KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES

FACULTY OF ALLIED HEALTH SCIENCE

DEPARTMENT OF NURSING

DIPLOMA PROGRAMMES

ATTITUDE AND PRACTICE OF HAND HYGIENE AMONG THIRD YEAR STUDENT NURSES AT HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE-BEREKUM

SUBMITTED BY:

CAMPION LIMUUB COLLINS - 5721021

BOAKYE SAMUEL - 5701821

[HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM]

AFFILIATED TO KNUST, KUMASI

HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM

ATTITUDE AND PRACTICE OF HAND HYGIENE AMONG THIRD YEAR STUDENT NURSES AT HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE-BEREKUM

CAMPION LIMUUB COLLINS - 5721021

BOAKYE SAMUEL - 5701821

2022

DECLARATION

We hereby declare that this submission is our own work towards the Diploma in General Nursing and that, to the best of our knowledge, it contains no material previously published by another person nor material which has been accepted for the award of diploma of the University, except where due acknowledgement has been made in the text.

CAMPION LIMUUB COLLINS		18/05/23
5721021	SIGNATURE	DATE
BOAKYE SAMUEL		18/05/23
5701821	SIGNATURE	DATE

Certified by:

MISS. ANTOINETTE EFFUM		18/05/23
(SUPERVISOR)	SIGNATURE	DATE
MONICA NKRUMAH	.....	.....
(PRINCIPAL)	SIGNATURE	DATE

ABSTRACT

The study focused on the attitude and practice of hand hygiene among third year students nurses of Holy Family Nursing and Midwifery Training College, Berekum during this COVID-19 pandemic. A descriptive study design was used for the study. Convenience sampling technique was used to select one hundred and twenty-six. Data collection was done through the use of structured and semi structured questionnaires. The study found that vast majority (96%) of the respondents said handwashing prevents the direct transfer of infectious pathogens. Majority (90%) of the respondents indicated that one way of reducing COVID 19 transmission is to promote good hand hygiene practices. Vast majority (94%) of the respondents were of the view that the target of proper hand washing is to break the infection chain. Most (60%) of the respondents were reminded by notice boards to wash their hands followed by those who were reminded by pictures (18%), on their own (13%) and friends (2%). Almost all (91%) the respondents said they always perform hand washing after visiting the washroom. The study recommended frequent hand hygiene training should be carried out to ensure students are adequately informed on the benefits of hand hygiene. It also recommended that hospitals and institutions avoid the use of bar soaps in hand hygiene since they can harbor bacteria. The study revealed adequate knowledge on handwashing among nursing and midwifery trainees. The most effective hand hygiene method was handwashing with antiseptic/antibacterial soap and water.

TABLE OF CONTENT

DECLARATION **1**

ABSTRACT ..... **ii**

TABLE OF CONTENT ..... **iii**

LIST OF TABLES ..... **v**

LIST OF FIGURES ..... **vi**

ABBREVIATION ..... **vii**

ACKNOWLEDGEMENT ..... **viii**

CHAPTER ONE **1**

INTRODUCTION **1**

1.0 Background to the study 1

1.1 Problem statement 4

1.2 General objective of the study 5

1.4 Specific Objective 6

1.4 Operational Definitions 6

CHAPTER TWO **7**

LITERATURE REVIEW **7**

2.0 Introduction 7

2.1 Overview 7

2.2 Knowledge on Hand washing 7

2.3 Practice of Hand Washing 10

2.4 Barriers to hand washing 13

CHAPTER THREE **16**

MATERIALS AND METHODS **16**

3.0 Introduction 16

3.1 Study area 16
3.2 The study population 17
3.3 Study design 17
3.4 Sampling technique and Size 17
3.5 Data collection methods and instruments 18
3.6 Data analysis techniques 18
3.7 Ethical consideration 18
3.8 Limitation of the study 19
CHAPTER FOUR 20
DATA ANALYSIS AND RESULTS 20
4.0 Introduction 20
4.1 Demographic Data of Respondent 20
4.2 Knowledge on Hand Washing 22
4.3 Handwashing Practice 25
4.4 Barriers to Hand Washing 27
CHAPTER FIVE 28
DISCUSSION OF THE RESULTS 28
5.0 Introduction 28
5.1 Discussions 28
5.2 Conclusions 30
5.3 Recommendations 30
REFERENCES 31
APPENDICES 39

