UNIVERSITY FOR DEVELOPMENT STUDIES

# AVAILABILITY OF TOILETS AND HAND WASH FACILITIES IN THE WA CAMPUS OF THE UNIVERSITY FOR DEVELOPMENT STUDIES

**BY**

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## DECLARATION

I, Cynthia Logo, hereby declare that this work is the result of my own investigations towards the award MSc degree and no previous submission of it for any degree has been made here or elsewhere. However, references found relevant to the study have been duly acknowledged.

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## ABSTRACT

The study sought to assess the state of toilets and hand wash facilities on the Wa Campus of University for Development Studies (UDS) and the extent to which these facilities are being utilized by students. In this light, the mixed methods research design was used to collect data from about 380 respondents using questionnaire, interview schedule and focus group guide. On the basis of the analysis, the study found that in terms of availability of toilet facilities, only 19.0% (63) of the students thought the facilities were adequate, 61.0% (204) thought the facilities were somehow adequate while 20.0% (65) said the facilities were inadequate. Despite the availability of toilets, 10.0% of the students still practice open defecation while 21.7% of them urinate in the open. In terms of hand hygiene facilities, 64.8% (215) of the students had access to hand washing facilities whereas 35.2% (117) had no access to hand washing facilities. With regards to the use of hand washing materials, 2% (7) of respondents used soap for hand washing, 55% (184) of respondents reported that only water is always available at sanitary facilities while 43% (141) reported that both water and soup are always available at sanitary facilities for hand washing by users of the facilities. With regard to clean running water, while 85.5% (284) of the students said running water was available, 14.2% (48) did not have access to running water at all. Of those with access to running water, sources of the water included Ghana Water Company (53.0%), Mechanized bored holes (35.5%) and Tanker services (10.1%) but for those without access to running water, sources of water include non-mechanized borehole (42.6%), tanker service (36,2%), rain water (17.0%) and spring water (4.3%). Therefore concludes that even though there are water closets and other modern urinals and hand wash facilities available in halls of

residency, lack of running water hamper their usage. Consequently, some students still resort to open defecation.

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## DEDICATION

To my Dearly Loved Husband Mr. Kenneth Danuo and adorable children Emelda Zunuo Danuo, Emmanuel Nuodem Danuo and Kelvin Segninuo Danuo

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## ACRONYMYS

| | |
|---|---|
| B.COM | Bachelor of Commerce |
| DISCAP | District Capacity Building Project |
| EPA | Environmental Protection Agency |
| EU | European Union |
| EUF | European Union Fund |
| FGD | Focus Group Discussion |
| FUSSAG | Federation of University Senior Staff Association of Ghana |
| GDHS | Ghana Demographic House Survey |
| GES | Ghana Education Service |
| GHDR | Ghana Human Development Report |
| GHWD | Global Hand Washing Day |
| GOG | Government of Ghana |
| GWSL | Ghana Water and Sewage Limited |
| IBS | Integrated Business Studies |
| IDS | Integrated Development Studies |
| IRI | Internet Research Institute |
| JMP | Joint Monitoring Program |
| KMA | Kumasi Metropolitan Assembly |
| LI | Legislative Instrument |
| MDG | Millennium Development Goal |
| NAB | National Accreditation Board |
| NCTE | National Council for Tertiary Education |
| ODI | Oversea Development Institute |

| | |
|---|---|
| RWSS | Rural Water Supply and Sanitation |
| SPSS | Statistical Package for Social Sciences |
| SRC | Students Representative council |
| TEWU | Tertiary Education Workers Union |
| TREND | Training, Research and Networking for Development |
| UDS | University for Development Studies |
| UN | United Nation |
| USAG | University Students Association of Ghana |
| WASH | Water and Sanitation Hygiene |
| WC | Water Closet |
| WHO | World Health Organization |
| WSMP | Water Supply Management Programm |
| WSSCC | Water Supply and Sanitation Collaborative |



# CHAPTER ONE

# INTRODUCTION

## 1.1 Background

The concept of sanitation initially denotes the maintenance of healthy conditions to promote hygiene and prevent diseases. It is related to health or the disposal of domestic waste water (Merriam-Webster's Collegiate Dictionary, eleventh edition). Over the years, this concept of sanitation evolved significantly. The 1992 Convention on the Protection and Use of Trans boundary Watercourses and International Lakes and the 1999 Protocol on Water and Health defined sanitation as the collection, transport, treatment, and disposal or reuse of human excreta or domestic wastewater, whether through collective systems or by installations serving a single household or undertaking (WHO, 2008). In broader sense, sanitation is taken to mean the safe management of human excreta, which includes both the hardware (e.g. latrines and sewers) and the software (regulation, hygiene promotion) needed to reduce fecal-oral disease transmission. It encompasses the re-use and ultimate disposal of human excreta.

In this study, sanitation is considered as the provision of toilets and hand washing facilities and services for the safe disposal of human excreta (urine and feces), promoting health through prevention of human contact with physical, microbiological and chemical hazards of waste.

A toilet is a sanitation fixture used for the storage or disposal of human urine and feces. Toilets can be with or without flushing water referred to as flush toilet or dry toilet respectively. They can be set up for a sitting posture or for a squatting posture (squat

toilet). Flush toilets are connected to a sewer system in most planned urban areas and to septic tanks in less built-up areas. Toilets are categorized into two types; on-site and off-site systems. The off-site systems are associated more with the developed world, cities and high-density areas. They are often in the form of sewerage systems, which require a reliable water supply, and the provision of wastewater treatment. The on-site systems are isolated and provide some level of treatment or containment at the toilet location and avoid the need for further treatment.

Adequate toilet provision should therefore take into consideration the type, purpose and the recommended standards during construction. In developing and less developed areas where water is often scarce or collected from a stand-post or well, dry (on-site) systems are recommended. Despite this, there are alternatives to conventional sewerage that may sometimes be applicable.

By far water closet is the most hygienic toilet recommended for institutions where water should not be a problem. However, places where water is scarce, the Ventilated Improved Pit Latrine (VIP) may be more suitable for institutional use. By standards, the provision of toilets should be accompanied by hand wash facilities to complete the system to ensure hand hygiene.

Hand hygiene encompasses washing of hands and nails with soap and running water or the use of waterless hand sanitizers. Hand hygiene is important for preventing the spread of infectious diseases at homes, schools and everyday life settings (Elaine, 2007). Hand wash or hand hygiene facilities comes in various forms. For instance, tippy taps, basins and sinks are some of the facilities used for hand washing and these come with flowing water to prevent contamination and the spread of fecal related diseases.

While the provision of adequate toilets and hand wash facilities for schools is acknowledged, in practice the sanitary situation in many schools is often considered deplorable (Cairncross, 1998 & 2003).

UNICEF (2007) further indicates that schools partly determine children's health and wellbeing by providing a healthy or unhealthy environment. Although water and sanitation facilities in schools are increasingly recognized as fundamental for promoting good hygiene behavior and children's wellbeing, many schools in rural areas of Ghana have very poor sanitation facilities. For some, the conditions vary from inappropriate and inadequate sanitary facilities to the outright lack of latrines and safe water for drinking and hygiene (UNICEF, 2007*).*

According to the standards of Ghana's National Accreditation Board and LI 1630, it is recommended that every institution should provide functional Water closet (WC), urinal and hand wash basins in the ratio of 1:10 for female students whilst WC, urinal and hand wash basins for males should be in a ratio of 1:20. However, this appears contrary to what pertains on Ghanaian university campuses especially in the University for Development Studies.

Therefore, adequate provision of toilet facilities together with good hand hygiene and safe water are fundamental to good health, social and economic development of every nation (UNICEF, 2013). Provision of toilets and hand hygiene in schools is geared towards improving the health and performance of students and also reducing the incidence of water and sanitation-related diseases. Every school requires appropriate

toilet and hand wash facilities that keep the school environment clean and free of smells and reduce the transmission of certain diseases.

Human excreta is known to be the main transmitter of infectious diseases such as cholera, typhoid, infectious hepatitis, worm infestations, polio, Ascariasis and cryptosporidiosis. Poor sanitation and hygiene result in reduced physical growth, weakened physical fitness and impaired cognitive function, particularly for children under the age of five (UNICEF, 2013).

Diseases related to inadequate sanitation and hygiene form a huge burden in developing countries. It is estimated that 88% of diarrheal disease is caused by inadequate sanitation and hygiene (WHO, 2004). Therefore adequate toilet and hand hygiene facilities will drastically reduce sanitation related diseases. When schools are provided with clean water, adequate sanitation and hand wash facilities and hygiene education, good health for students is guarantee, which will significantly improve their performance in school. Adequate sanitary facilities for schools entail a safe water source, separate toilets for males and females and hand washing facilities near the toilets in accordance to the National accreditation board standards (John *et al.*, 2009).

The high incidence of diarrheal diseases and other communicable diseases among students may be due to poor knowledge and practice of hand hygiene (Koopman, 1978; Dowuona, 1974; Hogue, 2003). Poor knowledge, practice and attitudes to hand hygiene, such as hand washing, has negative consequences for a child's long term overall development (GHWD 1, 2008). Good hand washing practice is therefore a prerequisite to a child's survival (UNICEF, 2008; Curtis & Caimcross, 2003). Thus the global sensitization to the outbreak of the Pandemic Influenza H1N1 in 2009 included hand



washing with clean water and soap, after critical moments, as a mode of prevention (World News, 2009).

The importance of hand washing after defecation and before eating and preparing food, to prevent the spread of diseases, cannot be over-emphasized. Users should have the means to wash their hands after defecation with soap and should be encouraged to do so. There should be a constant source of water near the toilet for this purpose (Minimum Standards in Water Supply, Sanitation and Hygiene Promotion). A hand washing facility, even with soap, on a communal basis, where more than one person uses the same water, does not constitute adequate hand washing facility (Scott et al, 2007). Hand washing sink with clean running water and hand washing facilities are recommended by Ghana Education Service (GES) and WHO for institutional and public use but in some cases tippy taps are also recommended (Niall Boot for Practical Action, 2008).

Worldwide, millions of people lack access to reliable basic sanitation facilities. According to UNICEF (2006), about 2.6 billion people worldwide do not have access to improved sanitation facilities. However, current trends show that Sub-Saharan Africa and Southern Asia still struggle with low sanitation coverage with more than one billion people without access to improved sanitation facilities in Southern Asia and Sub-Saharan Africa (UN, 2008). Indeed lack of safe water and sanitation facilities is the world's single largest cause of illness. The toll on children is especially high as about 4,500 children die each day from unsafe water and lack of basic sanitation facilities while countless others suffer from poor health, diminished productivity, and missed opportunities for education (UNICEF, 2007).

The situation is not different in Ghana as it was indicated in a survey of Accra residents that improving sanitation was the top priority out of seven basic services. No wonder Ghana ranked close to the bottom of the list in terms of improved sanitation provisions in Sub-Saharan Africa (Ghana Joy Business, 02-04-2015). Another survey conducted in public schools across the country has revealed that about 10,000 schools do not have toilet facilities. This came to light during a dissemination workshop held on the theme: "National Minimum Standards and Implementation Models for WASH (water, sanitation and hygiene) in Schools in the Country".

Generally in developing countries, lack of good guidelines to implement strategies and standard design for Water, Sanitation and Hygiene (WASH) facilities in schools as well as policies on budget allocation in some countries for WASH facilities in schools are also inadequate, if not totally lacking. Adequate funds are not allocated to ensure the construction, operation and maintenance of WASH facilities in schools (UNICEF, 2007). Inadequate human capacity to operate, maintain, monitor WASH conditions as well as help people improve on their own sanitation and to change their behavior towards sanitation is a constraint in most developing countries. In some countries, facilities as well as supplies are poorly operated and maintained, especially at the provincial and district levels. Weak capacity in terms of implementing and coordinating WASH programs, optimizing opportunities or resources and carrying out good hygiene education is also an issue in Sub Saharan Africa.

Ghana can only boast of a 1% annual growth in sanitation, making it insignificant of the target for the country to have solved 54% of the sanitation problems by 2015 (Water Aid Newsletter, March 2012).

