HOSTEL SANITATION PRACTICE AND IT'S EFFECT ON STUDENTS HEALTH IN UNIVERSITY OF BENIN, BENIN CITY

BY

IYABOR ODUWA

EDU1408458

FACULTY OF EDUCATION
UNIVERSITY OF BENIN
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A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF HEALTH SAFETY AND ENVIRONMENTAL EDUCATION, FACULTY OF EDUCATION, UNIVERSITY OF BENIN, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF SCIENCE EDUCATION (B.Sc. Ed) IN HEALTH EDUCATION.

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CERTIFICATION

We, the undersigned, certify that this research project was carried out by **IYABOR ODUWA** with matriculation number: **EDU1408458** in the Department of Health Safety and Environmental Education, Faculty of Education, University of Benin, Benin City, and is adequate in scope and quality for the fulfillment of the award Bachelor of Science (Ed) degree in Health, Safety and Environmental Education.

_____	_____
Dr. S.O. Olikiabo	Dr. E.O. Igudia
Project Supervisor	**Project Coordinator**
Date:_____	Date:_____

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Dr. S.O. Olikiabo

Head of Department

Date_____

DEDICATION

This project is dedicated to God Almighty for His immense and numerous blessings upon my life.

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ABSTRACT

The aim of the study is to examine Hostel Sanitation Practice and its effect on Students health in University of Benin, Benin City.

The descriptive survey research design was employed in the study. The population of the study consisted of 7,233. The sample size of the study include 150 students selected through simple random sampling technique. The instrument for data collection is a validated questionnaire. The test-retest method of reliability was used and data collected was analysed using frequency count, percentage, mean and standard deviation.

The study revealed that the causes of poor sanitation in the hostel include inadequate maintenance of toilets, lack of understanding, irregular and overcrowding. The level of sanitation practice in the school hostel is poor with students defecating in open spaces, waste not collected on time, students not adhering to etiquette in washing their hands when they use the facilities. Poor sanitation was found to have a negative effect on the health of students. The contribution of school management was found to have room for improvement. Strategies such as raising awareness, renovating facilities, providing incentives and regular orientation was found to help improve sanitation practices in the hostel. The study recommends that students be encouraged to keep their environment clean by using the appropriate facilities and the school authority should provide these facilities in good conditions for use and government can also assist in providing health facilities in the universities.

CHAPTER ONE

INTRODUCTION

Background of the Study

World Health Organization defined sanitation as the means of collecting and disposing excreta and community liquids, waste in a hygienic way that will not endanger the health and welfare of the people. Adelaide and Goddey (2017) consider School Sanitation and Hygiene Education (SSHE) as the combination of hardware and software components that are necessary to produce a healthy school environment to develop or support safe hygiene behaviour. They are of the view that hardware components include supply of drinking water and facilities for hand washing and safe disposal of excreta and solid waste in and around the school compound. The software components are the activities that promote conditions at schools and practices of school staff and student that help to prevent water and sanitation related diseases and parasites.

Munir (2015) indicate that health influences learning and education influences health. This is because poor sanitation causes diarrhoea, which kills 1.5 million students each year. However, smart investments in sanitation can reduce disease, increase family incomes, keep girls and boys in school, help preserve the environment, and enhance

human dignity. Increasing evidence also shows that school sanitation and hygiene education programmes offer high cost benefit (Ikhioya, 2018). Unfortunately, the promises of school health and hygiene education programmes have not always been fulfilled by either the government or stakeholders in education especially in the university hostels. Hostels in most universities are not safe for students due to neglect of the operation and maintenance of health facilities. It is believed that there has been a lack of hygiene education for the students. These schools often suffer from nonexistent or insufficient water supply, sanitation and hand washing facilities, dirty and unsafe water supply; toilets or latrines that are not adapted to the needs of student particularly girls; nonexistence and hygiene education, unhealthy and dirty classrooms and school compounds among others (Igwe, Okezue, Nwaduru, Ezebuka, & Ginikanwa, 2017).

This led the world health organization according to Sanni (2015) to estimate that 88% of diarrhea disease is caused by unsafe water supply and inadequate sanitation and hygiene. Many schools serve communities that have a high prevalence of diseases related to inadequate water supply, sanitation and hygiene, and where child malnutrition and other underlying health problems are common. Under these conditions, schools become unsafe places where diseases are transmitted. Thus, student's ability to learn may be affected by inadequate water, sanitation and hygiene conditions (Mara, Lane, Scott, & Trouba, 2010). This can contribute to poor health

which can affect students' ability to learn and may therefore influence their academic performance and prospects in life (Tumwebaze, Orach, Niwagaba, Luthi, & Mosler, 2013). A study by Igwe, Okezue, Nwaduru, Ezebuka, and Ginikanwa (2017) shows that students with worm infestations have lower marks in school than non-infected students. Basically this means that student with heavy worm infestations begin at a disadvantage and have a slower start in the learning process; these students have only a few years of opportunity to benefit from a formal education. Issues of sanitation and hygiene are of critical concern to every nation as a whole and to schools as far as education is concerned. This situation and its inherent poor hygiene practices which are not different from what pertains in some rural schools in many developing nations, makes the school environment no longer a safe place for students (WHO,2009).

Statement of the Problem

The beauty of any environment lies on its good sanitary condition. This is so because, when an environment is clean, the lives of people around are not threatened by illness and diseases. Hostels in universities presents a ghastly picture, the neglect of filled refuse bin, students unsanitary habits has had adverse effects on the inhabitants. Many places within and around the hostel are littered with refuse, garbage and other wastes (Igwe, Okezue, Nwaduru, Ezebuka, Ginikanwa, 2017). Students seem not to take notice of the interrelatedness of dirty environment and diseases leading to them

falling victims of related diseases such as malaria, fever, dysentery among others (Ikhioya, 2018).

Waste disposal, refuse disposal as well as inadequate water supply are problems in our environment especially in institutions. It is caused by a lot of factors. These include neglect of the operation and maintenance of health facilities, lack of hygiene education for the students, non-existent or insufficient water supply, poor sanitation and inadequate hand washing facilities, dirty and unsafe water supply; toilets or latrines that are not adapted to the needs of students as well as unhealthy and dirty classrooms/school compounds. These factors have led to consequences on student health.

Diseases related to poor sanitation and water availability causes many sicknesses like cholera, diarrhoea, malaria and typhoid. All these diseases greatly affect the health of students. Students cannot even learn properly because they are sick. Even learning in unhealthy environments leads to student not even understanding what they are being taught and in extreme cases it could lead to students' mortality. Ikhioya (2018) and Water Aid Uganda (2013) noted that diarrhoea which is caused by poor sanitation kills 1.5 million children each year. Based on the negative effects of poor sanitation on the health of students, something has to be done.

However, it is not clear on the extent in which school management have contributed in curbing poor sanitation practices. A lot of literature available talks about environmental sanitation strategies but most of them have been done in the wider communities and not in institutions of learning (Sanni, 2015). Therefore, the study seeks to find out the strategies which could be employed to improve sanitation in the University of Benin, Benin City.

Research Questions

The following research questions were provided to guide this study;

1. What are the causes of poor sanitation practice in the school hostel?
2. What is the level of sanitation practice in the school hostel?
3. What is the effect of sanitation practices on student's health in the school hostel?
4. To what extent have the school management contributed in providing facilities that will enhance sanitation practices?
5. What are the strategies that could be employed to improve sanitation in the hostels?

Purpose of the Study

The main purpose of the study is to ascertain hostel sanitation practice and its effect on student's health in University of Benin. The specific objectives of this study are to;

1. examine the causes of poor sanitation in the hostels,
2. ascertain the level of sanitation practices in the hostels,
3. determine the effect of sanitation practices on students health,
4. examine the extent in which school management have contributed in providing facilities that will enhance sanitation practices, and
5. suggest strategies that could be employed to improve sanitation practices in schools.

Significance of the Study

The findings of this study will enable the students in University of Benin to better understand and cultivate a clean environment because cleanliness is next to Godliness. The finding will help the following people:

The students to know the needs of hygiene or health practices, because cleanliness in next to Godliness and also enable to have a sound health, if sanitation is practiced by the students, sickness and diseases will be reduced.

The school management, the findings will help the school management to provide adequate facilities that will enable the labourers to keep the environment clean and tidy, also provide fund for buying disinfectant and Antiseptic, and also paying the labourers.

Government: The findings will help the government, to formulate a policies that will enable their follow students keep the environment clean and regulations on the school. Also they serve as a mediator between the management and the students.

Scope/Delimitation of the Study

The scope of the study is the hostel sanitation practices and its effect on student's health. While it is delimited to students in hostels in University of Benin.

Definition of Terms

Sanitation: Sanitation is defined as the prevention of human contact with feces and the proper treatment and disposal of wastewater. Sanitation also includes promoting hygiene on a personal level through washing hands with soap.

Practice: The actual application or use of an idea, belief, or method, as opposed to theories relating to it.

Hygiene: Hygiene is a set of practices performed to preserve health. Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases.

Health: Health is the level of functional and metabolic efficiency of a living organism. In humans it is the ability of individuals or communities to adapt and self-manage when facing physical, mental, psychological and social changes with environment.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviewed some related literatures which are relevant to the study. In doing this, the following areas will be covered.

- Concept of Health and Sanitation
- Hostel Sanitation, Students Health and Challenges
- Strategies to Improve Environmental Sanitation in School Hostels
- Hygiene Education Programmes
- Factors Influencing Sanitation
- Components of Environmental Health
- Empirical Review
- Summary of Literature Review

Concept of Health and Sanitation

Health knowledge is the understanding of scientific facts on personal hygiene, environmental and communicable diseases. According to Nkom and Essien (2002), the dimension of knowledge deals with peoples' basic understanding of what constitutes hygiene or unhygienic behaviour, environmental cleanliness, wholesome or good quality water/food as well as the relationship between health and sanitation,

hygiene or clean water. In other words, whether people have the basic information to enable them to understand, analyze and arrive at rational conclusions about the nature, risks, and consequences of their activities.