LIST OF TABLES

Table 4. 1: Respondents Marital Status 21

Table 4. 2: Respondents Religion 22

Table 4. 3: Respondents knowledge on hand washing 22

Table 4. 4: Respondents practice of handwashing 25

Table 4. 5: Respondents on Instances Hand Washing is Performed 26

Table 4. 6: Respondents barriers to hand washing 27

LIST OF FIGURES

Figure 4. 1: Respondents Age 20

Figure 4. 2: Program of Study 21

Figure 4. 3: Respondents on Most Effective Hand Hygiene Method 24

ABBREVIATION

COVID-19	Coronavirus disease 2019
HCW	Healthcare Workers
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
WHO	World Health Organization

ACKNOWLEDGEMENT

We would like to extend our deepest gratitude and praise to the Almighty God for providing us with strength and knowledge for this study.

Our deepest appreciation also goes to our supervisor for her constructive criticisms, objective guidance, and direction for the study and the entire staff of the College for their support throughout the study.

We are grateful to all the respondents for their contributions and efforts. Without them, the study would not be possible.

Finally, our sincere appreciation goes to the authors and publishers of pieces of literature used in the study. Thank you all and God bless you.

CHAPTER ONE

INTRODUCTION

1.0 Background to the study

Coronavirus disease (COVID-19) is an infectious disease caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Deng & Peng, 2020). COVID-19 is a new strain from a family of coronavirus, first isolated in January 2020 (Li, Zhang, & Hu, 2020). The virus has rapidly disseminated all over the world with high mortality and morbidity (World Health Organization, 2020). The corona virus is a disease that was first tested in China specifically in Wuhan city in the year 2019 around 31st December. The pandemic has affected every sector of human life including religious activities, funerals, businesses, education, public healthcare systems, and sociocultural events (World Bank, 2020). COVID-19 is transmitted from person to person through small droplets from the nose or mouth, which are expelled when a person with COVID-19 coughs, sneezes, or speaks and also via contact with fomites (WHO, 2020). The WHO declared COVID-19 to be a public health emergency of international concern on 30th January 2020. The mortality rate was found to be 3.9% according to the data at that time (WHO, 2020).

The global impact of Covid-19 is multifaceted and is clearly manifested in almost all sectors, particularly the health, economic and education sectors. Since the announcement of the virus as a pandemic in March 2020, there have been a plethora of daily reports on its impact on the lives of millions across the world. According to WHO (2021) globally, as of 3:24pm CEST, 29th May 2021, there have been 169,118,995 confirmed cases of COVID-19, including 3,519,175 deaths, reported to WHO. As of 27th May 2021, a total of 1,546,316,352 vaccine doses have been administered. In Ghana, from 3rd January 2020 to 3:24pm Central European Summer Time

(CEST), 29th May 2021, there have been 93,775 confirmed cases of COVID-19 with 784 deaths, reported to WHO. As of 26th May 2021, a total of 847,871 vaccine doses have been administered.

Globally, little evidence exists on transmission patterns of COVID-19 (Bonful, et al., 2020). The transmission of COVID-19 is thought to happen mostly through respiratory droplets. During individual coughs, sneezes, or talks the virus released within the respiratory secretions can infect another person if it makes direct contact with the mucous membranes. Another mode of viral transmission is when a person touches a contaminated surface with the virus and then touches his or her nose, mouth, and eyes. The time between exposure to COVID-19 and onset of the symptom for COVID-19 is supposed to be in 14 days, with most cases happening approximately five to six days after exposure (Chang, Yuan, & Kok, 2020).