Over 20% of the population still lacks access to basic sanitation facilities like toilets; a situation which has resulted in about 5 million people openly defecating into gutters and at the shores of beaches every day. In September, 2010, a revised Sanitation Policy of Ghana was produced. The overall goal of this new policy was to develop a clear and nationally accepted vision of sanitation as an essential social service and a major determinant for improving health and quality of life in Ghana. The policy is a necessary tool required to help shape all efforts in dealing with the overwhelming challenges of poor sanitation in Ghana (EPA, 2007).

The challenge of inadequate sanitation facilities has burdened humanity for centuries; therefore University for Development Studies campuses may not be an exception where there is an increase in the student population. The Department of Works and Physical Development Department of the University consist of a number of units (UDS, 2014) which, provide services for physical planning and development of the University. It also provides sanitation services for both staff and students. These units are responsible for general works and maintenance of existing buildings and civil engineering of structures and facilities as well as electrical and mechanical equipment and installations. The units consist of both Civil and Electrical Engineers and Quantity Surveyor who carries out construction, maintenance and supervisory activities. However, there is only one Environmental Health and Sanitation Inspector in the Health Services unit who supersedes in the day-to-day sanitation needs of the university, which may have effects on sanitation (UDS 15$^{th}$ Congregation, 2014).

## 1.2 Problem Statement

Studies have shown that hostel facilities in tertiary institutions like the Wa Campus of the University for Development lacked the needed toilets and hand wash facilities for students use as a measure of ensuring good sanitation (Bukari, 2008; Mariwah et al, 2012; Madu & Ikechukwu, 2017). Increasing number of students especially at the residential facilities has been implicated for the poor sanitation situation on campuses. Also the lack of maintenance culture often lead to the breakdown of installed facilities thereby increasing the risk of sanitation related infections among the students especially students in the hall of residence.

A study conducted in Yopougon, La Cote d Ivoire, indicated that out of 381 students interviewed, 62% of them reported that water closets (WCs) and latrines were not in good condition for use (UNICEF, 2000). In a similar survey in Uganda, it was observed that only a third of schools had adequate sanitation facilities with only one toilet for every 700 pupils in Uganda (WHO, 2001). These studies clearly revealed a short fall when compared with the recommended standards of the Ghana national accreditation board and LI 1630. The recommendations is for every institution to provide functional Water closet (WC), urinal as well as hand wash basins/sinks in the ratio of 2:20 for female students and 1:20 for males.

However students' numbers at the residential facilities keep increasing and have outnumbered the sanitation originally planned for a few number of students. Lack of maintenance culture often leads to the breakdown of installed facilities. Therefore this study is to investigate to what extend the sanitation standards recommended by the Ghana National Accreditation in students' residential facilities on the Wa Campus of the

University for Development Studies have been met. Though the effect of inadequate toilet and unhygienic wash practices among the university students had not been explored and documented in details, it was speculated that inadequate toilet provision coupled with unhygienic wash practices in the halls of residence might be a recipe for health hazards in the university and as such the basis of this study.



## 1.3 Research Questions

### 1.3.1 General Research Question

What is the state of toilets and hand hygiene facilities in the UDS Wa campus and to what extent are they use?

### 1.3.2 Specific Research Questions

1. What type of toilets, urinal and hand hygiene facilities are available?
2. How are sanitation facilities available been utilized?
3. Is there clean running water available at the sanitary facilities for students use?

## 1.4 Study Objectives

### 1.4.1 General Objective

The general objective of the study was to assess the state of toilets and hand hygiene facilities in the UDS Wa campus and the extent to which these facilities are being utilized by students.

### 1.4.2 Specific Objectives

1. To assess the type of toilets, urinal and hand hygiene facilities available.
2. To assess the utilization of sanitary facilities.
3. To examine the availability of clean water and its utilization at the sanitary facilities by students.

### 1.5 Rationale for Study

Research has shown that health and education are inseparable: when students are ill, or where the school environment is unhealthy or threatening, school attendance drops. This reiterates the fact that healthy and secure learning environment is necessary for student participation and learning (Yulukantigil *et al.*, 2011). Adequate sanitation is therefore a foundation for development (Yahaya, 2007) and the social and environmental health cost of ignoring the need to address sanitation issues including hygiene and water are far too great. This therefore warrants the conduct of this study. The findings of this study will provide data to the UDS authorities in the area of sanitation and to create awareness on sanitation among students.

### 1.6 Conceptual Framework of the Study

The study is conducted with reference to the conceptual framework presented below. The framework serves as a guide and gives direction to the relationship between the various study variables. The framework is based on the study objectives and literature review is also done to conform to the conceptual framework. Figure 1.1 suggests that, independent variables namely were conceptualized into sanitation facilities, adequacy and practices. In

addition, Figure 1.1 illustrates the intermediate variables namely; availability, functionality and behavior change which affect the dependent variables illustrated into positive outcomes and negative outcomes. The positive outcomes include; healthy environment, higher use of facilities by students and higher patronage of school halls while the negative outcomes were conceptualized into irregular attendance, high disease risk and negative impact on environment.



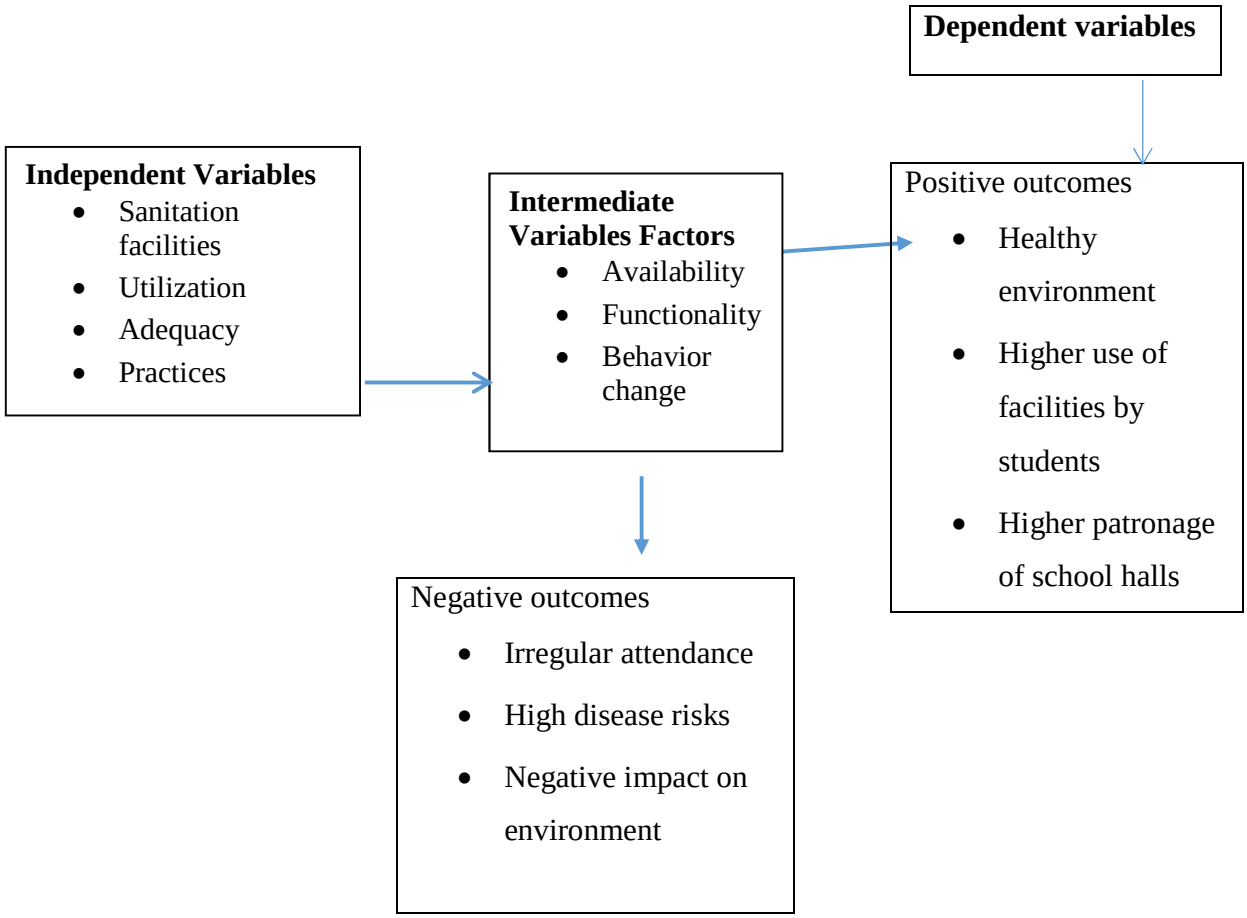


**Figure 1.1 Conceptual Framework of the study**

Source: Author's Construct, 2018.

### 1.7 Scope of the Study

Geographically, the study was restricted to Upper West Region and was conducted on the Wa campus of University for Development Studies. The University for Development Studies (UDS) was established in May 1992 by PNDC Law 279 to blend the academic world with that of the community in order to provide constructive and meaningful interaction between the two for the total development of Northern Ghana, in particular and Ghana as whole. It has four major campuses which the Wa campus is one.

Therefore, the Wa campus of the UDS is located in Wa the capital of the Upper West Region and in a community called Bamahu which is about five kilometers north-east on the Wa-Kumasi road. The Wa campus is one of the four campuses of the university, the others being the Nyankpala, Tamale and Navrango campuses. By far the Wa campus is the largest of the UDS campuses in terms of land size and students population. The campus has three faculties namely; Faculty of Planning and Land Management, Faculty of Integrated Development Studies and School of Business and Law.

Contextually, the study focused on availability and utilization of toilets and hand hygiene facilities at the students' residency of the Wa campus.

### 1.8 Organization of the Study

The thesis is organized into six chapters. Chapter one, the introduction to the study describes the background to the study, the problem statement, the study objectives and the significance of the study. Chapter two reviews relevant literature in relation to the study objectives. Chapter three describes the study methodology, which comprises the study design, study type, study variables (independent and dependent variables), data collection instruments, sampling procedure and sample size, study population, data

collection methods, quality control measures, ethical considerations as well as plan for dissemination of results. Chapter four presents field results and chapter five presents discussion of the field data. Lastly, chapter six gives a summary, conclusion and recommendations of the study.



# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter reviews relevant literature on the subject matter under study. It gives an overview of the sanitation situation in Ghana and its infrastructure. The literature is reviewed and presented in line with the study objectives namely availability of toilet and hand wash facilities; adequacy of these facilities and their utilization.



## 2.2 Overview of Sanitation Situation in Ghana

Sanitation "encompass all those inter-related activities, which in the long run ensure the sustained health of the family" (Kendie, 2002). The Water Supply and Sanitation Collaborative Council (WSSCC) working group on sanitation promotion with the World Health Organization also defined sanitation as interventions that minimize the impacts of disease causing organisms through safe and clean environment (Water Aid, 2003). Another school of taught also defined sanitation to mean the safe management of human excreta, including sewers, latrine and the regulation, and hygiene promotion needed to reduce fecal-oral diseases transmission (Gender &Water Alliance, 2003).

The three given definitions all recognize clean environment as an effective barrier capable of breaking the life cycles of disease causing agents. However, maintaining a clean and a safe environment is relevant in reducing sanitation related diseases (Warner 1997; Caincross *et. al*. 2003; Yahaya, 2007). It is therefore important that every individual make a conscious effort to free the environment of filth.

Ghana used pit latrines in the colonial days, which were usually placed in the outskirts of the community because of the smell, flies, and environmental hazard (Ayee & Crook, 2003). The Pan Latrine System for public sanitation was introduced in 1923 by the Kumasi Public Board and communities provided these latrines for public sanitation. Communities planned, developed and manage those facilities (Frantzen, 1998). The British government introduced the household "bucket latrine" system with "night soil" collection, which became dominant. In line with their sanitation policies, the British government constructed public toilets in the early 1930s in Accra and Kumasi (Ayee & Crook, 2003). The number of public toilets increased because of successive post-colonial government policies and rising population. By mid-1980s, there were 400 public toilets in Kumasi alone (Ayee & Crook, 2003).