Adogu, Uwakwe, Egenti, Okwuoha, and Nkwocha (2015) revealed that knowledge implies an understanding of specific, facts, terminology; conventions; ways and means of dealing with specifics, trends and sequences; classification and categories, methodology; criteria; universals and abstracts; principles and generalizations and finally theories and structures. Hence, knowledge does not stop at knowing or understanding phenomenon only, but equally extend to application of what is learnt. It can be stressed that it equally implies comprehension; interpretation; application; analysis and synthesis; with evaluation of what is known. For example, if a child is observed being able to brush his/her teeth correctly, it will be concluded that the child knows how to brush the teeth (cognitive and psycho-motor experiences) but a youngster who knows how to, may not always do it and sometimes may do it wrongly. This is because affective learning experience is not adequately utilized, as a result of which the child does not appreciate the knowledge acquired.

Health Practices

Availability of health facilities is a pre-requisite for putting health knowledge into action. Thus, knowledge is reinforced by practice. Health facilities include toilets,

water supply, refuse bins, hand washing facilities etc. For example if a child or pupil is instructed to wash his/her hands after going to toilet, hand wash facilities must be available to make the action possible. Similarly, if the school children are instructed not to litter the school premises or classroom with paper, then waste paper bin or baskets should be provided to help them transform the instruction into action. These control functions constitute a major aspect. The responsibility for such control rest with each member of the family, teacher and other staff in the school, employers in the work places.

According to Nkom and Essien (2002), practices relate to those basic aptitudes, abilities or the technical competence to handle, in a very practical way, the problems, situations, emergencies and needs which exist or may arise with respect to water and sanitation including the ability to teach or impact these skills to others. Some of these skills, would also encompass the ability to design, construct, build, repair and maintain water and sanitation related infrastructure, installations and mechanisms. For hygiene education to succeed, the people must not only be carried along they must actively participate in the design, implementation and evaluation of the programme. Sanitation or hygiene education is by its nature, not an immediate felt – need for rural community. The advantage in this particular project is that it enables government to use the water supply component which is a critical felt – need as a carrot to induce

and push through a programme of sanitation and behaviour change which, though not a felt-need, is very fundamental in improving people's welfare and health status.

Sanitation

Sanitation can be described as conditions and processes relating to people's health, especially the systems which supply water and deal with human waste. The Cambridge Advance learner's Dictionary (1995) also defined sanitation as the system for taking dirty water and waste products away from buildings to protect people's health. In a nut shell, sanitation refers to a process whereby people demand, effect, and sustains a hygienic and healthy environment for them by erecting barriers to prevent the transmission of agents of diseases. Such an approach is needed not only to prevent disease and promote health but also to lay the foundation for sustainable development. Sanitation and good hygiene practices are fundamental to health, survival, growth and development.

Sanitation is a complex topic, with links to health to both social and economic development. Although it affects many, it is championed by few (Mara, Lane, Scott, & Trouba, 2010). Globally, sanitation is recognized as any system that promotes proper disposal of wastes, use of toilet and avoiding open space defecation (Bartram & Cairncross, 2010). Ideally, a sustainable sanitary system should provide a clean

environment that protects and promotes human health, break the disease cycle and is socio-economically viable and appropriate (Okot-Okumu & Oosterveer, 2010).

School sanitation refers to hygienic practices that occur in schools. Coppens (2005) consider School Sanitation and Hygiene Education as the combination of hardware and software components that are necessary to produce a healthy school environment to develop or support safe hygiene behaviour. The author is of the view that hardware components include supply of drinking water and facilities for hand washing and safe disposal of excreta and solid waste in and around the school compound. The software components are the activities that promote hygienic conditions at schools as well as practices of school staff and children that help to prevent water and sanitation related diseases and parasites. Poor sanitation in school environment will have certain negative influences on learning

Learning in an unhygienic environment can affect learning in a lot of ways. Snel (2004) and Water Aid Uganda (2013) indicate that "health influences learning and education influences health which is indicated in the fact that poor sanitation causes diarrhoea which keeps students in hospitals rather than in schools". They also noted that diarrhoea kills 1.5 million children each year. It is obvious that a sick person cannot learn properly. Poor sanitation could also lead to waterborne diseases (like typhoid, cholera,), infections with intestinal worms, stunted growth and malnutrition.

(Sharma, 2015). More than five million people die each year from diseases related to inadequate waste disposal systems (WHO, 2007).There are so many indications of poor sanitation in most institutions.

Types of Sanitation

Sanitation system generally involves faeces collection, transport and treatment (Sustainable Sanitation Alliance, 2008).The main objectives of a sanitation system is to protect and promote human health by providing a clean environment and breaking the cycle of disease. In choosing the particular system to use, a lot of factors have to be considered. The factors to be considered include; experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment and reuse or disposal of wastes. Not minding the type of system chosen, sanitation is of various types.

Sanitation types are many. The various types of sanitation include, community led total sanitation, dry sanitation, ecological sanitation, and environmental sanitation. (AKUT Sustainable Sanitation, 2014 as cited in Sanni, 2015) The author went further to give a brief description of each of the types.

Community-Led Total Sanitation (CLTS) is an approach to achieve behaviour change in mainly rural people by a process of triggering behaviour change, leading to spontaneous and long-term abandonment of open defecation practices. CLTS takes an

approach to rural sanitation by ensuring communities recognize the problem of open defecation and take collective action to clean up and become "open defecation free. The second type called dry sanitation usually means sanitation systems with dry toilets which have urine diversion, in particular the urine-diverting dry toilet. The third type called the Ecological sanitation commonly abbreviated to ecosan, is an approach, rather than a technology or a device which is characterized by a desire to "close the loop" (mainly for the nutrients and organic matter) between sanitation and agriculture in a safe manner. Put in other words, Ecosan systems safely recycle excreta resources (plant nutrients and organic matter) to crop production in such a way that the use of non-renewable resources is minimised. When properly designed and operated, ecosan systems provide a hygienically safe, economical, and closed-loop system which converts human excreta into nutrients to be returned to the soil, and water to be returned to the land. Finally, Environmental sanitation encompasses the control of environmental factors that are connected to disease transmission. Subsets of this category are solid waste management, water and wastewater treatment, industrial waste treatment and noise and pollution control.

Environmental Sanitation

Environmental Sanitation is a means to manage human waste at average cost, time and space. This will require the concern of many disciplines such as town planning,

architecture, estate surveying, law, quality assurance and control, public health and human psychology. The involvement of many disciplines will amount to variants of agreements and disagreements which affects the beneficiaries without any exception (Mara, Lane, Scott, & Trouba, 2010).

Environmental Sanitation is a means to manage human waste at average cost, time and space. This will require the concern of many disciplines such as town planning, architecture, estate surveying, law, quality assurance and control, public health and human psychology. The involvement of many disciplines will amount to variants of agreements and disagreements which affects the beneficiaries without any exception. As academic inhabitants usage are more than ordinary individuals as it includes watering of flower and vegetables, recreation and entertainment, ornamental decoration, sewage disposal, carrying out of laboratory tests and so on. This author equally disagreed with Zubair (2009) who sees sanitary surveying as support necessary for environmental health.

As he opined that the need for identification of water quality are the only essentials for environmental sanitation and hygiene. But it is the inadequacy of environmental sanitation that is responsible for recurring of health issues been faced in the hostels (Babatunde, Owolabi, Olalekun and Bolanle (2012) and (Adejuwon 2014). In addition, Sanni (2015) looked at user's acceptance education as one of the factors

influencing implementation of environmental sanitation. This author therefore sees this framework as a necessity to make meaningful decision in the life of academic community and beyond. Also a good deal of empirical research on recycling and re-using behaviour is imminent as a way out of separating usable items from real waste of no appreciable market value. The buyback concept of eliminating menace of paper/nylon waste, empty bottles, plastics, machines scraps and polythene related products in towns and cities is a testimony to this meaningful postulation. This is to create a new conservation and re-use culture in academic environment through various empirical researches that can be supported by International bodies, as it was done in Kenya and Nairobi. In these two countries used engine oil by vehicles were converted into cash, turning pollutant into an income supplements and encouraging mechanics to collect used oil instead of discharging it into the body of water (Environmental matters, 2005).

Importance of Sanitation

According to Sanni (2015), the success and importance of personal and environmental sanitation are highlighted below;

- To reduce the occurrence of diseases and number of death tolls associated with poor hygiene.

- To improve upon poor sanitation, inadequate toilets, lack of understanding about the importance of toilet and sanitation, current poverty level, and low level investment by all tier of governments and local communities.
- To make government and the governed understand the concept of environmental sanitation and sustainability which is more of a journey rather than a stage to reach?
- To bring a reversal to options of either you buy water or drink polluted one this can be done by having more toilets so that drinking water can be separated from waste water.
- To make sure that there is sufficient and regular supply of safe water to all houses, offices and student hostels without any stress to guarantee well- being of students and staff.

Brief History of University of Benin Hostel

The University of Benin Hostel was established in 1970, when the university was founded. The idea of University of Benin hostel was to serve as an abode for the various students on long-term stay on the premises. The hostel which is allocated to students admitted into the institution has about Four hundred (400) rooms with utility facilities. It also has basic sleeping facilities such as a bed, storage facilities, wash hand basin, and toilet and bathrooms for everyone to use. In University of Benin, the

hostel has an occupancy capacity of four (8) persons in each room and twenty (40) students for each of toilet and bath facilities. The hostel is managed by the administration in conjunction with the hostel warden and supervisors. Each cleaner is also allocated to one block for proper cleaning exercise in order to maintain hygiene and sanitation. Hostels are houses or halls of residence for groups who have specific needs, as students, young workers, tourists and organized parties. It was again said that, majority of the hostels came into existence in response to demand for safety.