COVID-19 is one of the top reasons for cardiovascular disease, which can cause myocarditis, heart failure, pericarditis, and cardiac conduction defects (Vuorio, Watts, & Kovanen, 2020). Furthermore, in patients with a history of cardiovascular diseases, COVID19 can cause a change in the progress of the underlying disease and rising mortality (Guo, Fan, & Chen, 2020). Increase in blood glucose levels can lead to the destruction of immune systems of individuals and results in a decrease in the abilities to fight different types of infections, such as COVID-19; accordingly, the virus can cause more abnormalities to the body (Ma & Holt, 2020). The study conducted in China revealed that patients with cardiovascular disease have a high risk of severe COVID-19 infection. A large observational report, which was conducted on 1099 patients with COVID-19 showed that patients with severe disease were with co-morbidities of hypertension (23.7%) and diabetes mellitus (16.2%) (Guan, Ni, & Hu, 2020). Accordingly, every country's primary concern has become to diminish the spread of the virus and alleviate its effects on the society in general, and the most vulnerable communities in particular (Osman, 2020). To minimize the risk of

transmission of coronavirus, communities are required to follow accepted infection control practices such as frequent hand washing using soap, hand rubbing with an alcohol-based sanitizer, social distancing, awareness of the symptom frequently, wearing the mask in the community, and practicing respiratory hygiene (Ghosh, Arora, Gupta, Anoop, & Misra, 2020).

Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the COVID-19 virus (WHO, 2020). According to WHO, hand washing is a general term referring to any action of hand cleansing.

However, hand washing is best defined as the act of cleaning one's hands with soap and water to remove viruses, bacteria's, microorganisms, dirt, grease, or other harmful and unwanted substances stuck to the hands. Drying of the washed hands is part of the process as wet and moist hands are more easily recontaminated (Huang, Ma, & Stack, 2018). The WHO (2020) recommends washing hands for at least 20 seconds. Hand hygiene, including hand washing with soap and water, or the use of hand sanitizers, has been shown to reduce transmission of infectious diseases (Azor-Martínez, et al., 2017), especially respiratory tract infections (Osman, 2020), yet the promotion of hand hygiene behavior is a complex issue (Stone, Teare, & Cookson, 2018).

Hand hygiene is a very simple and lifesaving procedure. The average compliance among Healthcare Workers (HCWs) still remains low (Yousif, Tancred, & Abuzaid, 2020). Reasons for non-compliance with recommendations occur at individual, group, and institutional levels (Pittet, 2019). Individual factors such as social cognitive and psychological determinants (i.e., knowledge, attitude, intentions, beliefs, and perceptions) provide additional insight into hand hygiene behavior (Kretzer & Larson, 2019). Perceived barriers to adherence to hand hygiene practice recommendations include inaccessible hand hygiene supplies, forgetfulness, lack of knowledge of guidelines, insufficient time for hand hygiene (Ojong, 2016). Despite considerable efforts,

compliance with hand hygiene as a simple infection-control measure remains low and hygiene is suboptimal in both community and healthcare settings in African countries (Pengpid & Peltzer, 2020) hence the more reason why this research is been conducted to find out the awareness on handwashing among final year students of Holy Family Nursing and Midwifery Training College, Berekum during COVID-19 pandemic.

1.1 Problem statement

The World Health Organization (WHO) declared COVID-19 to be a public health emergency of international concern on 30th January 2020. The mortality rate was found to be 3.9% according to the data at that time (WHO, 2020). As COVID-19 can spread through contact with contaminated surfaces, hand hygiene remains a fundamental control and prevention measure and is strongly recommended to curb its transmission, especially in the absence of a clinically approved vaccine or antiviral prophylaxis (WHO, 2020). China reported the Novel Coronavirus at the end of the year 2019 which was, later on, declared a Pandemic by the WHO. Proper hand hygiene was identified as one of the simplest most cost-effective Covid-19 control and prevention measures (Nuwagaba, et al., 2020).

The COVID-19 outbreak has overly emphasized the importance of handwashing with soap to reduce the spread of the virus. The Global Handwashing Day celebrated on 15th October, was founded by the Global Handwashing partners and is an opportunity to design creative ways to encourage people to wash their hands with soap at critical times. The theme for this year's celebration is "Hand Hygiene for All" and in light of the COVID-19 pandemic reinforces the importance of handwashing with soap as a sure way of preventing infection from other infectious diseases such as Lassa fever, Cholera, common cold, some foodborne diseases and several gastrointestinal disorders, such as norovirus (WHO, 2020). Although there are several evidenced-

based recommendations to promote compliance with hand washing and numerous evidences of the advantages of performing hand washing, inadequate levels of compliance with handwashing among healthcare professionals continue to be reported repeatedly (CDC, 2019).