In Ghana, public sanitation facilities are good business, so much so that political and sometimes physical battles erupt over who manages the facilities. According to Lakisha (2014) in Kumasi, each seat within Kumasi Metropolitan Assembly (KMA) comes with the management of a public sanitation block.

According to Ghana's Sanitation Directorate of the Ministry of Local Government and Rural Development, 13% of the population had access to improved sanitation in 2010 and 14% in 2011.

Recent available data shows that total access to basic sanitation in Ghana is estimated at 21%, with rural and urban coverage of 17% and 25% respectively (GSS, 2018).

Despite the appearance of overall progress, Ghana could not meet the Millennium Development Goal 7 (MDG) which targeted to reduce by half the number of people without access to sanitation by 2015 (MDG Report, 2013). At 59% of the population of Ghana using shared sanitation facilities (72% of urban Ghana) (UNICEF & WHO, 2014). Among all the countries reporting to the Joint Monitoring Programme (JMP) Ghana had the highest population using shared sanitation facilities (JMP) (UNICEF & WHO, 2013).

National coverage for improved sanitation increased from 4% to 12.4% in 1993 and 2008. Among urban populations, improved sanitation coverage increased by approximately 8% appreciating from 10% in 1993 to 17.8% in 2008. For rural populations, improved sanitation coverage increased from 1% to 8.2% between 1993 and 2008. It is worth noting that there was an appreciable increase of 6% in improved sanitation coverage for the rural population between 2003 and 2008 compared to just 3% increase in coverage for the urban population during the same period GDHS (2003). The gap between the present national coverage on improved sanitation of 12.4% and the 53% target by 2015 indicates that there must be approximately five times increase in coverage to be able to achieve the set target.

The use of improved sanitation facilities shows variation across the ten regions of Ghana. With the exception of Greater Accra, Western, Eastern and Central Regions, the Northern, Upper West and Upper East Regions are more likely to use unimproved sanitation facilities since only 3% of the population in Northern Ghana use improved sanitation facilities compared with 25% in the Greater Accra Region (WSMP, 2009).

A report by UNICEF (2014) indicated that Ghana has been ranked second after Sudan in Africa for open defecation, with five million Ghanaians not having access to any toilet facility. Ghana has also been performing poorly with sanitation coverage of only 15%, making the practice of open defecation a key sanitation challenge because people do not have access to key basic facilities. Poor sanitation issues has cost the country $79million a year and also posed the greatest danger to human health, particularly for the most vulnerable, including young children.

About 85.1% of people in Ghana do not have access to safe and private toilets as they resort to large household toilet usage (Zakiya, 2015). All over the world, it is estimated that more than 2.3 billion people do not have access to a safe and private toilets. Out of this, nearly one billion have no choice but to defecate in the open such as in the bushes, fields or by the roadside. The use of improved sanitation facilities at the regional level varies considerably as coverage is highest in the Greater Accra, Eastern, Western and Central Regions. Residents of the three regions in the north (Northern, Upper East and Upper West) are less likely than others to use improved facilities as only 3% of the population in the Northern region use improved sanitation facilities (not shared) whilst 25% in the Greater Accra region use such facilities GDHS (2008).

Most people failed to construct latrines due to the perception that human excreta can improve soil fertility and therefore crop yields (Kendie, 2002). A report by Overseas Development Institute (ODI) indicated that sanitation and water supply is inseparable

(ODI, 2004). Though water and sanitation issues are being discussed seriously, water supply seemingly attracts more attention than sanitation because of its direct link with excreta, which is regarded as a taboo in some societies (Water Supply & Sanitation forum, 2008).



In many parts of Ghana, women often spend a greater part of their time, usually 5 hours per day fetching water from unimproved sources, often walking over long distances (10 or even 20 kilometers) particularly during the dry season of the year. The situation is more pronounced in the north of Ghana where there are acute water shortages in the dry season (Fuest, 2005).

A report from the Ministry of Health in Ghana indicated that a number of water-related diseases such as cholera, diarrhea, skin infection, and intestinal worms were predominant in rural areas. For instance, lack of adequate safe drinking water and sanitation were the causes of such diseases. Sadly, children and women bear the brunt of such diseases (Fuest, 2005).

However, hand washing with soap is effective in eliminating germs, it is difficult to enforce it in rural areas where monitoring is likely to be less effective. It has been discovered that less than 5% of Ghanaian mothers in Ghana actually washed their hands with soap after critical times or after handling children's stool (Scott *et al*., 2007). The group indicated that hand washing with soap after defecation is a real problem at public toilets where over 50% of the population defecates.

In 2007, the Government of Ghana launched the Ghana National Water Policy, which focuses on integrating water resources management with the aim to facilitate improved access to safe water and sanitation in rural and urban areas. To support these efforts, the European Union (EU) using 9th European Development Fund (EDF) resources, has funded a series of projects, which were completed between 2008 and 2012. To date, nearly half a million rural Ghanaians have benefited from access to safe water and sanitation facilities including hygiene promotion (GoG, 2011).

According to the Ghana Human Development Report (GHDR) (2008), although there is a significant improvement in access to potable water supply to the rural areas through the drilling of boreholes, it is still inadequate and most people have to rely on ponds and streams for their drinking water. The installation of a water facility does not guarantee adequate and regular flow of water if spare parts are not available and communities/schools lack skills to carry out regular maintenance. For example, it has been pointed out that high cost of borehole parts, materials, chemicals and personnel expenses are factors militating against community ownership of water facilities (DISCAP, 2003).

The sanitation situation in Ghana seems to be fast deteriorating. A survey undertaken by GWSL (1992, as cited in GHDR, 1998) for all urban areas throughout the entire country has revealed that the sanitation situation has fallen below the expected coverage of 61 %. This situation has been attributed the unsustainable provision of water and sanitation

facilities to national agencies' inability to secure enough funding, lack of qualified personnel and lack of defined roles (Lockwood, 2002). The problem is further compounded by population growth and the dispersed nature of some settlement. The state machineries operating in the water sector are inefficient as a result of lack of capacity to respond swiftly to population growth and the high demand for potable water supply (Fuest & Haffner, 2005). UN Water (2010-2015) and UN (2004, as reported by (Akabzaa & Ayamdoo, 2006) show that communities benefit very little from capacity building and empowerment. Instead the focus is on strengthening capacities of water specialists than community members. This is quite unfortunate as communities' capacity building is seen as the main driving force to sustainable water and sanitation projects. The development of the capacities of the indigenous people is essential to manage vital projects and protect the huge investment made in such facilities.



According to the Ghana Demographic and Health Survey (2008), the proportion of the population that uses improved drinking water was 83.8 % and improved sanitation facility was 12.4 % in 2008. This means that about 3.5 million people living in Ghana did not use improved drinking water and as much as 19.2 million did not use improved sanitation facilities in 2008. At the current pace of increase in the use of improved sanitation (toilet facilities), about 18.7 million people in Ghana would not have access to improved toilet facilities by 2015.

**2.3 Sanitation Infrastructure**

The provision of sanitation facilities is an additional infrastructure component that has the potential to reduce the incidence of diarrheal diseases in developing countries. Toilets

latrines are facilities used for separating feces from the human environment, toilets and latrines interrupt the fecal-oral cycle. These facilities ranges from flush toilets, ventilated improved pit latrines and open pit latrines. Flush toilets are typically considered to be the most sanitary form of waste disposal, followed by sealed pit and ventilated improved pit latrines, and finally by open pits, all of which are considered more hygienic than open defecation (Boadi & Kuitunen, 2005).

Several studies have looked at the role of sanitation infrastructure in diarrhea prevention in Ghana. A study conducted in the Accra metropolitan area found that children in households without sanitation facilities had significantly higher diarrhea incidence than those in households with either a flush toilet or a latrine (Boadi & Kuitunen, 2005). In addition, the Accra study found that households that shared sanitation facilities with five or more households had significantly higher rates of childhood diarrhea than those with private facilities, presumably because shared facilities tend to be less hygienic. The study further indicated that the likelihood of childhood diarrhea was 24% higher in households lacking any sanitation facility, relative to those with latrines or toilets (Gyimah, 2003).



**2.4 Implications of poor sanitation on health**

Poor disposal of fecal and unprotected water source are the main cause of diarrhea diseases, which ranks second among the five killer diseases being transmitted mainly through swallowing fecal germs in Ghana. Poor disposal of fecal and unprotected water source are the main cause of diarrheal diseases, which ranks second among the five killer diseases (TREND, 2005). In many developing countries, diarrheal diseases are caused by consumption of contaminated water (Warner 1997, Caincross *et al.*, 2003; Yahaya

2007,). It is known that 1 gram of feces may contain ten million viruses, one million bacteria, one thousand parasite cysts and a hundred warm eggs and that makes the safe disposal of feces the most important of all public health priorities (Water, Sanitation and Hygiene, 1999). Due to lack of safe sanitation and good hygiene, majority of illnesses in the world are as a result of consumption of fecal contaminated food and water (TREND, 2005).

Poor sanitation, hygiene and inadequate water supply are also related to the spread of other diseases, including tropical diseases such as schistosomiasis (bilharzia), which rank second in terms of socio-economic and public health importance in the tropical and subtropical areas (Esrey 1994). This disease is endemic in 74 developing countries, infecting more than 200 million people of which 20 million suffer severe consequences from the disease.

Poor waste disposal practices are responsible for significant proportion of world's infectious disease burden. Diseases due to poor water supply, sanitation and personal and domestic hygiene cause 4.0% of all deaths and 5.7% of all disability or ill health in the world (Carr & Strauss, 2001).

Ghana has an enormous challenge in terms sanitation and waste management. The country has a deficit of over 50% in excreta disposal and around 70% for social waste management coupled with inadequate provision and broken down infrastructure for drainage and water management in general, the task of addressing the grave sanitation in the country requires a major effort (International Water and Sanitation Center, 2011).

This has a negative impact the population. Therefore, almost 50% of all the diseases are related to poor sanitation. Hundreds of thousands of citizens suffer from intestinal worms as a result of poor sanitation and there is high level of death among children under 5 years of age WHO (2004).



Poor sanitation can also have consequences on the Economy as expenditure on the cure of sanitation related diseases outweighs what is spent on prevention. Many thousands of schools days are lost due to sanitation related illnesses each term and many thousands of workdays are lost due to sanitation related sickness every month. Some socio-cultural factors such as taboos, myths and beliefs, are known to negatively influence waste management. For instance according to the International Water and Sanitation Center, in some cultures, persons with diarrhea are encouraged to defecate in the open to facilitate healing (IRC, 2004). Invariably, such practices have the tendencies to spread diarrheal diseases to others.

Birley (1995) noted that, education level is a paramount factor in as far as sanitation is concerned. Education, defined as an instrument of human capital involves passing on preserved values, knowledge and skills from one generation to another whether formal or informal; is important to community members and stimulates change among the beneficiaries.

Another important determinant of good hygiene is the availability of portable water. The scarcity of water contributes to illness through bad hygiene and this in turn fosters the

spread of infections that affect the eyes, skin and the intestinal tract (UNICEF, 1994). According to a study carried out in Bangladesh by the International diarrhea diseases research Centre, hand washing can cut diarrhea diseases dramatically by 40% in under five age group, 20% 20% in the five to nine age group and by 10-15% in the other age groups (Scott et al 2007). Those who wash hands, food or eating utensils with unclean water risk catching typhoid, cholera, dysentery, gastroenteritis and hepatitis (Luby *et al*., 2005).

Sanitation in Ghana is still not satisfactory. At the district level, latrine coverage and safe water coverage are 40% and 8.3% respectively (UNICEF, 2002). Sanitation reduces or prevents the amount of human fecal pollution of the environment therefore reducing or eliminating transmission of diseases from the source. Effective sanitation isolates excreta and inactivates the pathogens within feces. Sanitation facilities interrupt the transmission of fecal–oral disease by preventing human fecal contamination of water and soil (WHO/UNICEF JMP, 2010). Some simple latrines can be very effective while untreated sewage distributes pathogens in the environment and can be a source of diseases. When basic water, sanitation and hygiene interventions are applied, water borne illness can be effectively reduced low cost interventions such as compositing latrines can be used to reduce the transmission of many diseases (Fuest, 2005).