Hostel Sanitation, Students Health And Challenges

Adequate sanitation, good hygiene and safe water, are fundamental to health and social economic development (Mara, Lane, Scott, & Trouba, 2010). Having access to improved sanitation in the hostel results in lower health system costs, fewer days lost at school through illness and care for the sick, reduced queue time at shared sanitation facilities, and eliminating open defecation (Galan, Kim, & Graham, 2013). Poor sanitation, hygiene, and water accounts for 50% of the consequences of students underweight and death, because it strengthens the synergy between diarrheal diseases and under nutrition. This means that the exposure to one condition, increases vulnerability to the other (Bastien, Hetherington, Hatfield, Kutz, & Manyama, 2016).

The Hostel facilities of most tertiary institutions in Nigeria have been are not in premium conditions. In some situations, Hostels are not provided for students or the

Hostel facility is inadequate. Overcrowding of students due to increased numbers further compounds the problem of limited living space. Additionally, waste management in some student hostels is not the best; students are therefore exposed to a risk of food borne disease as result of varied factors. Yet, research in Nigeria on food safety knowledge of tertiary students, their food handling practices and sanitary conditions of their hostels is very minimal. The attention has mainly been on restaurant operators and street food vendors. According Babatunde, Owolabi, Olalekun and Bolanle (2012) educating the general public can quickly and significantly reduce the chances of contracting food-borne illnesses and the effects of outbreaks, improve public health and safety and reduce financial drainage of the health sector. In this regard, colleges and universities can be ideal settings for food safety interventions because students are still forming lifestyle patterns and they can eventually become ambassadors in their communities (Adejuwon, 2014)

Hostel Sanitation Problems

According to Ibadan Study Series (1983), sanitation problems refer to conditions in our environment which affect our health especially those which have to do with dirt and infections. If we look around us in our cities, towns and villages, we see several conditions which encourage dirt and the spread of infections. We seem so helpless about what to do yet this condition do exist simply because of our individual's habits and actions. It may be suggested that most students are not adequately educated about

health to know that our environment is what we make of it, and that government expects us to play our own part in keeping it healthy even while we look up to them to govern for leadership.

According to WHO (1974) infectious diseases are only one type of health threat. During the last 25 years, citizens have become more aware of health problems in the environment. The environment is made up of all the living and men living things surrounding an individual of a community. Environmental health problems are often caused by pollution is the dirtying of the air, water, or soil by chemicals, disease, or waste products. Many forms of pollution have been linked with sties diseases, including cancer, since the 1960s local, State, and national Governments have passed many laws to clean up and protect the environment. Despite much progress, pollution continues to be a health problem today.

Bello (2007) stated that, sanitation is the act of controlling a person's surroundings to promote health and comfort or the protection and preservation of public health. According to WHO (1974) since environment concerns all the conditions that surround person, environmental sanitation is broadly concerned with environmental and public health. It includes sewage disposal, personal and food hygiene, provision of clean water, domestic waste disposal, industrial pollution, housing and control of infectious diseases. All these environmental surrounding are more interrelated and

must be protected in order to improve physical comfort and increase the life-span of man.

The word environmental sanitation has a lot of meaning depending on the orientation of who defines environmental sanitation. The architect defines it on physicals sphere, while the sociologists, psychologists, and of course, the Medical personnel will define it beyond physical sphere. They will go a long way to including even the family and other socializing institutions (Akinjide, 1997).

Environment is the aggregate of all external condition and influences affecting the life development of organism e.g. human being. While sanitation is the science of controlling man's surrounding to promote health and comfort. It includes purifying water, removing wastes and inspecting foods (Akinjide, 1997). Environmental sanitation is defined as the cleanliness of environment, the removal of refuse and anything that is injurious both liquid and solid waste, purification of air, the supply and protection of portable water, good housing, streets and environmental noise control. Ahmed (1994) defined environmental sanitation as the process of cleansing, tidying and beautifying the environment for the purpose of controlling, communicable diseases and promotes optimal health.

Daramola (2012) stressed that human living generate waste, students not. These wastes are generated from house hold wastes, industrial wastes, agricultural wastes,

extraction wastes and sewage. These wastes include specifically papers, plastics, metals, glasses fabrics, wood, food peels and its remnants, dead animals. Daramola (2012) stated that since environment concerns all the conditions that surround a person, environmental sanitation is broadly concerned with environmental and public health. It includes sewage disposal, personal and food hygiene, provision of clean water, domestic disposal, industrial pollution, housing and control of infectious diseases. Daramola (2012) further said, environment is the aggregate of all external condition and influences affecting the life development of organism e.g. human being.

Achi (2002) stressed that sanitation is the science of controlling man and his surrounding to promote health and comfort. It includes purifying water, removing and inspecting foods. This study was planned to assess the health knowledge and practice of environmental sanitation among the students of tertiary institution.

Strategies to Improve Environmental Sanitation in School Hostels

According to Nkom and Essien (2002), strategies to improve environmental sanitation the following:

- Sanitation needs to be addressed as a whole including improvement of facilities, environmental conditions and behavioral change.

- Sanitation programmes should be demand based and the community should be fully involved in the process. High risk group should be identified for better targeting of funds and efforts;
- Sanitation should be a component of other health promoting or disease control programmes.
- Awareness needs to be raised and sanitation set as a priority in national and local government and also in the population at large. Systems have to be sustainable cost sharing and cost recovery need to be addressed carefully.

Sanitation is the protection and improvement of society by organized community effort. It is a broad field employed not only by doctors and nurses but sanitary engineers, veterinarians, industrial chemist, microbiologists, statisticians, behavioural scientists, economists, educations, nutritionists and laboratory technicians. Many areas of research are involved in the field of sanitation including vital statistics, epidemiology social analysis and health economics (Adewole, 1999).

Hygiene Education Programmes

Studies have shown that the simple practice of hand washing with soap can reduce the risk of diarrhoeal diseases by 42-47% (Mooijman 2003). Therefore, the implementation of hygiene education programs in conjunction with sanitation technologies is critical to ensure a sustainable solution to community health problems. Hygiene education programs are designed to demonstrate the link between sanitation,

hygiene, health and economic prosperity so as to promote the importance of good hygiene practice to a community (UN-Water 2004). The AusAID Community Water Supply and Sanitation (CWSSP) program in Timor-Leste, have identified five key hygiene related behaviours which should be emphasised in hygiene education programs (Dwan, 2006). These are to:

1. Cover water containers to keep water clean;

2. Build latrines;

3. Practice hand washing;

4. Keep animals in pens; and

5. Clean up around the community - especially mosquito breeding sites.

Hygiene promotion should target a small number of risk practices, and specific audiences (Curtis, 2005). It has been shown to be most effective when targeting youth as younger populations not only benefit from the information but act as information providers to their families and communities (UN-Water 2004). As a result hygiene education campaigns are often used to target schools and can be combined into school curricula. In order to be most effective the motives for behaviour change, such as social status or consumer demand should be identified as tools to help drive change (Cairncross & Kolsky, 2003; Curtis, 2005). In addition hygiene education should be designed so that it provides a positive message, i.e. not message of ill-health, death and doctors (Curtis, 2005; Mooijman, 2003). Often campaigns use music, radio or

drama to demonstrate the message and this is most effective in holding a young audience's attention.

In addition to the five key hygiene behaviours there are five fallacies relating to hygiene promotion which should be considered. These are that:

1. Behaviour change is easy

2. Knowledge change = behaviour change

3. Experts know how to change behaviour

4. A whole variety of hygiene practices should be encouraged

5. Hygiene promotion is a cheap add-on to water programmes (Curtis, 2005).

Acknowledging and understanding the issues associated with these five points is critical to directing the approach undertaken for hygiene education. The difficulty associated with generating behaviour change can be attributed to many factors such as change being too time consuming or expensive (Curtis 2005). In addition getting communities to change traditional practices takes large amount of time, resources and skills and often requires generational change. Fallacy 3 relates to the importance that the educational approach is designed around the specific needs, wants and situation of the community (Curtis, 2005).

Therefore it is important that thorough studies are undertaken to understand the community's attitudes and traditional beliefs to defecation, anal cleansing, water

quality and cleanliness (Dwan, 2006). The key message theses fallacies raise is that hygiene promotion requires careful planning, a large amount of resources and skills and should be able to stand alone as a solution to reducing morbidity and mortality within a community.

Factors Influencing Sanitation

According to Institute of Education, University of Ibadan (1983), conditions of modern way of life have created many problems relating to man's environment. They identify three sub-factors of environment which affect the human health, namely; physical factors and biological factors. Examples of physical factors, whether, climate, housing, soil, water and food supply, air (clean or polluted) and other physical things surrounding us. Examples of biological factors were given as germs, insects, rodents, plants, animals and even human beings.

Physical Environment Factors

According to Umoh (2002), physical environment refers to the non-living part of the environment: air, water, soil, waste, mineral salts, furniture, housing, food items, and climatic factors such as temperature, humidity, sunshine, rainfall, etc.

Air is essentially necessary for life to exist. This is the reason why adequate ventilation is a fundamental consideration in the design of residential housing. Air is

polluted when there is the presence of substances there in quantities, characteristics of duration, such that may affect health of human beings, animals, plants, properties and structures.

Water bodies from the home of fishes and some other aquatic life. Our water environment must be clean if these life forms will function most effectively. To reduce water related infections, water required for domestic use must be wholesome or pure.

Land is a very vital natural resources, which is the home of our mineral resources, terrestrial animals, valuable forestry resources and important factors for our physical development, etc. It is therefore very necessary that the soil be protected. The Institute of Water and Environmental Management underscored the need to protect our land from pollution through effective waste management. Umoh (2002) classified physical environment factors as follows: climate, attitude, soil, air, chemical, radiation.

Climatic Factors: Is divided into six categories: temperature, rainfall, relative – humanidity, sunlight, wind speed. He said that during hamartan, low relative humidity and high wind speed predispose to respiratory tract infections. During the rainy season, high temperature and humidity allow for rapid proliferation of arthropod vectors (ticks and insects) leading epidemics of vector borne disease, and six development of helminth larvae.