There is ample evidence, however, that many years before the epidemic handwashing among healthcare workers (HCW) remained an area that needed improvement (CDC, 2019). Proper hand hygiene was identified as one of the simplest most cost-effective Covid-19 control and prevention measures. It is therefore very important to understand the compliance of the healthcare workers to hand hygiene (Nuwagaba et al., 2020). A study in Kintampo found that students had low awareness regarding hand hygiene in the prevention of infections in spite of them been taken through the need to observe hand washing with soap at critical times, the importance of hand washing, the steps in hand washing and practical demonstration of hand washing (Dajaan et al., 2018).

A recent study in HFNMTC, Berekum found that students had adequate knowledge on hand hygiene yet the study recommended that frequent hand hygiene training should be carried out to ensure students are adequately informed on the benefits of hand hygiene (Amedor & Akotey, 2021). Given this, it is important to investigate the awareness on handwashing third year student nurses of Holy Family Nursing and Midwifery Training College, Berekum during COVID-19 pandemic.

1.2 General objective of the study

The main objective is to find out the awareness on handwashing among third year student nurses of Holy Family Nursing and Midwifery Training College, Berekum during COVID-19 pandemic.

1.4 Specific Objective

1. To determine the knowledge of handwashing among third year student nurses of HFNMTC, Berekum amid COVID 19.
2. To determine the practice of handwashing among third year student nurses of HFNMTC, Berekum amid COVID 19.
3. To find out the barriers to hand washing among third year student nurses of HFNMTC, Berekum amid COVID 19.

1.4 Operational Definitions

Knowledge: defined as having adequate understanding about hand washing.

Barriers: factors that prevents first year trainees from washing their hands

Frequency: refers to the number of times something is done

Practice: defined as an act of performing given procedure (s) according to a set standard.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter contains review of relevant literature related to the research topic "awareness on handwashing among third year student nurses of Holy Family Nursing and Midwifery Training College, Berekum during COVID-19 pandemic". The sources of information include books, journals and online articles, research reports.

2.1 Overview

Hand washing is a simple, convenient, and cost-effective means to limit the transmission of communicable diseases. Improving the practice of hand washing is vital to decrease hygiene-related morbidity and mortality, particularly in developing countries (Ehsetu, Kifle, & Hirigo, 2020). Frequently and thoroughly washing hands with soap and water for at least 20 s or sterilizing hands with a 60% alcohol-based hand sanitizer, when soap and water are not available, can help prevent respiratory viral infections in settings where people are more likely to mix, contract, and spread infections (WHO, 2020). As COVID-19 can spread through contact with contaminated surfaces, hand hygiene remains a fundamental control and prevention measure and is strongly recommended to curb its transmission, especially in the absence of a clinically approved vaccine or antiviral prophylaxis (WHO, 2020).

2.2 Knowledge on Hand washing

Hand hygiene is regarded as the most effective means of preventing Healthcare Associated Infection (Andriana & Nadjib, 2018). Hand hygiene also important for patient safety because hands of health care personnel frequently serve as vectors for the transmission of organisms from

personnel hands to patient and are also a major reservoir for pathogens with antimicrobial resistance. For this reason, In 2005, the WHO World Alliance for Patient Safety launched a campaign, the First Global Patient Safety Challenge: Clean Care is Safer Care; aiming to improve hand hygiene in healthcare. However, despite the continuous efforts, healthcare professionals' compliance about hand hygiene guidance remains sub-optimal (Andriana & Nadjib, 2018). Hand hygiene competence is one of the critical outcomes in nursing education. Ensuring nursing students recognize the what, when and how of hand hygiene is critical in the light of the increasing rates of healthcare-associated infections (Labrague, Jimoh, & Balogun, 2017).

A phenomenological study was conducted by Labrague et al., (2017) in Southern Nigeria among student nurses at the clinical learning environment to determine their knowledge on hand washing. A purposive sampling method was employed to recruit 109 participants for the study. Findings revealed a low-to-moderate knowledge of hand hygiene among nursing students.