Over half of the population suffers from diseases caused by poor sanitation when simple sanitary measures can make a big difference. Although provision of safe water resources and sanitation is very important, constructing latrines and digging wells would have little effect on health unless people use these facilities (Richford, 1995). To prevent this huge

burden of illness, safe water and sanitation are only half of the answer. The other half is getting people to use them wisely and well (Water, Sanitation and Hygiene, 1999).

Good water supply worldwide is inadequate and variable. Timberlake (1985) noted that at least 95 people out of every 100 in Europe have piped water. In Africa, 90 out of every 100 are without it. Over 80% of all illness in the developing world is directly or indirectly associated with a poor water supply and sanitation. He went ahead to estimate that the provision of safe drinking water and sanitation could reduce infant mortality by half in much of Africa. But the provision of safe drinking water in the poorest parts of Africa is low even by third world standards hence pausing the sanitation problems. Moeller (1992) noted that we become afflicted with a disease when there is upset of complex delicate balance that normally exists between our bodies and the environment. He further observed that the upset may result from factors in the physical environment (air, water, food or sun); the biological environment (bacteria, viruses, plants and animals including man), the social environment (work, leisure and cultural habits and patterns such as smoking, diet or excessive drinking) or any combination of these three sources.



**2.5 Availability of Toilet and Hand Wash Facilities**

The availability and improvement of water and sanitation affect health by reducing disease transmission agents through safe disposal of human excreta therefore reducing pathogen in the environment. When toilets, hand wash facilities and water are available better hygiene practices are ensured because good quality of drinking water reduces the ingestion of pathogens resulting to fewer incidences of sanitation related diseases. Healthier adult population is more productive thereby increasing the capacity to acquire

food as well as increase in income, primary caregivers' time is also saved t which can result in the preparation of more or better food for children (Bergeron & Esrey, 1993).

Availability and improvement in sanitation facilities have consistently resulted in better health, where a reduction in diarrheas, parasitic infections, lower morbidity and mortality as well as increased in child growth. For instance an improvement of availability in sanitation facilities (e.g. open defecation to pit latrines) might result in better health but a significant improvements in sanitation (e.g. the use of pit latrines to flush toilets) may lead to even larger health benefits.

Although the importance of Toilet and hand wash facilities for schools is acknowledged, in practice the sanitary situation in many schools is deplorable (Cairn cross, 2003). This author affirmed that while efforts were made to provide sanitation facilities in schools it is often found that toilets and hand wash facilities are either absent or do not function properly; toilets are mostly padlocked to prevent students from using them because they are not able to use them properly; students especially females, do not patronize residential halls due to the lack appropriate sanitation facilities. If toilets and hand wash facilities are absent, or are badly maintained and used, hostels can become a health hazard (Akbar 2000). Learning can be affected through a consistent cycle of water and sanitation related diseases when water and sanitation facilities in hostels are lacking or even poorly maintained (Akbar, 2000).



In most schools hand washing facilities are not considered important but preventive health says hand washing is absolutely crucial. Without hand washing, all investment in latrine construction is a complete waste of time and resulting in fecal contamination from hand to mouth, food, friends etc. is virtually guaranteed (Waterkayn, 2000).

A situational report on water and sanitation facilities in six Sub-Saharan African countries showed lower coverage in the availability of water and sanitation facilities in schools as compared to the general population as well as low state of usage and maintenance in Burkina Faso (UNICEF 2000). That same report it was observed that only 32% of schools had water and toilets while 62% of water closets (WCs) did not work with about 381 students to one WC or latrine in Cote d' Ivoire (UNICEF, 2000).

However, most tertiary institutions are expected to provide students seeking for knowledge in various fields with residential accommodation such as residential halls, hostels and dormitories, hence student's accommodation becomes essential. Student's accommodation goes beyond the physical structure which offers services as a facility from which the social, psychological and physiological activities are attained, or one developed strictly for leisure, as an affordable and safe accommodation but as a facility that the design and housing style provides improved water and sanitation facilities (Alaka, 2000).

**2.6 Adequacy of Toilet and Hand Wash Facilities**

It has been found that a half of the people in the world do not have access to water and sanitary facilities even though adequate sanitation is said to be the foundation of

development. Access to hygiene sanitation facilities has declined slightly over the last two decades, as population growth is more than the provision of toilet and hand washing facilities (UNICEF, 2007).

The demand of the increasing population for adequate sanitary facilities has not been met by most developing nations, cities, towns, villages and even schools especially tertiary institutions. An increase in waste generation, unhygienic surroundings and an increased demand for water supply and sanitation facilities are the consequences of high population. With the increasing population, provision of sanitation facilities lacks behind therefore resulting in the high incidence of water and sanitation related diseases such as diarrhea, typhoid, dysentery and cholera in most rural and urban poor including schools (WHO & UNICEF, 2000).



It has been observed that about 1.1 billion (one-sixth) of the world's population has no access to adequate supply of improved water with about 2.4 billion (two-fifths) of the population lacking access to adequate sanitation facilities where majority of these people live in Asia and Africa (UNICEF, 2002). Another survey on sanitation facilities in schools in Bloomsbury, London found that 15 schools did not have the adequate number of toilets and hand washing basins provision in the school premises, 18 of the toilets were not kept adequately clean. This situation has been described as a mechanism for the spread of infectious diseases. These problems prevail in most tertiary schools in Ghana (Jewekes & O"connor 1990).

According to Ghana News Agency (2015) universities in Ghana usually suffer from sanitation related problems when FUSSAG and TEWU members who are supposed to keep the washrooms clean are on strike. During strike actions, it is the students association (USAG and SRC) that hires the services of some individuals who weed and perform other sanitary services triweekly at a cost of GH¢4 per student and in alternation organize students for a voluntary clean up exercise every Saturday to manage the situation (Jewekes & O‟connor 1990).

Further studies on adequacy of sanitation in tertiary institution in Nigerian indicated that almost all tertiary institutions had most facilities functioning below average (Madu & Ikechukwu, 2017). Where toilets and hand wash facilities are available on the campuses lack good drainage system, inadequate water supply, poor lighting, broken water closets, septic tanks and soakage pits with some of the toilets temporally out of use. Other related sanitation problems shown by the study include heaps of refuse, dilapidated buildings and bushy surroundings (Madu & Ikechukwu, 2017).



**2.7 Utilization of Sanitary Facilities**

The use of shared toilets is a common practice in Ghana, which is mostly associated with a significant risk for disease (Heijnen *et al.,* 2014). He also notes that shared toilets are not associated with such risk in some countries. Implying that the risk of disease is not peculiar to the use of shared latrines, but to associated behaviors or factors with shared latrines.

Further research showed that the facilities should be cleaned regularly, supplies should be available for users to spot clean the seat before or after use if applicable, facilities should have supplies such as tissue to clean the body after using the facilities, and facilities should have running water and soap available for users to wash hands after use (Lakisha, 2014). The use of running water is for the water to flow across the hands to wash germs away. These practices are related to cleanliness should be implemented in all shared sanitation facilities to reduce incidents of disease. These conditions make the shared or public sanitation facility similar to any sanitation facilities used in residential hall, dormitories, commercial buildings, or transportation hubs.



**2.8 Summary**

Though a significant body of research exists on the sanitation facilities in Ghana and Africa, they are unable to adequately address issues of availability, adequacy and utilization of toilet and hand washing facilities particularly in the tertiary institutions in Ghana. There are sanitation problems in students residential and lecture halls in our public universities such as the University for Development Studies, which needs critical investigations. Though available literature have indicated the bad state of sanitation facilities in some public universities elsewhere, very little is known about the type of toilet and hand wash facilities, their availability and utilization on the Wa-Campus of the University for Development Studies. By appropriate research methodology, the study intends to fill this research gap.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter describes the methodology used to collect and analyze the data. It describes the research design, study area, sample size determination and sampling procedure, data collection and analysis as well as ethical considerations.

## 3.2 Research Design

For the purpose this study, a mixed approach, both quantitative and qualitative were used to collect data. The mixed method provided a rich and better understanding of the availability or otherwise of toilets and hand-wash facilities in the various hostel facilities in the University Campus as this method uses and triangulates multi sources of data. Therefore, by combining both quantitative and qualitative techniques, the objectives of the study was sufficiently measured. In this regard, questionnaires were used as the quantitative technique to assess the type, number and utilization of toilet and hand-wash facilities. In-depth interviews, Focus Group Discussion and observation were used

qualitative approach to further collect data on the availability, the nature and utilization of toilet and hand-wash facilities.

### 3.3 Study Area

The study was conducted from 3rd to the 30th of October 2016 on the Wa Campus of the University for Development Studies (UDS). The Wa campus of the UDS is located in Wa the capital of the Upper West Region and in a community called Bamahu which is about five kilometers north-east of the center of Wa on the Wa-Kumasi road. The Wa campus is one of the four campuses of the university, the others being the Nyankpala, Tamale and Navrango campuses. By far the Wa campus is the largest of the UDS campuses in terms of land size and students population. The campus has three faculties namely; Faculty of Planning and Land Management, Faculty of Integrated Development Studies and School of Business and Law.



It has a student population of about 1000 residing in 5 UDS owned residential halls namely: Cardinal Dery Hall, Royal Hall, Jubilee Hall, Upper West Hall and Iman Hall which are located within the campus. Besides, there are a number of privately owned hostels located within the campus and outside the Bamahu community.

Four out of the five UDS owned students' halls of residence were considered for the study. These are The Cardinal Dery Hall, Royal Hall, Jubilee Hall, and Upper West Hall. The fifth hall, Imam hall was included because the questionnaires were pre-tested there. These UDS owned halls have full occupancy and can easily be accessed due to few bureaucratic arrangements. Being UDS owned facilities they been built in compliant to the NCTE/NAB norms.

### 3.4 Quantitative Study

In each of the halls visited, quantitative data on the types of toilets and hygiene facilities, and utilization of these facilities were obtained from the resident students of the halls using a questionnaire.

#### 3.4.1 Study Population and Sample Size

Of the total resident student population of 708, in the 4 halls, 365 students were sample for the study. The sample size was determined using the Probability Exact Method for one sample tests, namely: $\mathbf{n= p0\ (1-p0)\ [z\alpha + (z1-\beta)\ \sqrt{p1\ (1-p1)/p0\ (1-p0)}\ ^2/\ K^2}$, a sample size of 332 was obtained.

Where: p0 = sanitation level of Ghana

p1 = assumed based on 50% which is acceptable by convention in cross sectional studies (Oladimeji *et al.*, 2010).

α = probability of type I error and zα = 1.96 (at α = 5% 2-tailed) β = probability of type II error and z1-β = -0.157 (at 80% power 2-tailed) = 0.03 (sum of binomial probabilities for exact methods for one sample tests) n = 0.299/0.0009 n = 332.

To account for loses, during data collection, 10% of the calculated sample was added to arrive at a final sample size of 365.

#### 3.4.2 Sampling Techniques

Systematic sampling technique was used to select students for the survey. First, the halls resident list was obtained from the Hall Tutors of the various Halls (i.e. Cardinal Dery Hall, Royal Hall, Jubilee Hall, and Upper West Hall). The calculated and adjusted sample

size of 365 was allocated equally to each hall i.e. about 93 students per hall. Based on the arrangement of names of the student list, a sample fraction of 1/4$^{th}$ (93/365) was used to select the names of students from the various Halls for the study. That is starting from fist name on the list, every 4$^{th}$ name was included in the study until the required sample size of 93 students was obtained from each Hall. Those student names that were selected and were not readily available to respond to the questionnaire were replaced.

### 3.4.3 Administration of Questionnaires

A structured questionnaire was administered to all those who were selected for the study. The questionnaires were distributed to the selected students to answer by themselves. Trained research assistants were available to clarify and give guidance on aspects of the questionnaires not clear to participants. The questionnaires assessed the students' knowledge on the types of toilet and hygiene facilities available in the students' halls of residence; the adequacy of sanitation facilities in the students' halls of residence and the level of utilization of the available sanitation facilities in the students' halls of residence. Also the number of functional toilets and hand wash facilities were noted for each hall.