According to Umoh (2002), decrease in air pressure may lead nitrogen bubbles in bloodstream resulting in “bends”. Poorly constructed houses may predispose to disease. In general, climate variations in a given geographic area may markedly influence the epidemiological patterns of certain infections severe climatic extremes may have direct on man resulting in morbidity and even mortality.

Components of Environmental Health

The kind of environment which we live poses a kind of menace to our health, the air we breathe is constantly polluted with carbon monoxide from motorists, factories and industries. The water we drink is always half-way purified due to unconventional attitudes by some of those entrusted with the work. Most of the food is either not nutritious or polluted right from the source up to consumer end. The land we use is always polluted as a result of some people’s behaviour of indiscriminate urination and defecation; the houses of most of our people are not adequately planned for ventilation and drainage which creates intensive heat and formation of many stagnant gutters where mosquitoes and other insects breed. Most of our peoples’ life-style is discouraging because it endangers the health of the others. Smoking, drinking of alcohol, excessive eating of fatty food, sedentary life – style, unhygienic living, drug-abusing and excessive work without adequate rest and sleep, lack of love and trust

among many people, poverty are indices that denies many people the right to live hygienically.

All these environmental factors contribute immensely to the health problems facing our people. There is constant outbreak of microscopic organism diseases such as cholera, typhoid fever, and meningitis in strategic places. Rodent's nuisance, outbreak of malaria infections, sleeping sickness, obesity, and heart diseases are common feature in our society. The cause of these health problems is attributed to both microorganism and peoples' behaviour. However, in the actual sense, people's behaviour is the predominant feature in the diseases causative trend, because if people attitudinal patterns will change from what we are seeing now, most, if not all of the above health problems will be eradicated. Although, tragically, the way people live is all too frequently characterized by ignorance and misinformation regarding health matters. Therefore life style and misinformation are learned phenomena, the ones which result in self-inflicted diseases and those wrong information received can be replaced by new and more beneficial ones, by means of health education.

Safe Water Supply

Adi (2009) stated that safe drinking water is that which is "wholesome and pot prejudicial to health". Simplicity in this definition is the requirement that the water is without risk of causing chemical irritation or intoxication and microbial infection. The

safest water is perhaps the treated pipe borne water, but since this is not available to the majority of the population, deep wells and springs are recommended especially for the people in the rural areas, where water must be fetched from surface sources such as rivers, lakes and streams known to be contaminated with human waste. It is absolutely necessary that any of the methods for purification of water be adopted. For example, the heat destroys bacteria. Boiling of water for some minutes will completed sterilize it and make it safe for drinking.

Other methods include filtration and disinfections. Filtration is done with a clean white piece of cloth spread over a clean container and suspected water poured over it. The piece of cloth then suspended particles in water. The disinfections involved the use of chemicals such as “tincture of iodine” and chlorine solution (made from chloride of lime). Alum has been known to be used in purification also. It is important to point out that when the quality of water is not certain, it is advisable to boil and strain it before consumption. Sanitary supervision of water supplies is necessary in order to ensure their safety for drinking purpose. Investigation of small individual sources of supply is a simple procedure and their safety can usually be determined by careful observation without examination of the water. Local officials or the owner, with the aid of the information which is furnished in health department bulletins on the location, construction and operation of private supplies, can usually pass upon the safety of small private wells, springs etc. A public health engineer who is competent

to make correct field observations and interpret results should investigate the more complicated water supplies.

According to Institute of WHO the safe water is perhaps the treated pipe – borne water, but since this is not available to the majority of the population, deep wells and springs are recommended especially for people in the rural areas. Where water must be fetched from surface sources such as rivers, lakes and streams known to be contaminated with human wastes, it is absolutely necessary that it undergo purification processes.

Water Borne Diseases

According to Umoh (2002), diseases – producing germs do not normally multiply in water, but they can survive in water and remain in a state that can set up an infection in a new host. Water serves as an important vehicle for the transfer of diseases of the alimentary canal as well as of worms, such as guineaworm or hook-worms. But the four major infections which are transmitted through water, notably by drinking or eating any food washed with infected water, are typhoid fever, paratyphoid, cholera and bacillary. Other infections are amoebic dysentery, poliomyelitis and hepatitis, although it is not generally agreed in medical circles that they are usually also transmitted through consumption of contaminated water.

Typhoid Fever

According to Nwanta and Achi (2002) typhoid fever is caused by a bacillus, which sets up an infection in the intestinal tract and then enters the blood to be carried to all parts of the body. During the course of this disease, ulcers of the intestine develop which may lead to severe bleeding of perforation intestinal contents to get into the abdominal cavity with resulting peritonitis. Ten percent of typhoid fever patients die. In the past, typhoid fever was an exceedingly prevalent disease in the country, but improved sanitation has almost completely eradicated it. The danger of typhoid fever, however, will remain for many years and outbreaks can be expected whenever sanitation precaution is relaxed.

Typhoid carriers cause most outbreaks of typhoid fever. These are individuals who, although apparently perfectly well, harbor the germs in their bodies and discharge them with their excreta. One or two percent of person who recovered from typhoid bacilli become carriers of typhoid for years or for life. Some of these contaminate water or milk supplies. Others engage in food handling and though soiled hands contaminate food which may serve as a source of infection for others.

The control of typhoid fever has been one of the great achievements of public health. We must assume that sources of infection still exist, and take precaution accordingly.

All sewage must be considered infectious and all rivers which pass through urban communities must be considered contaminated.

When traveling in foreign countries, individual resistance to typhoid should be increased by the use of typhoid vaccine. In addition, we should use only milk products which have been pasteurized or boiled water not known to be safe, such as one encounters when touring of camping, should be boiled for otherwise disinfected.

Empirical Review

Ikhioya (2018) assessed the sanitation conditions and its impacts on health status of hostellers in Ambrose Alli University. Using a random sampling technique, 100 students were selected for the study. Data were collected with the aid of self-administered questionnaire and analysed using descriptive statistical techniques. The majority of the students (58%) were impressed with services rendered by the cleaners with respect to keeping the bathrooms and its environs clean. 62% of the students' respondents stated that the environments and the hotel toilets is cleaned on daily basis. Although from the research there were indications that the cleaners have issues in acquiring their materials for executing their duties. About 75% of the respondents who at one time had complaints with the conditions of the hostel experienced delayed responses; 69 percent of the student respondents reported that at one point in time

they had suffered some health issues which includes malaria, typhoid, dysentery, although no case of food poisoning was recorded.

Duru, Iwu, Diwe, Uwakwe, Merenu, Madubueze, Okedo-alex, Ndukwu, Ohale and Nwaigbo (2017) examined environmental sanitation practices. cross sectional descriptive design using a multistage random sampling technique to select 426 participants from households and business premises in semi-urban communities in Orlu Local Government Area of Imo State. Data was collected using a pretested, semi structured, interviewer administered questionnaire. Descriptive analyses were done with frequencies and summary statistics to assess the respondents' knowledge, attitude and practices of environmental sanitation. Results: The results revealed that the mean age of the respondents' was 37.0 ± 2.2 with a male to female ratio of 1:1.2. Despite high awareness about environmental sanitation (95.0%) reported among the respondents, proportion of them with good knowledge about environmental sanitation (22.9%), attitude (38.6%) and practice (20.8%) towards environmental sanitation was low.

Faiza, Wanjala, Shaviya, Barasa, Sowayi, Vincent, Johnston and Josphat (2015) conducted a research on state of sanitation and hygiene of public primary schools in Kakamega municipality, Western Kenya and observed that children spend much of their daily activities within school environment during critical developmental stages,

it is crucial that the same environment be kept clean. According to them, most schools had clean compounds while some of the schools had compost pits filled up wastes which resulted in a pile of solid wastes in the school compound indicating poor solid waste management in schools. Since children lack experience to determine risks associated with their behaviours, such presence of wastes posed health risks to them. These behaviours include playing with waste, placing their fingers and other objects in the mouth and not washing hands before eating and after visiting the latrine. Preventing childhood exposure to environmental hazards may prevent injuries and many illnesses, such as respiratory infections and diarrhea diseases.

Munir (2015) examined the sanitation and its health hazards in Polythenics in Ibadan. The data sample size of 250 respondents drawn through random sampling technique was adopted. in this order: 12% were administered to staff at the Health Centre, 20% to staff of Works and Service Units, and 16% to staff in other Departments. The remaining 52% were administered to Students. The data were analyzed using simple descriptive statistical tables and percentages. The secondary data for this work were obtained from Health Centers' documents, literature reviews of related works and text books .The findings of the work revealed that sanitation habit is a way of life in The Polytechnic, Ibadan. This community supported the factor of ensuring a safe and hygienic condition as the reason for consideration with (38%) response. Other factors such as societal values (32%) and mass media (40%) are much more significant to

this people than government policies .Also the choice of technological practices is a function of financial capability as it attracted highest attention of 30% responses. It was noted that academic environment favors this programme than urban settlement because of intellectual innovation and creativity of ideas

Latha and Ranganath (2014) work on assessment of environmental sanitation: coordination among service providers at district level in Kolar, India, they opined that to achieve good environmental sanitation which is an essential component of primary health care, intersectoral coordination is the most appropriate principle to be executed. But intersectoral coordination is likely to happen more often during emergencies such as epidemics rather than on routine basis. The intersectional co-ordination is important in activities of monitoring, surveillance, fund allocation, health education and reducing duplication of work.

Pore and Randive (2014) carried out a study on environmental sanitation and personal hygiene among the slum area in Solapur city, Maharashtra India and observed that the lack of environmental sanitation and safe water has significant negative health impact on people and due to unsafe water, inadequate sanitation and unhygienic, people suffer from allergies, and diseases. According to them, unsafe drinking water, poor environmental sanitation, unsanitary food preparation, improper disposal of waste and

unclean household environment constitute a major burden on health and leading to causes ill health in children.

