiene of is likely to be implemented in a private school when compared to the public school. Routine inspection by teachers was the commonest form of health appraisal. This may suggest that a health personnel need to be employed to cater for the health of the school children in Uganda and other similar developing countries. In this view, the improvement in sanitation is known to have significant beneficial impact on health both in households and across communities and even in the niche of the working environment (Amoaning, 2006). As to occurrence of diseases both private and public schools have high occurrence of diseases. According to Naber, et.al (1997), the complications in the occurrence of diseases may not always due to personal hygiene but other factors like malnutrition. Personal hygiene is a direct view of yourself according to Boehlke, J (July, 2017). If you practice regular, good hygiene you increase self-esteem and how others view you. Keeping the surroundings clean is easier to

maintain good hygiene. This means washing and wearing clean clothes and eating and sleeping in a safe and clean environment to avoid diseases.

There had been increasing recognition within the international community that improving the health of poor people across the world depended on adequate understanding of the socio-cultural and economic aspects of the context in which public health programmes were implemented (WHO,2010). The health agency supports the view of the that 'health' is a state of complete physical, mental and social well-being but not merely the absence of disease or infirmity. They agreed that health is a fundamental human right and the attainment of a highest possible level of health was crucial. Generally people who have a duty to promote health's a wit as resource for everyday life and not the object of living. It was a positive concept that emphasize social and personal resources and physical capabilities (Lancet,2010).

5.2 Conclusions

Based on the findings of the study, the following conclusions were made:

1. Personal hygiene practices among primary school children was rated good which means that primary school children are aware of the importance of practicing proper personal hygiene.
2. The occurrence of diseases among primary school children was high despite practicing personal hygiene children are affected by diseases like bacterial diseases, waterborne diseases and fungal or infectious diseases. This means that the diseases affecting school children is not only due to personal hygiene but other factors like dirty surroundings and malnutrition.
3. There is a relationship between personal hygiene practices and occurrence of disease. The occurrence of disease like bacterial infection, water borne diseases and other infections among primary school children is caused by [poor personal hygiene practices.

4. There is no difference in the personal hygiene practices and occurrence of diseases among private and public primary school children. It can be concluded that both public and private primary school children practice good personal hygiene.

5.3 Recommendations

Based on the findings and conclusions of the study the following were the recommendations:

1. Educational authorities can develop and adopt policies and guidelines that will make way to adequate access to resources, items and opportunities to maintain personal hygiene at school and home.
2. Schools should provide hygiene education to kindergarten and early grade school children to supplement the training provided by parents and guardians to ensure that all children at an appropriate age learn how to protect themselves and others from preventable exposure to illness and other hygienic hazards.
3. School based health children education program may be useful effort. The role of parent-teacher association should be emphasized where teachers and parents play a pivotal role in personal hygiene of the children.

5.4. Areas for Further Research

1. Family Background and Personal Hygiene Practices among Primary School Pupils
2. Knowledge, Attitudes, Personal Hygiene and Occurrence of Diseases of Diseases Among Students in Secondary Schools

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APPENDIX I: TRANSMITTAL LETTER



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**College of Education, Open and Distance e-Learning
Office of the Principal**

7th June, 2017

TO: TORIOLA FUNKE
CHRISTIANA.
.....
.....

Dear Sir/Madam,

**SUBJECT: PERMISSION TO CONDUCT A RESEARCH STUDY IN YOUR
ORGANISATION**

With reference to the above subject, this is to certify that Ms. Toriola Funke Christiana Reg. 1163-07056-06712 is a bonafide student of Kampala International University pursuing a master in Educational Administration and Management.

She is currently conducting a field research entitled 'Personal Hygiene and Occurrence of Diseases among Primary School Children in Makindye Municipality, Kampala, Uganda'.

This area has been identified as a valuable source of information pertaining to her research project. The purpose of this letter therefore is to request you to avail her with the pertinent information as regards to her study.

Any data shared with her will be used for academic purposes only and shall be kept with utmost confidentiality.

Any assistance rendered to her will be highly appreciated.