An exploratory study in Nigeria was conducted to assess the knowledge of nurses on hand hygiene at St. Catherine's Specialist Hospital, Abuja. A total of 200 respondents were recruited through probability based stratified sampling. The findings showed that nurses' knowledge on hand-hygiene was moderate (84%) among the total study sample population. Again, 15% of the participants had poor knowledge and 1% had good knowledge (Mersha, et al., 2021).

In a quantitative cross-sectional study among 506 domestic visitors to the prophets Mosque in Al Madinah city by Mahdi et al., (2020), the researcher sought to find the hand hygiene knowledge, perception, and practices among domestic visitors to the prophet's Mosque. Findings revealed that a quarter (24.5%) of the participants had a poor knowledge on hand hygiene. Nearly three-quarters (74.3%) had a medium knowledge, and a small proportion (1.3%) had a high knowledge level on hand hygiene.

As a study conducted to examine the hand hygiene knowledge, beliefs, and practices of Italian nursing and medical students with the aim of informing undergraduate curricula, a questionnaire was administered to convenience sample of 117 nursing and 119 medical students in a large university in Rome, Italy. The result of the study showed that nursing students' hand hygiene knowledge, compliance and self-reported hand hygiene practices were significantly higher than those of medical students (Van De Mortel, Kermode, Progano, & Sansoni, 2018).

Yousif et al. (2020), conducted a cross-sectional study on nurses and doctors working in Rabit University Hospital, Sudan. A total sample size of 237 including 138 nurses and 99 doctors was used. The study assessed the knowledge of healthcare workers on hand hygiene. The results of the study showed that 35.6% of the respondents demonstrated sufficient knowledge on hand hygiene. The study concluded that insufficient knowledge of nurses and doctors may be why the coronavirus infections in the hospital are high.

A cross sectional study was conducted in Navodaya Medical College (NMC), one of the biggest teaching hospitals in Raichur, India. A sample size of 144 nursing students was used. The aim was to assess the nursing student's knowledge on hand washing using WHO hand hygiene questionnaire. The results showed that knowledge on hand hygiene was moderate (107 out of 144, 74%) among the total study population. Only 9% of participants (13 out of 144) had good knowledge regarding hand hygiene. The study showed the importance of improving the current training programs targeting hand hygiene practices among nursing students (Nair, et al., 2016).

A cross sectional study was conducted to determine the student nurses' knowledge and perceptions on hand hygiene in the Asir region, Kingdom of Saudi Arabia. The World Health Organization Knowledge and Perception Questionnaire for Health-care Workers were administered to collect the information. A total of 243 student nurses from six hospitals in the region were sampled for

the study. The results showed that about 51.85% of the student nurses demonstrated a good level of knowledge about hand hygiene and 50.2% of student nurses had a negative perception of hand hygiene. The study concluded that educational interventions should be undertaken to enhance the knowledge of student nurses and to promote positive perceptions of hand hygiene among student nurses (Al-Mohaithef, Chandramohan, Hazazi, & Elsayed, 2020).

A study done in General Hospital Ikot Ekpene, Akwa Ibom State, Nigeria, revealed that 82.4% of respondents had good knowledge of hand washing and 17.6% had poor knowledge. Observations on the practice of hand washing revealed that 42.2% of respondents always practiced hand washing and 34.3% practiced occasionally, while 23.5% never practiced hand washing (Ojong, 2016).

2.3 Practice of Hand Washing

A cross-sectional study was conducted on nurses and doctors working in Rabit University Hospital, Sudan. A total sample size of 237 including 138 nurses and 99 doctors was used. The study found out that good hand hygiene practices were found in only 18.1% of healthcare workers. The study added that most healthcare workers believed that notice boards reminded them to carry out hand hygiene (Yousif, et al., 2020). In an observational study conducted among nursing and midwifery students at Korle-Bu teaching Hospital in Ghana, a hand washing compliance rate ranging from 9.2% to 57% among nursing students and 9.6% to 54% among student midwives was reported (Yawson & Hesse, 2018).