Anijaobi-Idem,Ukata and Bisong's (2015) work on environmental awareness and school sanitation in Calabar metropolis of Cross River State, Nigeria, they opined that the desire and need of school personal to maintain a healthy school environment depends completely on their level of awareness concerning the environment. School personnel who are aware that the environment is part of their existence tend to make their schools convenient and conducive for teaching and learning with the availability of ecofriendly facilities. Ibanga (2015), his research on assessment of environmental sanitation in an urban community of southern Nigeria, asserted that there is no significant difference between the odd participation of good environmental sanitation and practice between higher and lower educational qualification. He also stated that participation of males in sanitation is higher than that of the females.

Mahami and Odonkor (2012) investigated food safety risks associated with tertiary students in hostels. Questions were asked on the demographic characteristics, hand washing practices, separation of raw and cooked foods, cooking of foods, thawing and cooling of foods, consumption of high risk foods and the design and sanitation of hostels of 210 respondents from 4 tertiary institutions in Accra. Majority (66.67%) of respondents were within 21-30 years, 16.19% were within 15-20 years, 16.19%

within 31-40 years and 0.95% above 40 years. The mean age of respondents was 21 years, A third (33.33%) of the sampled population followed each of the programs; health related programs, non-health related science-based programs and other programs. Female respondents were 50% as well as male respondents. This study found low levels of awareness of cross-contamination, high-risk food items and a worrying level of awareness of appropriate hand hygiene among students. Additionally, nonexistent or inadequate hostel facilities were also reported from the hostels of respondents coupled with poor sanitation at some of the hostels. For a sustainable reduction of food borne diseases there is the need to embark on food safety education of all stake holders.

Summary of Literature Review

In this chapter, the related literature to health and environmental sanitation were reviewed. Health involves the control of adequate drinking water supply, sewage (human waste) and refuse disposal; protection of food we eat, housing, the control of insects rodents and pollution generated from wastes. These control functions constitute a major aspect of hostel health control practices. The responsibility for such controls rest with the students, school authorities, lecturers and other staff in the school. The review also showed that the level of awareness of appropriate hygiene for not just students but others are worrying.

Environmental Sanitation is a means to manage human waste at average cost, time and space. This will require the concern of many disciplines such as planning, infrastructure, law, quality assurance and control, public health and human psychology. The availability of sanitary facilities goes a long way to putting health knowledge into action. The types of sanitation identified include feaces collection, transportation and treatment. The sanitary system in use also determines its effectiveness, the issues to be considered include; experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment and reuse or disposal of wastes. The major factors that influence sanitation are environmental (water, soil, waste, mineral salts) and climatic factors (rainfall, temperature).

The state of the hostels in Nigerian universities are not in top conditions and the strategies to help improve this include sanitation as a health promoting or disease control programme, providing adequate funds to improve and renovate existing facilities, raising awareness and ensure sanitation is a priority and so on. This is to ensure sanitary practices are taken serious by students and workers alike in the university environment.

CHAPTER THREE

METHODOLOGY

This chapter presents the description of the method and procedures used in carrying out this study which is presented under the following sub-headings;

- Research Design
- Population of the Study
- Sampling size and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

The research design that was adopted in this study is the descriptive survey research design. This is to enable the researcher gather relevant information from large number of respondents. According to Osuala (2003), it is stated that when a research is centered on individuals and their perceptions, beliefs, attitudes, motivations and behaviours, the survey research method is most appropriate.

Population of the Study

The target population of study consist of students resident in the hostels (halls 1-5) in the University of Benin, Benin City, Edo state.

Name of Hostel	**Total Number of Students**
Hall 1	1,200
Hall 2	1,920
Hall 3	1,920
Hall 4	1,653
Hall 5 (male)	120
Hall 5(female)	120
Hall 6	300
Total	**7,233**

Source: Students Affairs Division Record, 2019

Sampling and Sampling Technique

The sample size of one hundred and fifty students who stay in the hostels was selected for the study. Hall 1-5 was selected for the study and 25 students were selected randomly from each of the hostels sampled.

Name of Hostel	Total Number of Students	Sample
Hall 1	1,200	25
Hall 2	1,920	25
Hall 3	1,920	25
Hall 4	1,653	25
Hall 5 (male)	120	25
Hall 5(female)	120	25
Total	**7,233**	**150**

Research Instrument

The instrument for data collection for this research is the questionnaire which was administered to respondents. The questionnaire was divided into two sections. The first part (section A) comprised of questions which reflects the socio-demographic characteristics of the respondents while The second part (section B) consists of questions which was designed to elicit responses on Hostel Sanitation Practice and its effect on Students health in University of Benin, Benin City.

Validity of the Instrument

Content validity of the questionnaire was done by the researcher's supervisor and two other lecturers in the department. Their suggestions and criticisms was incorporated into the final draft of the questionnaire.

Reliability of the Instrument

The reliability of the instrument was ascertained using test-retest method. The questionnaire was administered to 20 respondents selected from the target population and after an interval of two weeks re-administered to the same target population. The reliability was collated using Cronbach Alpha and a reliability co-efficient of 0.70 and above is the acceptable benchmark.

Method of Data Collection

The questionnaire was used to collect data for the study and upon completion it was collected immediately to ensure a hundred percent return. The researcher administered the questionnaire to the students with the aid of two trained research assistants.

Method of Data Analysis

The completed questionnaire was analysed using descriptive statistics of frequency count and percentage.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

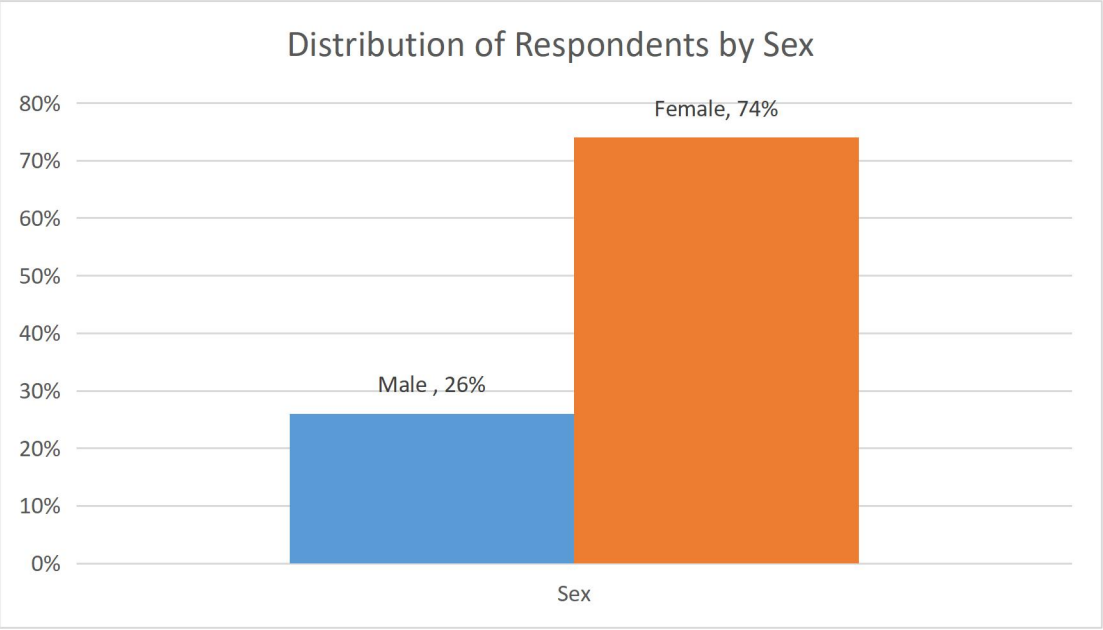
The results of the data collected and analyzed in this study are presented in the tables below for each research questions and corresponding hypotheses.

Presentation of Results

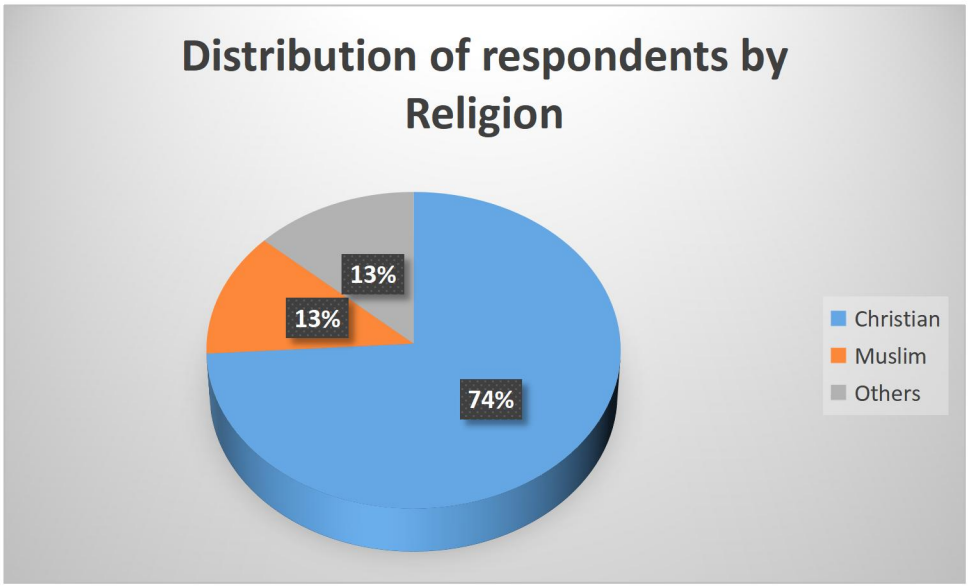
Demographic Data of Respondents

Variables in respondents in respect to demography such as sex, Religion and age range were measured by requesting respondent to fill the questionnaire in response to their bio data.