### 3.5 Qualitative aspect of the Study

This aspect of the study employed direct observation, in-depth interviews and focus group discussions. In-depth interviews were conducted with the Director of Physical Development, the Environmental Officer, 1 Hall tutor and 3 Cleaners of the halls.

For the students, 8 were selected for the focus group discussion: 4 males and 4 female's students who had been in the hall for at 2 years. The rational of the study was explained

to the students and only those accepted to be part of the study were included. The FGD focused on the utilization of toilets and hand wash facilities in the halls of resident.

Furthermore, key informant interviews were conducted with the Directors for Physical Development, Director of the University Health Services, Hall Tutor and Cleaners using an Interview schedule. In addition, one FGD was conducted with students at the Cardinal Dery's Hall using a focus group discussion guide. Apart from these, the Researcher also observed the various toilet and hand wash facilities of the various Halls using an observation guide/checklist of toilet and hand wash facilities. To also ensure that aforementioned instruments became valid and reliable, it was peer reviewed with inputs from Researcher's Supervisor. Table 3.1 presents the category of interview participants and Table 3.2 presents a summary of the data collection tools and techniques used.



**Table 3.1: Category of Participants and Types of Interview Used**

| **Category of Respondent** | **Method** | **Sample Size** |
|---|---|---|
| Director of Physical Development | In-depth interview | 1 |
| Director of Health Services/ Health Inspector | In-depth interview | 1 |
| Sanitary Cleaners | In-depth interviews | 3 |
| Hall Tutor | In-depth interview | 1 |
| Students | FGD | 8 |
| **Total** | | **14** |

**Table 3.2: Data Collection Tools and Techniques**

| No. | Tools | Techniques |
|---|---|---|
| 1 | Structured questionnaire (Both closed and open-ended) | Self-administered |
| 2 | Interview schedule and Tape Recorder | One-on-one in-depth interviews, recording and note taking |
| 3 | Focus group discussion guide and Tape Recorder | Round table discussion, recording and note taking |
| 4 | Observation guide/checklist of facilities | Observing, note and picture taking |

Source: Author's Construct, December 2017.



### 3.6 Quality Control

To ensure reliability of the data, the collection tools were standardized for use. The structured questionnaire was pre-tested at the Imam Hall, which is one of the five residential student Halls on the Wa UDS Campus. In the light of this, questionnaires were administered to 50 students. On the sport modification of the questionnaire was made to eliminate or modify difficult and ambiguous questions. The answered questionnaires were analyzed using the SPSS and a reliability test was run using the Cronbach's Alpha reliability test and the test score was ***0.813*** representing about ***81%*** consistency produced

by the instrument. In this regard, the questionnaire demonstrated good internal consistency and similar results were produced when it was used to collect the actual data. Also, improper wording of questions and errors in framing questions were detected and corrected before the full study was carried out.



### 3.7 Ethical Considerations

Consent was sought from the University and all study participants were verbally informed before the commencement of any interviews or study activity and only those who agreed to be part of the study were included. Study participants were free to withdraw from the study at any time without any penalty. Information collected from study participants was treated with utmost confidentiality.

### 3.8 Data Analyses Plan

Data from the quantitative arm of the study was entered in the Statistical Package for Social Sciences (SPSS version 18.0) for Windows. Data was clean and coded for statistical analysis. Univariate analysis was done for the socio demographic characteristics of the respondents whilst bivariate analysis was done to determine possible association between the availability of residential hall toilet, hand wash facilities and the sanitation condition of these facilities. Multivariate analysis was performed to find the factors or challenges facing toilet and hand wash facilities on the campus or determinants of the utilization of the facilities. In both bivariate and multivariate analyses, P-values were considered statistically significant at $P< 0.05$. Chi square values were used as test of statistical significance. The qualitative data from the in-depth interviews and FGD were transcribed. Content and thematic analysis was then performed

aligning them to the quantitative data in the form of quotes. Pictures from the observation were also included in the analysis.

# CHAPTER FOUR

# RESULTS

## 4.1 Introduction

This chapter presents the results of the study according to the research objectives namely: the types of toilet and hygiene facilities available in the students' halls of residence; the adequacy of sanitation facilities in the students' halls of residence and the level of utilization of the available sanitation facilities.

## 4.2 Socio-demographic Characteristics of Respondents

Table 4.1 presents the respondents' socio-demographic background. Overall, 332 students were included in the study. Significantly more males were included than females (72.9% vs. 27.1%, $p < 0.001$). Their ages range from 18 to 40 years. By age categories, 51.5% (171) were between the ages of 21-25 years and 4.2% (14) between the ages of 36-40 years.

With regards to their courses of study, 17.2% (57) of respondents offered Integrated Development Studies (IDS), 11.4% (38) offered Integrated Business Development (IBS), 23.5% (78) offered accounting, 17.8% (59) offered Integrated Community Development, 13.0% (43) offered environmental Studies, 11.1% (37) offered Bachelor of Commerce (B.Com) and 6.0% (20) offered Bachelor of Education. While 34.0% (113) of respondents were each at levels 200 and 300, 12.3% (41) and 18.7% (62) were at levels 100 and 400 respectively (Table 4.1).

**Table 4.1: Respondents' Socio-demographic Background**

| Characteristics | Number (N) | %N |
|---|---|---|
| **Age group** | | |
| <= 20 | 81 | 24.4 |
| 21 – 25 | 171 | 51.5 |
| 26 – 30 | 46 | 13.9 |
| 31 – 35 | 20 | 6.0 |
| 36 – 40 | 14 | 4.2 |
| **Total** | **332** | **100** |
| **Religion** | | |
| Christianity | 233 | 70.2 |
| Muslim | 93 | 28.0 |
| Traditional | 6 | 1.8 |
| **Total** | **332** | **100** |
| **Course of Study** | | |
| IDS | 57 | 17.2 |
| IBS | 38 | 11.4 |
| Accounting | 78 | 23.5 |
| ICD | 59 | 17.8 |
| Environment | 43 | 13.0 |
| B. Com | 37 | 11.1 |
| B.Ed. Social | 20 | 6.0 |
| **Total** | **332** | **100** |
| **Level of study** | | |
| 100 | 41 | 12.3 |
| 200 | 113 | 34.1 |
| 300 | 116 | 34.9 |
| 400 | 62 | 18.7 |
| **Total** | **332** | **100** |
| **Marital Status** | | |
| Single | 314 | 94.6 |
| Married | 18 | 5.4 |

| | | |
|---|---|---|
| **Total** | **332** | **100** |

### 4.3 Availability of Toilets and Urinary Facilities

Overall, only 19.0% (63) of the students thought the facilities were adequate, 61.0% (204) thought the facilities were somehow adequate while 20.0% (65) said the facilities were inadequate as shown by Fig 4.1. The type of toilets and urinary facilities is presented in table 4.2. Of the students interviewed, 85.5% and 66.0% of the students use water closets for toilet and urinals respectively. In all, 10.0% of the students practices open defecation while 21.7% of them urinate in the open (table 4.2). With respect to the design, 59.0% (196) of the students said there were separate toilets facilities for females and males while 41.0% of the students said there were no separate toilets facilities for the females and males. Also while 78.6% (261) of the students said the design ensured adequate privacy, 21.4% (71) thought privacy was somehow compromised in the design.

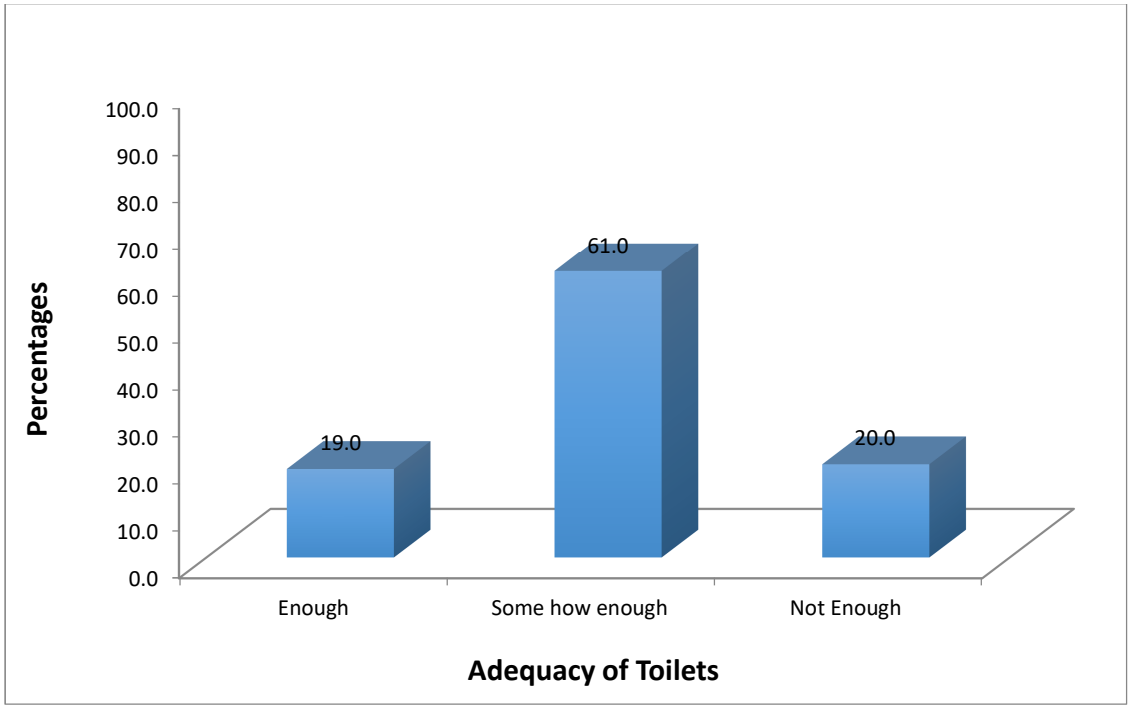

**Figure 4.1: Adequacy of Toilet Facilities on Campus**

**Table 4.2: Types of Toilets and Urinal Facilities in the Hostels**

| | Number (N) | %N |
|---|---|---|
| **Type of Toilet facilities** | | |
| Pit latrines | 15 | 4.5 |
| Water closets | 284 | 85.5 |
| Free range | 33 | 10.0 |
| **Total** | **332** | **100** |
| **Type of urinal facilities** | | |
| Cemented urinals | 18 | 5.4 |
| Urine bowls | 9 | 2.7 |
| Soak away-pit urinals | 14 | 4.2 |
| Free range | 72 | 21.7 |
| Water closets | 219 | 66.0 |
| **Total** | **332** | **100** |



With regards to usage, 32.8% (109) of the students said, the toilets facilities were often misused by students. Misusage includes soiling of the toilet seats and the environment with excreta. While 12.7% (42) of students indicated that the facilities were never cleaned, 47.9% (159) said the facilities were cleaned only for a short while. When students were asked to assess the general cleanness of the toilets and urinary facilities at

the hostels, only 5.7% (19) thought it was good, 28.6% (95) said it was bad and 65.7% (218) assessed it to be on average. Observation of some of the toilets showed that the toilets were not well kept. Some facilities were broken while others not properly cleaned as shown by Fig 4.4 to 4.6.



**Picture 4.1: A closet messed up with feaces**

**Picture 4.2: An unflushed water Closet**

**Picture 4.3: Nonfunctioning Urinary**

**Picture 4.4: Dirty Floor**

### 4.4 Hand Hygiene Facilities

When the availability of hand washing facilities was assessed, 64.8% (215) of the students had access to hand washing facilities whereas 35.2% (117) had no access to hand washing facilities. Out of those that had access to hand washing facilities, 38.1% (82) said the facilities were functional while 61.9% (133) said they were non-functional. During the FGD with students, one of them described the facilities as *"white elephant.*

Overall, when students' hand washing practice was assessed, 66.3% (220) said nobody bothers to wash their hands even if there is water available while only 33.7% (112) of them sometimes wash their hands. With regards to hand washing materials, 2% (7) of respondents used soap for hand washing, 55% (184) of respondents reported that water is always available at sanitary facilities while 43% (141) reported that both water and soup

are always available at sanitary facilities for hand washing by users of the facilities as presented in Figure 4.1.