A cross-sectional study on community dwelling participants using a proportionate random sample from all Lebanese governorates (Beirut, Mount Lebanon, North, South and Bekaa). In all two thousand two hundred and eighty-nine participants were enrolled in the study. Data analysis was conducted using SPSS software version 23. The results of the study showed individuals that hand hygiene compliance still remains challenging despite the numerous guidelines that has been

published. Factors from the health workers such as skin-irritating soap, hard soap, lack of awareness of the importance of hand hygiene, forgetfulness and heavy workload has been attributed to health workers lack of compliance reason. In addition, health workers only wash their hands only when it necessary, not always when hands are more likely to be heavily contaminated and the technique still remain poor (Andriana & Nadjib, 2018).

Khaled et al., (2016) conducted a cross sectional descriptive and observational study to assess the knowledge, attitude, and practices of hand washing among health care workers (HCW) in Ain-Shams University hospitals and to assess its different wards for facilities required for hand washing (HWs). The result of the study was that Doctors showed a significantly higher compliance (37.5%) observational than other groups of HCW, however only 11.6% of them had done the hand washing in an appropriate way. The most common type of hand hygiene practiced among HCW was the routine hand washing (64.2%) and the least was the antiseptic hand washing (3.9%). Having a short contact time and improper drying (23.2%) was the most common form of inappropriate hand washing. Finally, the authors concluded that compliance to hand washing was low.

Mahdi, et al., in 2020 conducted cross-sectional survey among domestic residents, who visited the mosque between 31 July and 3 August 2020. A self-administered electronic questionnaire was used. Four hundred participants aged 18–65 years completed the survey, of which 215 (53.8%) were female. The study reported a relatively poor hand hygiene practice after sneezing or coughing, with only 25.6% washing hands with soap and water and 12.6% using alcoholic hand sanitizer, as well as following handshakes (28% and 26.8%, respectively), and the largest proportion (27.6%) used a handkerchief following a sneeze, while previously, they washed hands with water and soap. Similarly, approximately 27% of the Saudi Arabian citizens did not wash their hands after nose-blowing, coughing, or sneezing amidst the COVID-19 pandemic.

A cross sectional descriptive study involving Umrah pilgrims conducted in 2019 showed that over 90% of pilgrims washed their hands with soap and water or sanitisers after coughing and sneezing, before eating or preparing food, and after using the bathroom (Tobaiqy, et al., 2020).

Asare et al., (2015) conducted a study to assess the hand hygiene practices in a neonatal intensive care unit in Ghana. Unobtrusive observation of patient contact, hand hygiene practices, and hand washing technique among nurses and physicians attending randomly selected newborns for five hours daily for two weeks. Compliance to hand hygiene recommendations before versus after patient contact was 15.4% versus 38.5% for physicians and 14.1% versus 9.9% for nurses. Compliance to recommended procedure occurred in only 12.2% of high-risk contacts and none of the low-risk contacts. Hand washing protocol was generally followed. Alcohol hand rub was always available but was not used for hand hygiene. The researcher concluded that hand hygiene practice of physicians and nurses was low.

An observational study was conducted in 15 healthcare facilities consisting of 2 district hospitals and 13 health centers in two districts (Kpandai and Tatale-Sanguli) in the Northern Region of Ghana. A pretest-posttest design was used. The study found that the best practice of hand washing was noted after blood fluid exposure (57.5%) and after touching patient (43.6%). The worst adherence to hand hygiene was before performing aseptic procedures (13.6%) and before touching patients (17.3%) (Larbi, et al., 2019).

A descriptive design was employed to conduct research on selected students from all the three schools which were Saint Monica's Senior High School, St. Joseph's Senior High School and Amaniampong Senior High School all in the Mampong Municipal Assembly in the Ashanti Region of Ghana. The stratified random sampling method was used for the study. The total sample size for the study was three hundred (300). The study indicated that 22.9% of the students said they

always washed their hands after visiting the restroom, 68.8% also said they sometimes washed their hands, and 6.2% said they had other periods for washing their hands. In addition, 2% of the students washed their hands once every day, 7.7% washed twice every day, 89.8% of the students washed their hands as many times as possible every day, and 0.4% did not washed their hands at all (Akwaah, Abankwa, & Siaw, 2019).