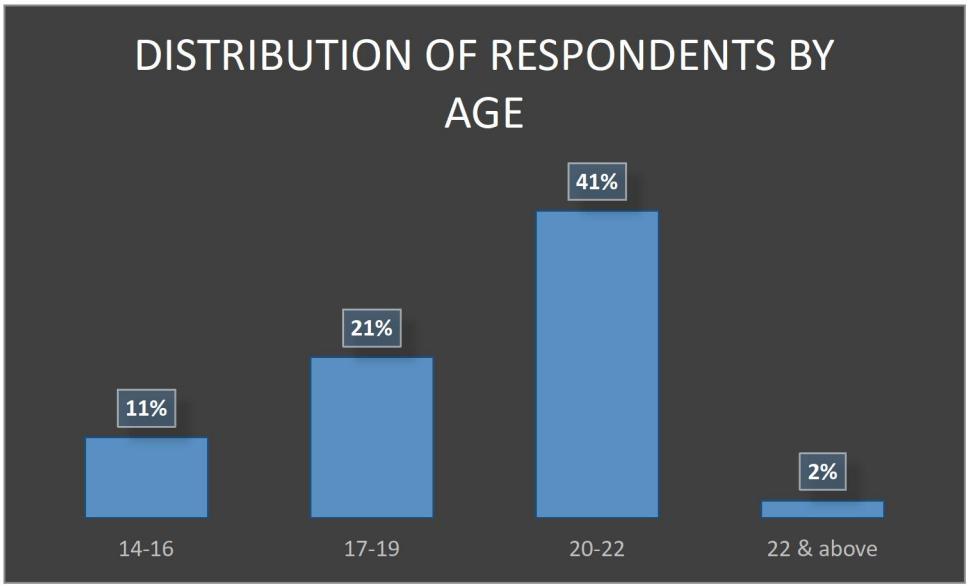
Demographic Data of Respondents



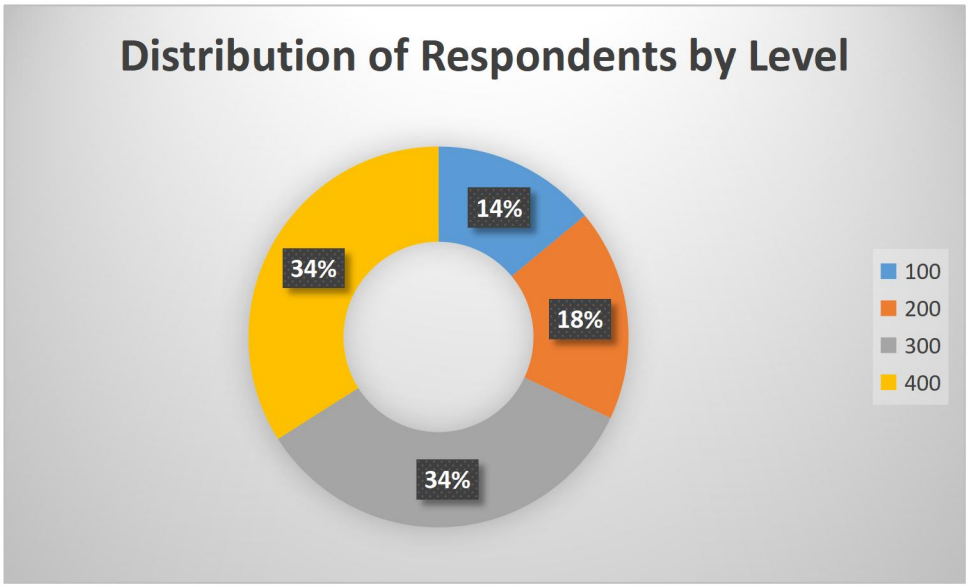
The diagram above shows the distribution of respondents by sex, 26% of the respondents are male while 76% of respondents are female.



In terms of religion, 74% of the respondents are Christians, 13% are females while 13% belong to other religions.



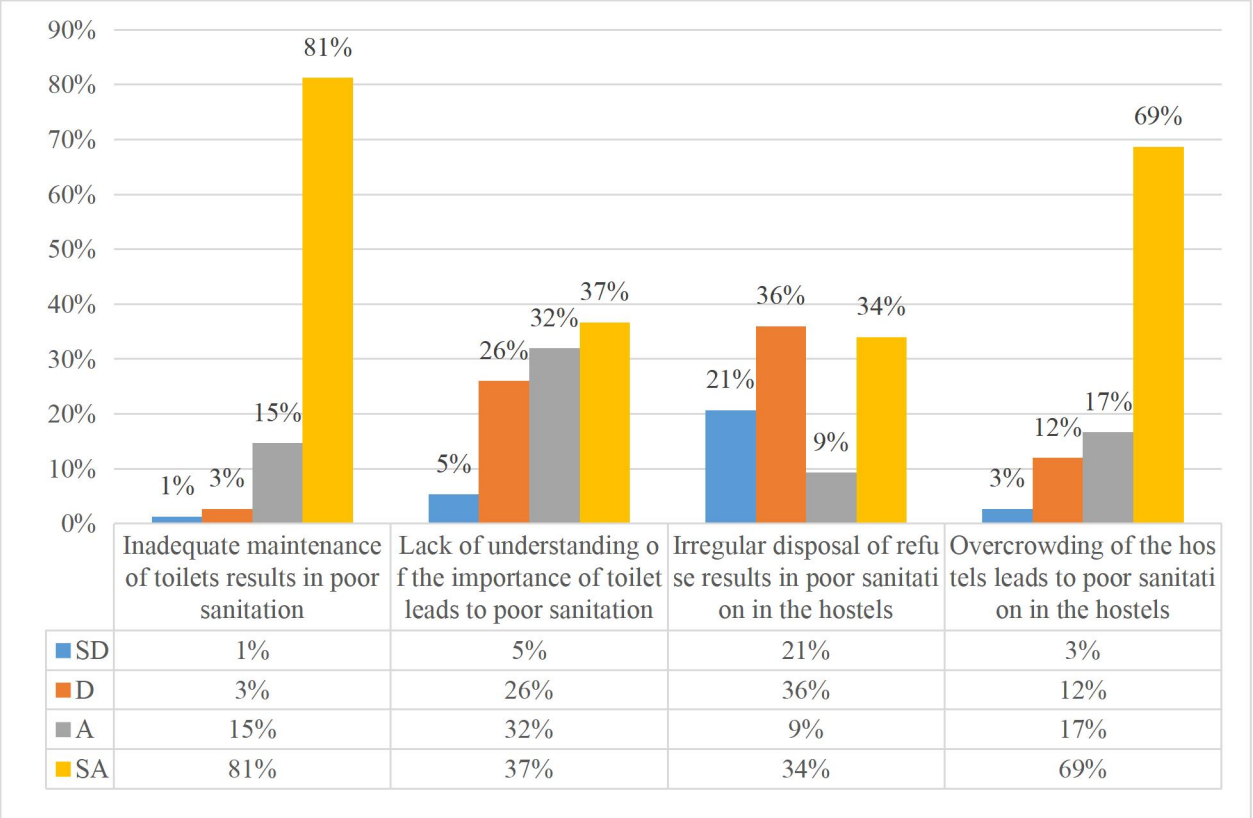
In terms of age, 11% of the respondents are aged 14-16, 21% of the respondents are aged 17-19, 41% are aged 20-22 while 2% are aged 22 and above.



In terms of level, 14% are in 100 level, 18% are in 200 level, 34% are in 300 level while 34% are in 400 level.

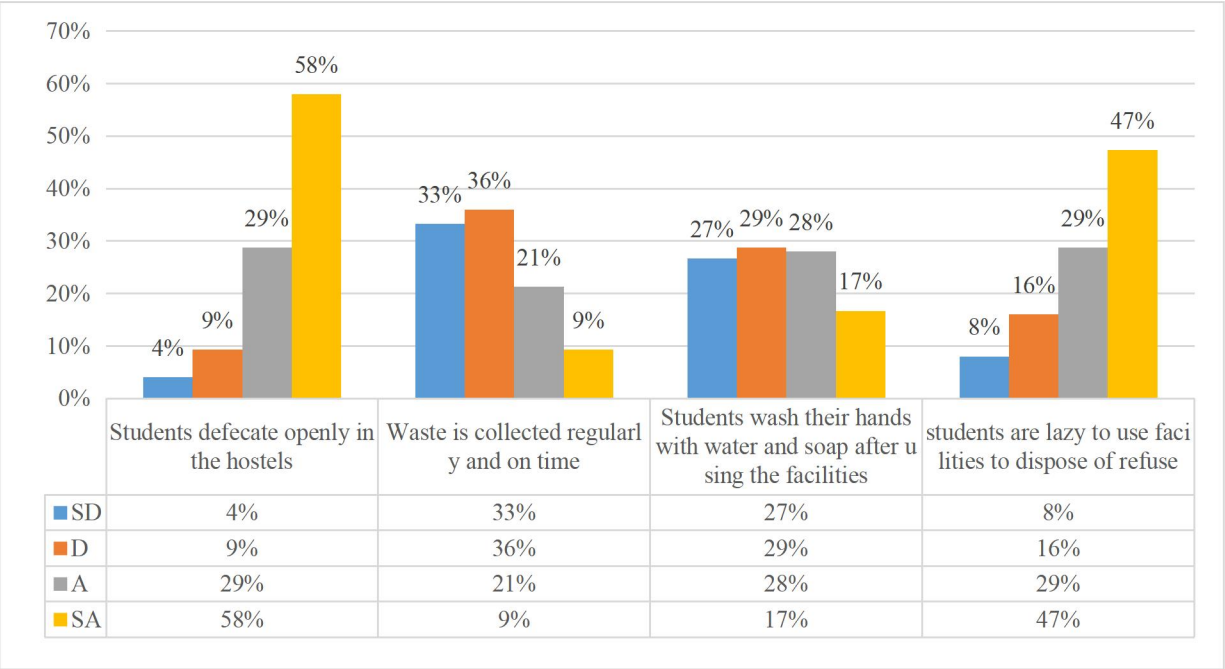
Research Question One: What are the causes of poor sanitation practice in the school hostel?