### 4.5 Clean Water Supply System

While 85.5% (284) of the students said running water was available, 14.2% (48) did not have access to running water at all. Of those with access to water, sources of the water included Ghana Water Company (53.0%), Mechanized bored holes (35.5%) and Tanker services (10.1%) as shown in table 4.2. sources of water for those with no access to running water include non-mechanized borehole (42.6%), tanker service (36,2%), rain water (17.0%) and spring water (4.3%) (Table 4.3).

> *“” Water is not a problem. But for sanitation and hygiene purposes especially the hostels there is no problem*



**Table 4.3: Source of Water for Hand-Wash**

| Source of Water | Number (N) | %N |
|---|---|---|
| **Those with access to water** | | |
| Ghana Water Company | 151 | 53.0 |
| Mechanized bore holes | 100 | 35.1 |
| Tanker services | 29 | 10.2 |
| Others | 5 | 1.8 |
| **Total** | **285** | **100** |
| **Those without access to water** | | |
| Tanker service | 17 | 36.2 |
| Rain water | 8 | 17.0 |
| Non mechanized Borehole | 20 | 42.6 |
| Spring water | 2 | 4.3 |
| **Total** | **47** | **100** |



In general, 48.0% (160) of the students said the water supply system was irregular while 52.0% (172) thought it was regular. The regularity of water supply is depicted by Fig 4.2. To ensure availability of water in the hostels, 89.8% (298) of the respondents store water for future use but 10. 2% (34) of them do not store at all. For those with storage facilities 52.3% (156) stores in personal storage containers and 47.7% (142) in common water reservoirs.

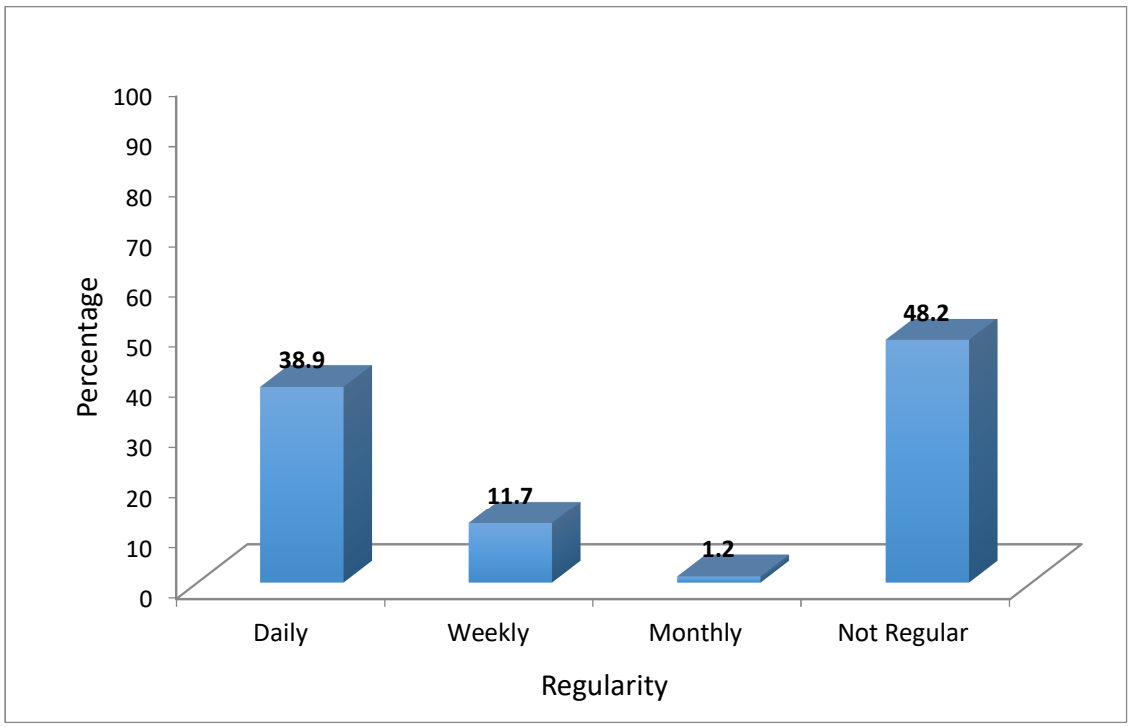


**Figure 4.2: Regularity of Water Supply for Use at Sanitary Facilities**

The observation and in-depth interview further indicated that indeed the various residential halls had the needed toilets and hand-wash facilities for students use as the Head of the Physical Works and Development had this to say:

> *"Yeah! Toilet and hand-wash facilities are not a problem. We have adequate toilets and hand-wash facilities in the various halls for students use. That is, water closets toilets and wash basins. Stand pipes are also available for wash purposes"*

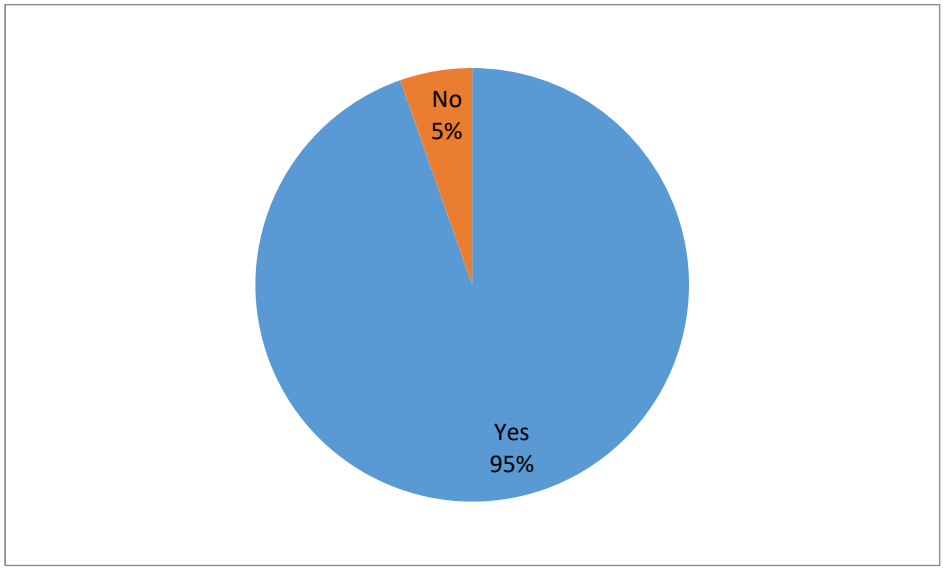


**Figure 4.3: Presence of Sanitary Facilities at Lectures Rooms and Hostels**

Still from Table 4.2, the source of water for use at sanitary facilities on campus is not without problems. About 54.0% of student interviewed reported that they encounter some problems in getting water for use at sanitary facilities compared to 46.4% of students who reported otherwise. The major problem faced by students in getting water for use at sanitary facilities is far travelling distance to the source of water as reported by 32.2% of students interviewed. About 16.3% of students interviewed also complained of overcrowding at the source of water to main good sanitation on campus while 30.4% of students interviewed reported poor quality of water as a problem. This was acknowledged by the Head of the Physical Works and Development in an interview as he indicated:

> *"Water is not a problem. But for sanitation and hygiene purposes especially the hostels there is no problem"*

### 4.6 Factors Influencing the Use of Sanitary Facilities

The study shows that factors such as religious affiliation of respondent, year or level of study and marital status had no significant effect on students' use of sanitary facilities on the university's campus. On the other hand, age of students, course of study and cleanliness of sanitary facility have significant effect on students' decision to use sanitary facilities on campus. Table 4.4 presents the binary logistic results on factors influencing students' use of sanitary facilities on the university campus. This study discusses only the factors with significant effect on students' decision to use sanitary facilities.

Age of students have a significant negative relationship with students' decision to use sanitary facility on campus. Thus, the older a student, the less likely he/she will use sanitary facilities on campus such as urinary and toilets and the younger a student, the higher the probability that the student will use sanitary facilities on campus.

Also, the course of study of students has a significant positive effect on students' decision to use sanitary facilities. Students' who offer science based programs are more aware of the health implications of using public sanitary facilities than those who offer other non-science programs.

The cleanliness of the sanitary facility has a significant positive effect on students' use of sanitary facilities on campus. Thus, when students opine that toilet and urinary facilities are always kept clean, it heightens their desire to use such facilities than when they think the facilities are often dirty and not in the best condition for use.

**Table 4.4: Binary Regression Results on Factors Influencing Students' Use of Sanitary Facilities**

| Variable | Coefficient | Standard Error | P – Value |
|---|---|---|---|
| Constant | 1.659 | 0.229 | 0.000 |
| Age | -0.048 | 0.027 | 0.074 |
| Sex | -0.008 | 0.056 | 0.881 |
| Religion | 0.020 | 0.050 | 0.680 |
| Course | 0.029 | 0.014 | 0.037 |
| Level | -0.026 | 0.027 | 0.344 |
| Marital Status | -0.064 | 0.074 | 0.389 |
| Facility availability | -0.081 | 0.110 | 0.459 |
| Cleanliness | 0.206 | 0.055 | 0.000 |
| Summary of Model Diagnostics | | | |
| Number of observations = 332 | | Pseudo $R^2$ = 0.2013 | |
| Wald $Chi^2$ = 3.820 | | Log likelihood = -250.201 | |
| Prob > $Chi^2$ = 0.001 | | | |

# CHAPTER FIVE

# DISCUSSION

## 5.1 Introduction

The study assessed the availability of toilet and hand wash facilities on the Wa campus of University for Development Studies. To achieve this goal, the study assessed the types of toilets and hygiene facilities available for students use; adequacy of these facilities and their utilization as discussed in details in the following sub-sections. Relevant socio-demographic characteristics of respondents such as age, sex, religion, course of study, year of study and marital status were also captured in the study as discussed below.

## 5.2 Socio-demographic Characteristics of Respondents

The relevant socio-demographic characteristics of respondents considered in this study are the age, sex, Religion, course of study, year of study and marital status of students. The reason being that these characteristics of students influence their accessibility and usage of sanitary facilities not only on the university campus, but everywhere they find themselves. Following from this, majority of the respondents were between the ages of 21 and 25 years (51.5%) while minority were between the ages of 36 and 40 years (4.2%). This suggests that most respondents were matured and therefore would appreciate the importance of sanitary facilities to environmental cleanliness. In this case, such group of people would want to ease themselves in a very decent and closed places but not the free range system. For sex distribution of respondents, about 72.9% of respondents were males while 27.1% were females. Though majority of the respondents were males, none of them, whether male or female would want to ease themselves in the

open or in an unsanitary environment. Therefore, the availability of toilet and hand wash facilities would maintain some level of good sanitation both at the hostels and lecture halls since both males and females would have places of convenience.

As the saying goes, 'Cleanliness is next to Godliness' and as such religion plays a very important role in sanitation. In this case, since all the students belong to one religious faith or the other, they will cherish good sanitation and environmental cleanliness and therefore would not want the University Campus littered with urine or fecal matter. Therefore, the availability of sanitary facilities like toilet and hand wash facilities would help maintain good sanitation on campus and students would always want to use them to maintain good sanitation in accordance to their religious beliefs.



The field data revealed that respondents offered various programs ranging from level 100 to 400. In this case, about 17.2% of them offered Integrated Development Studies (IDS), 11.4% offered Integrated Business Development (IBS), 23.5% offered accounting, 17.8% offered Integrated Community Development, 13.0% offered environment, 11.1% offered Bachelor of Commerce (B.Com) and 6.0 offered Bachelor of Education. About 34.0% and 34.9% of respondents were at levels 200 and 300 respectively while 12.3% and 18.7% were at levels 100 and 400 respectively. This implies that adequate toilet and hand wash facilities would be required to maintain good sanitation on campus. This is because at any point in time, they would be the need to ease themselves as the various lecture halls are constantly in use by students in all the days of the week. Without these sanitary facilities, the whole campus environment would be littered with urine and human excreta

since students at all cost would have to ease themselves. This could create poor sanitary conditions and subsequently outbreaks of communicable diseases such as cholera.