Yours truly,

**Dr. Tindi Seje
Ag. Principal – CEODL**



APPENDIX II: LETTER TO THE RESPONDENTS

Dear Respondent,

My name is Tariola Funke Chrstiana, a student of Kampala International University, pursuing a Master's of Education (Biology) degree. I am conducting a research on "Personal hygiene practices and the occurrence of diseases among school children in Makindye Municipality." You have been selected to participate in this study by answering the following questions. Please tick the most appropriate response or elaborate where necessary. The information obtained from you shall be kept confidential and used for academic purposes only. You are also free to withdraw from participating at any time.

Thank you in advance for your participation.

Toriola Funke Christina

APPENDIX III: INFORMED CONSENT

I am giving my consent to be part of the research study of Ms. Toriola Funke Christina that will focus on personal hygiene and occurrence of diseases.

I shall be assured of privacy, anonymity and confidentiality and that I will be given the option to refuse participation and right to withdraw my participation anytime.

I have been informed that the research is voluntary and that the results will be given to me if I ask for it.

Initials: _____

Date: _____

APPENDIX IV: QUESTIONNAIRE

Section A: Respondents' Demographic Information(For Pupils)

1. Gender Male []
 Female []

- 7- 9 ()
2. Age 10– 15 []

4. Type of School Private School ()
 Public School ()

For Teachers

1. Gender Male ()
 Female ()

2. Age 18 – 25 ()
 26- 35 ()
 36 – 45 ()
 46 and above ()

3. Marital status Single []
 Married []
 Widowed []

4. Education levels Masters' degree []
 Bachelor's degree []
 Diploma []
 Certificate []

Secondary level []
 Primary level []
 Other, please specify.....

5. Duration of stay in the school 1 – 3 yrs []
 3 – 5 yrs []
 5 – 10 yrs []
 Over 10 yrs []

Section B: Personal Hygiene practices (For Pupils)

In this section, please tick the most appropriate choice in the table below by ranking your response using the following scale:

Do you wash your hands?	Always	Sometimes	Never
1. Using soap			
2. Before eating food			
3. After using the toilet/latrine			
4. After playing			
Do you brush your teeth	Always	Sometimes	Never
5. Every morning when you wake up			
6. After eating food			
7. Before sleeping			
8. After eating sweets			
Do you take a bath?	Always	Sometimes	Never
9. When you wake up in the morning			
10. Before you go to sleep			
11. After playing			

12. When you sweat			
Do you eat/drink?	Always	Sometimes	Never
13. Well cooked food			
14. Food that is well covered			
15. Food that was left over from previous night			
16. Food that is half cooked or raw			
17. Boiled water			
18. Water that is kept in clean container and well covered			
Do you use?	Always	Sometimes	Never
19. Clean bathroom and toilet			
20. A well organized and clean kitchen to prepare your food			
21. Water when you go to the bathroom or toilet			
Do you wear?	Always	Sometimes	Never
22. Fresh and clean clothes every day			
23. Change clothes every time you bath			
24. Clothes that have been ironed			

Section C: Occurrence of Diseases (For Teachers)

Aspects	Frequently	Sometimes	Never
25. Children get sick every week			
26. Children get sick every month			
27. Children commonly suffer from bacteria diseases			
28. The common diseases are waterborne			
29. Children suffer from fungal/infectious diseases			

Section D: Personal Hygiene practices and Occurrence of Diseases (For Teachers)

Aspects	Frequently	Sometimes	Never
30. Diseases affecting children are from eating dirty food	Diarrhea		
	Typhoid		
	Dysentery		
	Cholera		
31. Diseases affecting children come from drinking dirty water			
32. Diseases are caused by poor bodily hygiene (not bathing)	Scabies		
	Skin rashes		
	Jiggers		
33. Diseases are caused by putting on dirty clothes			
34. Diseases are contracted from using dirty toilet/latrine	UTI		
	STDs		
35. Diseases are caused by eating with dirty hands			
36. Diseases are caused by eating contaminated/uncovered food			