Table 1: Responses of respondents on causes of poor sanitation practice



The figure above shows the responses of respondents on the causes of poor sanitation practice. In regards to inadequate maintenance of toilets resulting in poor sanitation, 81% strongly agree, 15% agree while 3% disagree and 1% strongly disagree. In terms of the lack of understanding of the importance of toilet maintenance leading to poor sanitation, 37% strongly agree, 32% agree while 26% disagree and 5% strongly disagree. Irregular disposal refuse resulting in poor sanitation in the hostels, 34% strongly agree, 9% agree while 36% disagree and 21% strongly disagree. In relation to overcrowding of hostels leading to poor sanitation, 69% strongly agree, 17% agree while 12% disagree and 3% strongly disagree.

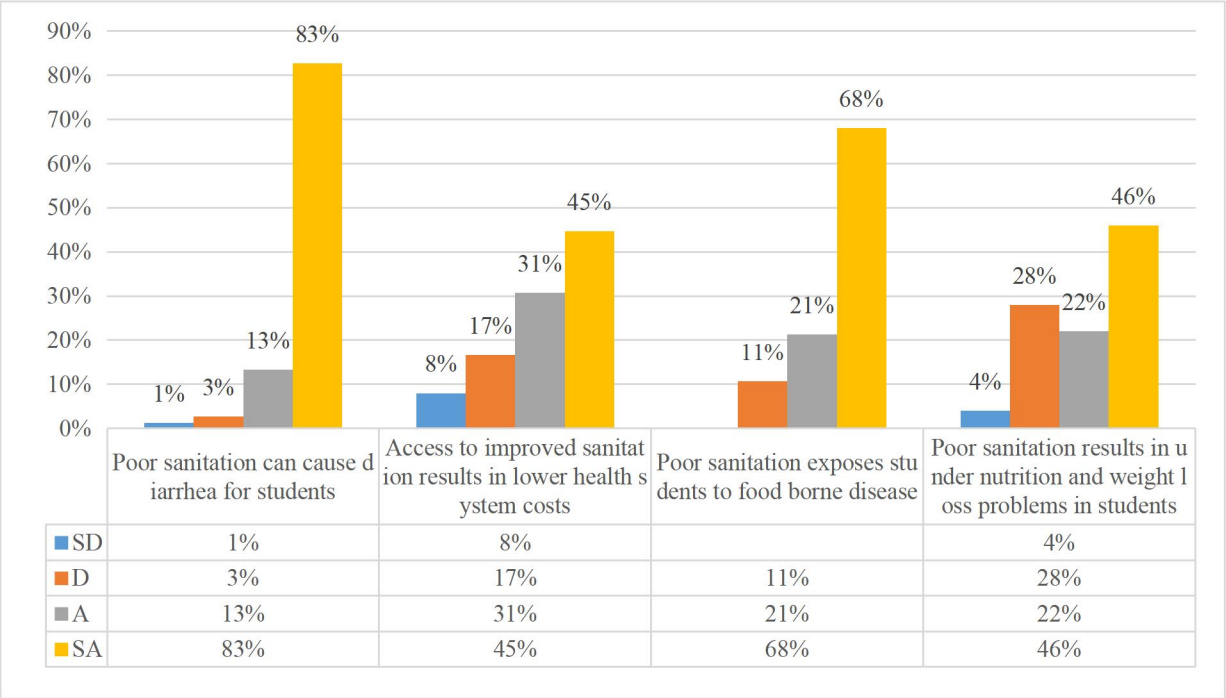
Research Question Two: What is the level of sanitation practice in the school hostel?



	Students defecate openly in the hostels	Waste is collected regularly and on time	Students wash their hands with water and soap after using the facilities	students are lazy to use facilities to dispose of refuse
SD	4%	33%	27%	8%
D	9%	36%	29%	16%
A	29%	21%	28%	29%
SA	58%	9%	17%	47%

In terms of the level of sanitation practices in the hostels, students defecating in the hostels, 58% strongly agree, 29% agree while 9% disagree and 4% strongly disagree. On waste being collected on time, 9% strongly agree, 21% agree while 36% disagree and 33% strongly disagree. The responses on students washing their hands with soap and water after using the facilities with 17% who strongly agree, 28% agree while 29% disagree and 27% strongly disagree. Students were found to be lazy in using the facilities to dispose refuse, with 47% strongly agree, 29% agree while 16% who disagree and 8% who strongly disagree.

Research Question Three: What is the effect of sanitation practices on student's health in the school hostel?

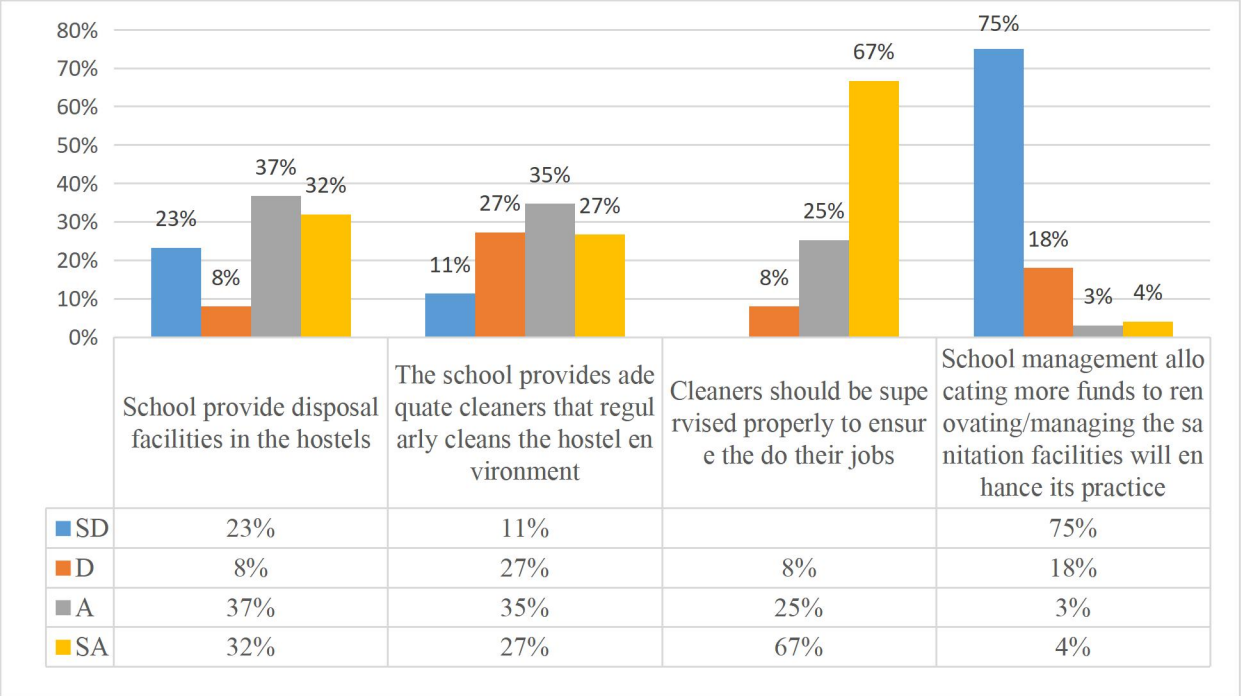


	Poor sanitation can cause diarrhea for students	Access to improved sanitation results in lower health system costs	Poor sanitation exposes students to food borne disease	Poor sanitation results in under nutrition and weight loss problems in students
SD	1%	8%		4%
D	3%	17%	11%	28%
A	13%	31%	21%	22%
SA	83%	45%	68%	46%

The diagram above shows the responses of respondents in relation to the effect of sanitation practice on student's health. Poor sanitation can cause diarrhea for students with 83% who strongly agree, 13% who agree while 3% disagree and 1% who strongly disagree. Access to improved sanitation results in lower health system cost, with 45% who strongly agree, 31% who agree while 17% disagree and 8% who strongly disagree. Poor sanitation exposes students to food borne diseases with 68% who strongly agree, 21% who agree while 11% who disagree. Poor sanitation leads to

undernutrition and weight loss problems in students with 46% who strongly agree, 22% who agree while 28% disagree and 4% who strongly disagree.

Research Question Four: To what extent have the school management contributed in providing facilities that will enhance sanitation practices?

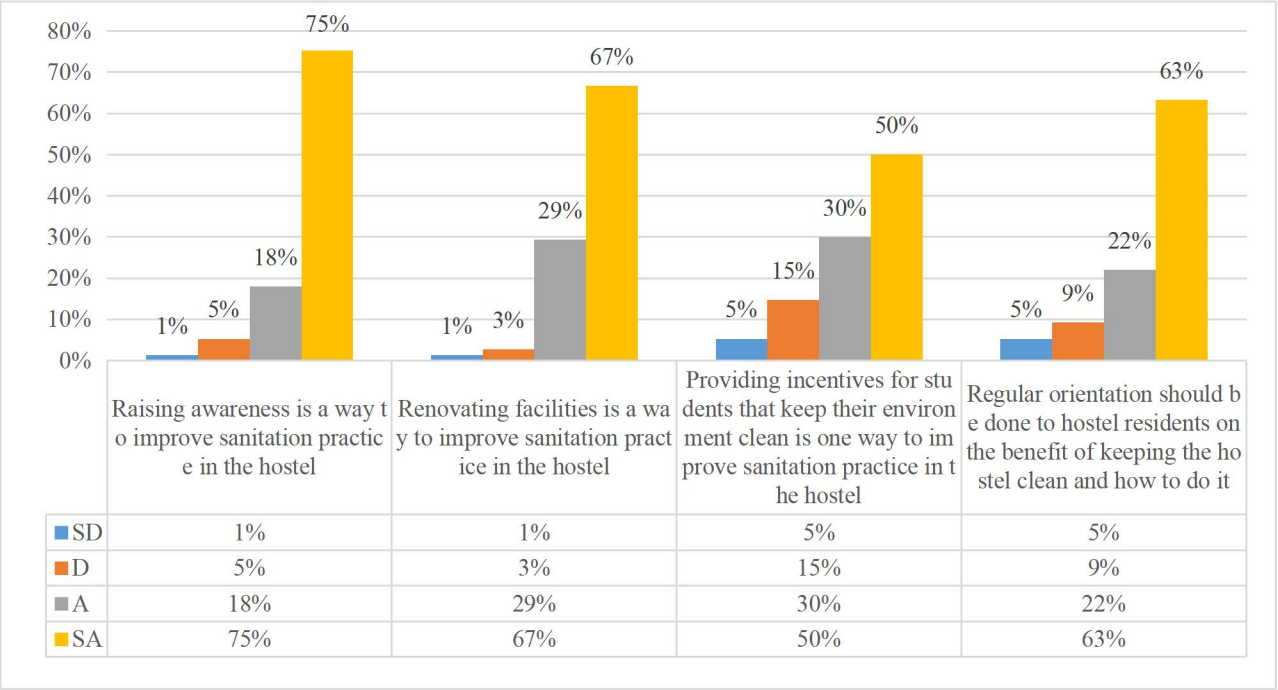


	School provide disposal facilities in the hostels	The school provides adequate cleaners that regularly cleans the hostel environment	Cleaners should be supervised properly to ensure the do their jobs	School management allocating more funds to renovating/managing the sanitation facilities will enhance its practice
SD	23%	11%		75%
D	8%	27%	8%	18%
A	37%	35%	25%	3%
SA	32%	27%	67%	4%