### 5.3 Availability of Toilets and Urinary Facilities

***Availability***

With regard to availability of toilet facilities, Boadi and Kuitunen (2005) noted that flush toilets are typically considered to be the most sanitary form of waste disposal, followed by sealed pit and ventilated improved pit latrines, and finally by open pits, all of which are considered more hygienic than open defecation unless such defecation is sufficiently distant from human habitation as to pose no risk. In this regard, the field results showed the availability of toilet and urinary facilities in the University. In this regard, 4.5% ( 15) of students interviewed reported the presence of pit latrines at their hostels and lecture rooms; 85.5% (284) of sampled students reported the presence of flush toilet (with running water) in their hostels and lecture rooms; while 10% (33) of students interviewed reported complete absence of any toilet facility in their hostels or lecture rooms. This means that majority of the students are of the view that flush toilet (with running water) are available at the university's lecture rooms and students' hostels and hence could enhance the sanitation on the campus. The availability of these facilities has tendency to reduce or if not completely eliminate the chances of students contracting certain sanitation related diseases such as typhoid. As noted by Boadi and Kuitunen (2005) people in households without sanitation infrastructure had significantly higher diarrhea incidence than those in households with either a flush toilet or a latrine. In addition, they found that households that shared sanitation facilities with five or more households had significantly higher rates of childhood diarrhea than those with private facilities,

presumably because shared facilities tend to be less hygienic. These findings corroborate results of a multivariate logistic analysis using nationwide data from Ghana which found that the likelihood of childhood diarrhea was 24% higher in households lacking any sanitation facility, relative to those with latrines or toilets suggesting availability toilet facilities is very essential in every residential facility.



The type of urinary facilities available at the university's hostels and lecture rooms were also sought. The field results clearly showed various urinary facilities exist on the campus. In this case, 5.4% of students reported the availability of cemented urinary facilities at the hostels and lecture rooms; 2.7% of respondents agreed to the availability of urinary bowls; 4.2% of students reported the presence of soak away pits; 65.7% of students revealed that water closets facilities are available at the university's lecture rooms and hostels; while the remaining 22% students reported resorting to the 'free range system' of toilet and urinary. The privacy of users of urinary facilities is crucial in influencing students' usage of such facilities. A total of 59% (196) of students interviewed reported that urinary facilities are often separated for male and female users to avoid any form of harassment from either sex on the other. The finding is that majority of the students agreed to the availability of urinary facilities at the university's lecture rooms and students' hostels and are separated for male and female users.

***Adequacy***

The adequacy of toilet and urinary facilities plays an important role in maintaining good sanitation. The field results however revealed that these sanitary facilities on the

university's campus is not enough to ensure good sanitation. About 61% (204) reported that toilets facilities on campus are somehow enough for users on campus while about 20% (65) indicated that toilet facilities available on campus are not enough to meet the needs of toilet users on campus. This supports the findings of Okparaeke (2013) in Madu and Ikechukwu (2017) on sanitation infrastructure and management adequacy in tertiary institutions in Nigeria. He found that almost all tertiary institutions in Nigerian had ancillary facilities functioning below average. The available toilets and lavatories in the campuses as he noted lacked good drainage system, inadequate water supply, poor lighting, broken water closets, septic tanks and soakage pits. Some of the toilets were temporally out of use.



**Utilization of Toilets and Urinary Facilities**

Although the use of public sanitation is a common practice in Ghana, Heijnen et al. (2014) cautions against the promotion of such use citing that in some countries, the use of shared latrines is associated with a significant risk for disease. Heijnen et al. (2014) also notes that in some countries, shared latrines are not associated with such risk. This implies that the risk of disease is not inherent to the use of shared latrines, but to associated behaviors or factors with 7 shared latrines. The utilization of sanitary facilities was analyzed in this regard. On how users feel when they use sanitary facilities on campus, 41.3% (137) reported that though they hate visiting the place, but there is no other alternative facility available; 26.5% (88) of students reported that they have no problem using sanitary facilities on campus while 25.9% of students said they resort to the nearby bush for urinary and toilet. The remaining 6.3% (21) of the students

interviewed said they sometimes avoid going to the sanitary facility. These reveals the appalling nature of toilet and hand-wash facilities in the various halls though students had the desire to use the facilities. This is in tandem with a study findings by Madu and Ikechukwu (2017). Accordingly, the state of toilet and hand-wash facilities in tertiary institutions in Nigeria were in deplorable state which could easily lead to the outbreak of communicable diseases. The study further indicated toilets and lavatories inadequacy and very low cleaning frequency, bushy compounds and poor waste management systems.

**Factors the Influence the Use of Toilets and Urinary Facilities**

The nature of the sanitary situation at sanitary facilities greatly influence its' use by users. As indicated by Cairncross (2003) although the importance of toilet facilities for schools is acknowledged, in practice the sanitary situation in many schools is deplorable. The author affirmed that while efforts were made to provide sanitation facilities in schools it is often found that toilets and hand wash facilities are either absent or do not function properly; toilets are padlocked because students are not able to use them properly; students especially females, do not patronize residential halls due to the lack appropriate sanitation facilities. If toilets and hand wash facilities are absent, or are badly maintained and used, hostels can become a health hazard (Akbar, 2000). The lack of and/or poor maintenance of water and sanitation facilities in hostels perpetuates the cycle of water-related illnesses and has debilitating effects on learning. This situation is not much different from what happens with regard to toilet facilities on the campus as poor sanitary conditions are experienced.

Following from this, 32.8% of students interviewed revealed that students often 'pupu' on top of the slap of toilet and anyhow. This suggests a dire situation of the state and utilization of sanitation facilities particularly the toilet facilities and can easily lead to outbreak of communicable diseases such as cholera and typhoid. About 12.7% of students indicated that the facilities are never cleaned while 47.9% of sampled students revealed that even if the facilities are clean, it will be for a short time. The observation of the state of toilet facilities in the various halls also revealed their poor state. This could lead to a great number of students unwilling to use the facilities since they are not conducive for use.



### 5.4 Hand Hygiene Facilities

***Availability***

According to Waterkayn (2000) hand washing facilities in most schools has not been considered important. Yet from a preventive health perspective, hand washing is absolutely crucial. Without hand washing, all investment in fancy latrine construction is a complete waste of time and resources as fecal contamination from hand to mouth, food, friends etc. is virtually guaranteed. The use of sanitary facilities therefore is partly influenced by the availability of certain hand washing materials at the facility on campus. The study revealed that 64.8% (215) of the sample reported that hand washing materials are available at sanitary facilities on campus compared to 35.2% (117) of students interviewed who reported non-availability of hand washing materials at various sanitary facilities on the campus of the university.

On what type of hand washing materials are available at sanitary facilities, about 2.1% of respondents reported the availability of soup at sanitary facilities; 55.4% reported that water is always available at sanitary facilities while 42.5% reported that both water and soup are always available at sanitary facilities for hand washing by users of the facilities. The implication is that majority of the students are of the opinion that water is always available for hand washing at sanitary facilities but not soup. This could result in students contracting certain viral diseases such as dysentery as anchored by a study carried out in Bangladesh by the International diarrhea diseases research Centre. Accordingly, hand washing can cut diarrhea diseases dramatically by 40% in under five age group, 20% in the five to nine age group and by 10-15% in the other age groups. Those who wash hands, food or eating utensils in the unclean water risk catching typhoid, cholera, dysentery, gastroenteritis and hepatitis.

***Adequacy***

On the adequacy of hand washing facilities, about 70.5% (234) of students interviewed indicated that hand washing facilities on campus were compared to only 29.5% (98) who reported that hand washing facilities were inadequate to cater for the sanitation needs of students. During the FGD with students, one of them stated that hand-wash facilities were woefully inadequate compared to the number of students on campus suggesting that hand-wash facilities are few and therefore cannot meet the demands of students. This supports a situation report by UNICEF (2000) in Burkina Faso and other countries in sub-Sahara Africa on water and sanitation. The report showed variations in water and sanitation facility distribution between homes and schools. For most of the countries, the

report observed lower coverage in school water and sanitation compared to the general population and low state of usage and maintenance. The same report asserted that in Cote d' Ivoire only 32% of schools had water wash facilities.



***Reasons for non-functionality***

The reason for non-functionality of hand wash facilities on the campus is mixed. In this case about 48.2% of students reported that hand washing facilities on campus are usually non-functional because of the non-availability of water or soap or both. About 42.2% of sampled students were also of the view that hand washing facilities are often non-functional because of the unavailability of only water at the sanitary facility for use.

***Utilization of the hand washing facilities***

The field data revealed that students patronize the use of hand wash facilities on the campus. In this case, strong majority (92%) indicated that they always used the facilities whenever they went to the wash-room. Apart from this, students expressed their desire and willingness to always wash their hands with soap after visiting the wash room. This is influenced by the fact that the inability to properly wash one hands after visiting the wash room could lead to contraction of certain viral diseases.

**5.5 Clean Water Supply System**

***Availability of clean running water***

According to Lakisha (2014) for effective sanitation situation to be ensured, regular water supply is critical. The field results showed various sources of water for sanitation purposes on the university campus. As reported by majority of the respondents, water is

always available at sanitary facilities for hand washing and other purposes. Such water can either be running water or sourced from other avenues. In this regard, greater proportion (85.8%) of sampled students reported that running water is always available at sanitary facilities compared to only 14.2% (47) of students who reported non-availability of running water at sanitary facilities. The main source of running water for use at sanitary facilities on campus is GWC (54.2%). About 32.5% of sampled students reported sourcing running water from mechanised boreholes.

***Regularity of water supply***

However, water supply is erratic. The irregularity of water supply for toilet and hand-washing purposes was attested to by students during the FGD. This situation has serious health implication as this can lead to cholera outbreak and other infectious diseases.

Therefore, given that water supply on campus for use at sanitary facilities is not regular, there is the need for students to cultivate the habit of storing water for use at sanitary facilities. For that matter, about 57.2% of students interviewed store water for use at sanitary facilities relative to 42.8% who do not. About 47.0% of students interviewed revealed that they store water using their individual storage facilities compared to 42.8% of students who reported storing water for use at sanitary facilities using common storage facilities available on campus.



# CHAPTER SIX

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS



### 6.1 Summary

- Of the 332 students included in the study, significantly more males were included than females (72.9% vs. 27.1%, $p < 0.001$).
- Whereas respondents ages range from 18 to 40 years, over half of them were 25 years and below.

### 6.1.2 Availability and Utilization of Toilets and Urinary Facilities

- Overall, only 19.0% (63) of the students thought the facilities were adequate, 61.0% (204) thought the facilities were somehow adequate while 20.0% (65) said the facilities were inadequate.
- Despite the availability of toilets, 10.0% of the students still practice open defecation while 21.7% of them urinate in the open.
- While 78.6% (261) of the students said the design ensured adequate privacy, 21.4% (71) thought privacy was somehow compromised in the design.
- Of the students interviewed, 85.5% and 66.0% of the students use water closets for toilet and urinals respectively.
- In all, 5.7%, of the assessed the general cleanness of the facilities to be good, 28.6% of them assessed as bad while 65.7% of the students assessed the facilities to be average.

### 6.1.3Availability and Utilization of Hand Hygiene Facilities

- In all 64.8% (215) of the students had access to hand washing facilities whereas 35.2% (117) had no access to hand washing facilities.
- Of those with access to hand washing facilities, 38.1% (82) said the facilities were functional while 61.9% (133) said they were non-functional.
- With regards to the use of hand washing materials, 2% (7) of respondents used soap for hand washing, 55% (184) of respondents reported that only water is always available at sanitary facilities while 43% (141) reported that both water and soup are always available at sanitary facilities for hand washing by users of the facilities.

### 6.1.4 Availability of Clean Running Water

- While 85.5% (284) of the students said running water was available, 14.2% (48) did not have access to running water at all.
- Of those with access to running water, sources of the water included Ghana Water Company (53.0%), Mechanized bored holes (35.5%) and Tanker services (10.1%) but for those without access to running water, sources of water include non-mechanized borehole (42.6%), tanker service (36,2%), rain water (17.0%) and spring water (4.3%).
- In general, 48.0% (160) of the students said the water supply system was irregular while 52.0% (172) thought it was regular.
- To ensure availability of water in the hostels, 89.8% (298) of the respondents store water for future use but 10. 2% (34) of them do not store at all.

- For those with storage facilities 52.3% (156) stores in personal storage containers and 47.7% (142) in common water reservoirs.
- The major problems faced by students in getting water include long distance from source of water (32.2%), overcrowding at the sources of water (16.3%), and low quality of water (30.4%).



### 6.2 Conclusions

Even though there are water closets and other modern urinals and hand wash facilities available in halls of residency, lack of running water hamper their usage. Consequently some students still resort to open defecation.

### 6.3 Recommendations

1. The Physical and works department needs to repair all broken sanitary facilities in the halls of residence to increase accessibility.
2. Hall management should make effort to supply water to the halls regular to encourage students to use the facilities.
3. There is the need to create awareness among students through continuous education to eliminate open defecation.

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## APPENDICES

## APPENDIX I

## UNIVERSITY FOR DEVELOPMENT STUDIES

## MSc COMMUNITY HEALTH AND DEVELOPMENT

## ACADEMIC RESEARCH

**Questionnaire for students**

Dear respondent,

My name is Cynthia Logo. I am an MSc student of the department of Community Health and Development. I am currently conducting research on the availability, adequacy and utilization of sanitation facilities in tertiary institutions and UDS Residential hostels are

my focus. You have been chosen to be part of this study as a respondent. I therefore request you to kindly give me your honest views on the few questions below. The questionnaire is anonymous because we do not need your name so your views will remain confidential and your Hall will not be mentioned. Where you feel you can't answer feel free to skip. I thank you in advance.



**PERSONAL DATA OF STUDENT**

Age_____

Sex_____

Religion_____

Course_____

Level_____

Residential Status/Name of Hall_____

Marital Status_____

Length of stay in all

**AVAILABILITY OF SANITARY FACILITIES**

1. Are there any sanitary facilities in this hostel

   Yes No

2. What type of sanitation facilities do you have in your hostel?

**Toilets:**

a. Pit latrines

b. Flush toilets (with running water)

c. None at all

**Urinals**

a. Cemented urinals

b. Urine bowls

c. Soak away-pit (a dug hole with stones in it)

d. We just go to the nearby bush

e. Water closets

3. Separate toilets and urinals for Female and Male:

a. Available

b. Not available

**Hand Wash Facilities**

4. Facilities for washing hands after the use of toilet:

a. Available

b. Not available

5. Which of the following are available

a. Soup

b. Water

c. Both

**AVAILABILITY OF WATER FOR SANITARY AND OTHER USES**

6. Availability of running water: Yes or No

If yes, source:

a. GWC

b. Mechanized bore holes

c. Tanker services through overhead tanks

d. Others, specify……..

If no, where do you get water

a. Tanker service

b. Rain water tank

c. Non mechanized Borehole

d. Spring water

e. Others, specify……

7. Are there problems you face in getting water from the source mentioned above

a. Yes

b. No

8. If yes what are those problems?

a. Far from campus

b. Over crowding

c. Poor quality

d. Low yield

e. Harassment by the villagers

9. How regular is the water supply

a. Daily

b. Weekly

c. Monthly

d. Not regular

10. Do you store water for sanitary and other uses?

Yes No

If "Yes" how is the water stored for use?

a. Individual storage facilities
b. Common storage facility/ reservoir
c. We don't store water

**ADEQUACY OF SANITARY FACILITIES**

11. Tell us about the adequacy of the sanitation facilities

Toilets:

a. Enough, there is no overcrowding

b. Not enough but somehow we manage

c. Not enough, there is overcrowding

**Urinals:**

a. Enough, there is no overcrowding

b. Not enough but somehow we manage

c. Not enough, there is overcrowding

12. Are the hand-washing facilities functional?

Yes No

13. If No why?

a. Most of the time there is no water when we need it

b. There is not water or soap at all, we never use them

c. There is water and soap most of the time

14. Are the toilets and urinals enclosed to ensure privacy?

a. Yes, the user is completely not seen from outside while using

b. The user is somehow seen from outside while easing themselves



**UTILISATION OF SANITARY FACILITIES**

15. How do you when use the sanitation facilities?

a. I don't have any problem using them

b. I hate going there but I have no choice

c. Sometimes I use the nearby bush

d. Sometimes I avoid going there

16. Which of the following is true about the sanitation facilities? You may tick more than one answer.

a. Students just pupu on top and urinate anyhow

b. The place is never cleaned

c. Even if they clean, the place will be dirty in a short time

d. The place is kept clean as much as possible

17. Which of the following is true about the use of hand-washing facilities?

a. Nobody bothers to wash even if there is water

b. Sometimes I wash, sometimes I just go

c. Most students don't bother to wash their hands

18. Have you ever used any of the sanitary facilities on campus?

a. Yes

b. No

19. If no what is the reason for not using the sanitary facilities?

a. Afraid of contracting infection from urinals and toilets

b. Due to lack of water on campus

c. Lack of interest due to sanitation condition of the facilities

20. How is the general cleanness of the sanitation facilities on your campus?

Bad Average Good

21. Do you know any disease caused by poor sanitation and hygiene?

a. Yes

b. No

22. If yes, what are these diseases?

a. Diarrhea

b. Typhoid

c. Intestinal worms

d. Others (specify)……



**APPENDIX II**

**UNIVERSITY FOR DEVELOPMENT STUDIES**

**MSc COMMUNITY HEALTH AND DEVELOPMENT**

**ACADEMIC RESEARCH**

**IN-DEPTH INTERVIEW GUIDE FOR SANITATION MANAGEMENT TERM**

You are welcome and thank you for accepting to respond to this interview. I am an MSc student with the School of Aliened Health Sciences, Department Community Health and Development of this University (UDS). I am conducting in-depth interviews to find your views on the availability, adequacy and utilization of Toilet and Wash facilities (sanitary facilities) in the university. Your opinion is very important and will help the university to

improve the level of sanitation in the university especially in the residential halls. Please, there is no right or wrong answers. Your contribution is valuable. In order not to lose any important information that you will give, I will like to seek your permission to tape record the interview. Whatever you say will be confidential so feel comfortable to express your opinion. You also have the right to leave, if you wish, in the course of the interview but I would plead with you to complete it since your contribution is needed. You may listen to the recorded discussion at the end of the session.

**PERSONAL DATA OF RESPONDENT**

Title of Respondent_____

Position/Rank_____

Name of Halls_____



**A: SANITARY FACILITIES AND STUDENT POPULATION**

1. Please what would you say about the student population in the halls?

2. Do you think the halls are overcrowded with students?

3. How is the hall able to cope with the increasing number of students? Probe for details especially on sanitary facilities?

4. What should be the standard population of students per room / lecture halls?

5. What types of sanitation facilities do you have in the hostels?

6. Do you provide complementary facilities like hand-washing and anal cleansing material?

7. (In the case where they do not have the above) do you think if you had such complementary facilities they would be fully utilized by the students?

8. Do you think sanitary facilities in the halls are adequate for use by students? Probe for details especially on sanitary facilities?

**B: WATER, SANITATION AND HYGIENE**

9. What is the situation of water, sanitation and hygiene on the campus especially in the hostels?

10. Do you have hand washing facilities for students in residential and lecture halls? Probe for why such facilities are not provided and future plans

11. What do you do when water stops running in the halls? Probe whether the toilets are locked, where water is gotten to flush the toilets etc.

12. How often are sanitary cleaners supposed to clean the toilets and washrooms and also empty the sanitary bins? Probe for whether they do it as expected (Sanitation Officer)

13. Do you provide the cleaners with disinfectants to clean the toilets and washrooms? Probe for type of disinfectants provided, supervision of cleaners etc. (Sanitation Officer)

14. Do you have alternative toilet facilities for students to use when water stops flowing? Probe for reasons for these lapses etc.



15 .What plans has your outfit to overcome the challenges of water, sanitation and hygiene in the hostels?

16. In your opinion, do you think some of the students get sanitation related diseases?

**C: MAINTENANCE OF SANITARY FACILITIES (INCLUDE SANITARY CLEANERS)**

17. How many toilets/baths are in each floor and how may are functioning?

18. How old are some of these facilities? Probe to know the last time any attempt was made to replace them

19. How often is maintenance carried out on the sanitary facilities in the halls?

20. What efforts are in place to systematically replace the non-functioning facilities (if any)?

21. How do you assess the knowledge/awareness of students with regard to sanitation/hygiene observance and what they actually do in practice?

22. What are the major challenges you face in providing sanitation facilities to students?

23. What other sanitation issues are of concern to you which we have not discussed?

24.How are the sanitary facilities kept clean? Probe to know how regular the cleaning is done, the supply cleaning detergents and protective cloths

**APPENDIX III**

**UNIVERSITY FOR DEVELOPMENT STUDIES**

**MSc COMMUNITY HEALTH AND DEVELOPMENT**

**ACADEMIC RESEARCH**

**Interview guide for FGD (Residential students)**

Dear respondents,

My name is Cynthia Logo. I am an MSc student of the department of Community Health and Development. I am currently conducting research on the availability, adequacy and utilization of sanitation facilities in tertiary institutions and UDS Residential hostels are

my focus. You have been chosen to be part of this study as a respondent. I therefore request you to kindly give me your honest views on the few questions below. The questionnaire is anonymous because we do not need your name so your views will remain confidential and your Hall will not be mentioned. Where you feel you can't answer feel free to skip? I thank you in advance



**TOILET FACILITIES**

1. What type of Toilet facilities do you have in your hostel?

2. Comment on the general cleanness of the Toilet facilities in your hostel

3. What is your attitude towards using the Toilet facilities; is it a place you are happy to go to or you go begrudgingly?

4. What do you have to say about how your colleagues use the Toilet facilities?

5. Tell me about the adequacy of the Toilet facilities; are they enough?

6. Are the facilities enclosed to ensure privacy?

7. Are all the toilet facilities functioning?

8. Do you think the toilet facilities are adequate?

**HAND WASH FACILITIES**

9. Are there hand wash facilities for use in/around the toilet facilities?

10. Are the hand-washing facilities functioning?

11. Do the facilities always have soap for use?

**AVAILABILITY OF WATER FOR SANITARY USE**

12. What is the situation of water supply in the Hall?

13. In the case of water shortage how do you use these sanitary facilities?

14. What challenges do you face in using the toilet and hand-washing facilities?



**APPENDIX IV**

**UNIVERSITY FOR DEVELOPMENT STUDIES**

**MSc COMMUNITY HEALTH AND DEVELOPMENT**

**ACADEMIC RESEARCH**

**CHECKLIST FOR PHYSICAL OBSERVATION OF SANITARY FACILITIES**

Please tick the appropriate box or fill in observation where required. Please tick only one entry unless otherwise stated.

| | | |
|---|---|---|
| 1 | Availability of toilets/urinals | a. Available<br>b. Unavailable |

| | | |
|---|---|---|
| 2 | Number of toilets stances | a. For females:…….<br>b. For males:…… |
| 3 | Type of toilets | a. Pit latrines<br>b. Flush Toilet |
| 4 | Anal cleansing material | a. Available<br>b. Unavailable |
| 5 | Hand washing facilities | a. Available<br>b. Unavailable |
| 6 | Are hand washing facilities functional | a. There is no water and no signs of recently being used<br>b. There is no water but looks recently used<br>c. There is water<br>d. There is water but no sign of recently being used |
| 7 | Are facilities enclosed especially the girls‟ side | a. doors are there<br>b. Doors are not there |

| | | |
|---|---|---|
| 8 | Privacy guarantee of facilities especially the female side | a. User can be completely invisible from outside while using<br>b. Users can be seen while using |
| 9 | Walls are smeared with pupu | a. Yes<br>b. No |
| 10 | There are dropping of pupu on top | a. Yes<br>b. No |
| 11 | General appearance of facilities | a. Generally clean<br>b. Not generally clean |