The diagram above shows the statistics of respondent's responses on school management providing facilities to enhance sanitation practices in the school. On school management providing disposal facilities, 32% strongly agree, 37% agree while 8% disagreed and 23% strongly disagreed. On school providing adequate cleaners that regularly maintains the hostel, 27% strongly agree, 35% agree while

27% disagree and 11% strongly disagree. Cleaners should be supervised adequately to ensure that they carry out their duties well, with 67% who strongly agree, 25% who agree while 8% disagree. On the school allocating more funds to renovating sanitation practice, 4% strongly disagreed agree, 3 % agreed while 18% disagreed and 75% strongly disagreed.

Research Question Five: What are the strategies that could be employed to improve sanitation in the hostels?



	Raising awareness is a way to improve sanitation practice in the hostel	Renovating facilities is a way to improve sanitation practice in the hostel	Providing incentives for students that keep their environment clean is one way to improve sanitation practice in the hostel	Regular orientation should be done to hostel residents on the benefit of keeping the hostel clean and how to do it
SD	1%	1%	5%	5%
D	5%	3%	15%	9%
A	18%	29%	30%	22%
SA	75%	67%	50%	63%

The figure above shows the responses on strategies to help enhance sanitation practices in the hostel. Raising awareness will help to improve sanitation practice in

the hostel with 75% who strongly agree, 18% who agree while 5% who disagree and 1% who strongly disagree. Renovating the facilities is another way to help improve sanitation practice in the hostel with 67% who strongly agree, 29% who agree while 3% who disagree and 1% who strongly disagree. Student should be given incentives to keep their environment clean as a way to improve sanitation practice with 50% who strongly agree, 30% who agree while 15% disagree and 5% strongly disagree. Regular orientation should be done to hostel residents on benefits of keeping the hostel clean, with 63% who strongly agree, 22% who agree while 9% who disagree and 5% who strongly disagree.

Discussion of Findings

Based on the analysis carried out, the following discussions ensued;

On causes of poor sanitation practice, it is discovered that there are a number of causes of poor sanitation in the hostels, among which are overcrowding, lack of understanding the importance of poor sanitation, inadequate maintenance of toilet facilities but it was also discovered that respondents lean towards the perception that irregular disposal of refuse lead to poor sanitation in the hostel. This is in line with the findings of Umoh (2002), Adogu, Uwakwe, Egenti, Okwuoha, and Nkwocha (2015) who state that the lack of knowledge on the need for sanitation practices by students and public in general results in the myriad of unsanitary practices that seem prevalent in the hostels. The possession of adequate knowledge by students and proper

maintenance of the facilities by the authorities is solely lacking and is causing the prevalence of unsanitary practices in and around the school environment.

On level of sanitation practice, it can be surmised therefore that the level of sanitation practices in the hostel is poor, with students found to be defecating openly in the hostel, waste not being collected on time, students not properly observing hygiene by washing their hands with water and soap and being lazy to use the right facilities available to dispose refuse. This finding is in tandem with those of Babatunde, Owolabi, Olalekun and Bolanle (2012) who state that regular disposal of refuse will help in significantly reduce the chances of contacting diseases or any kind of outbreaks that might occur.

On effect of sanitation practice on student's health, it is observed that poor sanitation practice has a negative effect on student's health, which leads to diarrhea, food borne diseases, weight loss and undernutrition. This finding is in line with those of Daramola (2012) and Achi (2002) who agree that controlling the environment, removing refuse, contaminated water have adverse effect on the health of those around the environment.

On the extent to which the school authorities have helped to contribute to sanitation practices in the hostel, it can be observed that the school to an extent provide disposal facilities for disposing refuse, provide adequate cleaners to help maintain these

facilities. It was also revealed that the cleaners should be supervised thoroughly to make them work well and the school need to allocate more funds to renovating the facilities in the school. This is in line with the findings of Nkom and Essien (2002) who state that when the proper authorities address the issue of sanitation in the hostel can be done through improvement of facilities, environmental conditions and behavioral change. Colleges and universities can be ideal settings for food safety interventions because students are still forming lifestyle patterns and they can eventually become ambassadors in their communities (Adejuwon, 2014).

On strategies to enhance the practice of sanitary practices, it can be seen that the strategies which will help to enhance sanitation practices in the hostel range from raising awareness, renovating facilities, providing students with rewards to keep their environment clean and regularly orientation be carried out in the hostels. This finding is in tandem with the findings of Nkom and Essien (2002), Dwan (2006).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The aim of the study was to investigate hostel sanitation practice and its effect on student's health in University of Benin, Benin City. The descriptive survey research design was employed in the study. The population of the study consisted of students resident in the hostels (hall 1-5) (7,233), a sample of 25 students was taken from each of the hostel, bringing the number to 150 students. The instrument for data collection is a validated questionnaire, divided into two parts, the first part focused on the demographic data of the respondents while the second part addressed the statements of the research purposes. The instrument was administered manually by the researcher and the data gathered was analyzed using frequency count, percentage analysis, pie chart and bar chart.

The summary of findings revealed that the causes of poor sanitation in the hostel is lack of understanding and maintenance of facilities, irregular disposal of facilities. The level of sanitation practices in the hostel was found to be generally poor. Poor sanitation was found that the sanitation practices in the hostel adversely affect the health of students. The school management was found to have made efforts to keep

the hostels clean, but still falls short of what is required for proper maintenance. Awareness, renovating, providing incentives to students and regular orientation was found to be strategies to help improve sanitation practices in the hostel.

Conclusion

The study examined sanitation practices in the hostel. In conclusion, the sanitation practices in the hostel was found to be poor. This is caused by inadequate facilities, lack of understanding and overcrowding in the hostels. Also, the study shows that students who are directly controlled and enlightened will have better disposition in their environmental sanitation and practice.

Recommendations

Based on the findings, the following recommendations were made:

- The students should be encouraged to put their knowledge of environmental sanitation into practice.
- The school should sensitize the students about environmental sanitation
- Government should assist in providing health promoting facilities such as toilets, water supply, refuse bins, hand washing facilities etc. in the universities.

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DEPARTMENT OF HEALTH, SAFETY AND ENVIRONMENTAL EDUCATION
FACULTY OF EDUCATION
UNIVERSITY OF BENIN
BENIN CITY

QUESTIONNAIRE

This research was carried out by Favour Amayanvbo to investigate **"Hostel Sanitation Practice and its Effect on Students Health in University of Benin, Benin City"**.

I will be very grateful if you can accurately and sincerely fill out this questionnaire in your opinion on the subject matter. Responses will be treated confidentially and used only for research purposes.

Instruction

Please tick [√] in the appropriate box after each question.

Section A

- **Sex:** Male [ ] Female [ ]
- **Religion:** Christian [ ], Muslim [ ], Others [ ]
- **Age range:** 14-16[ ], 17-19 [ ], 20-22 [ ], 22 & above [ ]
- **Level:** 100 [ ], 200 [ ], 300[ ], 400 [ ]

Section B
Instructions: please kindly [ ] tick appropriate option of your choice the option that best applies using the keys below.

Keys: Strongly Agree (SA), Agree (A), Strongly Disagree (D) and Strongly Disagree (SD)

S/N	Items	SA	A	D	SD
	Causes of poor sanitation				
1	Inadequate maintenance of toilets results in poor sanitation				
2	Lack of understanding of the importance of toilet leads to poor sanitation				
3	Regular disposal of refuse results in poor sanitation in the hostels				

4	Overcrowding of the hostels leads to poor sanitation in the hostels				
	Level of sanitation practice				
5	Students defecate openly in the hostels				
6	Waste is collected regularly and on time				
7	Students wash their hands with water and soap after using the facilities				
8	students are lazy to use facilities to dispose of refuse				
	Effect of sanitation practice on health				
9	Poor sanitation can cause diarrhea for students				
10	Access to improved sanitation results in lower health system costs				
11	Poor sanitation exposes students to food borne disease				
12	Poor sanitation results in under nutrition and weight loss problems in students				
	School management contribution to enhancing sanitation practice				
13	School provide disposal facilities in the hostels				
14	The school provides adequate cleaners that regularly cleans the hostel environment				
15	Cleaners should be supervised properly to ensure they do their jobs				
16	School management allocating more funds to renovating/managing the sanitation facilities will enhance its practice				
	Strategies to improve sanitation in hostels				
17	Raising awareness is a way to improve sanitation practice in the hostel				
18	Renovating facilities is a way to improve sanitation practice in the hostel				
19	Providing incentives for students that keep their environment clean is one way to improve sanitation practice in the hostel				
20	Regular orientation should be done to hostel residents on the benefit of keeping the hostel clean and how to do it				