2.4 Barriers to hand washing

The COVID-19 pandemic serves as a sharp reminder that one of the most efficient measures to prevent virus spread is also one of the simplest: hand cleanliness. It not only keeps us from getting sick, but it also prevents the sickness from spreading to others. To defeat the virus today – and to be better prepared for future pandemics – universal hand hygiene access must become a reality for everyone, in all settings, particularly in health care facilities, schools, and crowded public areas. In order to minimize COVID-19 transmission, WHO recommends establishing universal access to hand hygiene and promoting hand hygiene practices (WHO, 2020).

A study was undertaken in Uganda through non-participant observations of healthcare worker hand washing practices, documentation of hand hygiene facilities and semi-structured interviews with clinical staff. For this study, hospitals were randomly allocated as hospital A and hospital B. Interviewees were given a random identifying number to maintain confidentiality. Ten observations were carried out in each site, ranging from 10 to 32 min, with an average of 13.4 min; 268 min of observation was recorded in total. Fifty-six different patient interactions were observed with 37 staff members (although some staff members were observed on more than one occasion). The study found that the staff did not perceive the lack of facilities to be a barrier to hand washing but reported forgetfulness, lack of time and a belief that they could predict when transmission might occur and therefore did not wash hands as often as recommended. The study concluded that

the lack of facilities, variable training and staff perceptions were observable barriers to effective hand hygiene (Mearkle, Houghton, Bwonya, & Lindfield, 2019).

A report by the World Health Organization states that hand and hygiene facilities are lacking even in places where they are most needed: nearly half of all schools do not have handwashing facilities with water and soap, affecting 900 million school age children. Forty-three per cent of health care settings do not have hand hygiene facilities at points of care where patients are treated (WHO, 2021).

A cross-sectional survey was conducted by Alemayehu (2018) on hand hygiene in Northern Ethiopia among 650 university students using a multistage sampling technique. The study reported that student nurses often fail to practice hand hygiene because they are busy and they feel hand hygiene take up precious time, they often perceive that gloves can be used as an alternative to hand hygiene. They usually tend to remove the gloves without washing their hand or use the same gloves to deliver intended care to multiple patients. Even when they remove their gloves, only 20% of them actually clean their hands while studies claim that student nurses are frightened that skin problems such as dermatitis could develop, especially with alcohol hand-rubs.

A phenomenological study was conducted using semi-structured interview guide among 16 key informants in Southern Ethiopia. Key informants were recruited by the purposive sampling method. It was found that the main factor that affects the health care providers' practice of preventive measures such as hand washing for the COVID-19 pandemic were lack of awareness of the community, negligence, ignorance and misconception about the disease. Some of the study participants highlighted that lack of communication, support from the community and government, and lack of attention and recognition for staff were factors that influence the practice of

precautionary measures for the COVID-19 pandemic in the health care facility (Mersha, et al., 2021).

A cross sectional descriptive study was conducted in Mumbai, India. A semi-structured pre-validated questionnaire was used. A simple random sampling was used to select 420 school children. The study found that common barriers to hand hygiene compliance included time constraints, high patient volumes, lack of soap and paper towels, forgetfulness, lack or absence of positive role models (Priyanka et al., 2020).

CHAPTER THREE

MATERIALS AND METHODS

3.0 Introduction

This chapter provides, the research area and research population, research design, sampling techniques, data collection method and instrument, data analysis techniques, ethical consideration, research limitation.

3.1 Study area

The study will be carried out at the Holy Family Nursing and Midwifery Training College, Berekum. The school shares boundary with the Holy Family Hospital, Berekum and Freeman Methodist School. The school was established in the year 1957. The College community is located at the premises of Holy Family Hospital, Berekum with a student population of six hundred and eighty-eight. The college community consists of a number of Registered General Nursing, Post basic students and Registered Midwifery trainees. The college runs three Diploma programs; Registered General Nursing (RGN) Diploma, Registered Midwifery (RM) Diploma and a two-year Post Basic Midwifery (NAP/NAC). The college authorities have made provision for several veronica buckets at various vantage points on campus to aid in hand washing. Lectures takes place from Monday to Friday and it starts from 8:00am to 4:00pm. There are numerous facilities, found in the school. Some of them are, lecture halls, Anatomy/Pathology Museum, Library, Computer laboratory, Skills lab, Supermarket, dining hall and kitchen, and Security posts.

3.2 The study population

The college has a student population of six hundred and eighty-eight. Third years are one hundred and eighty-three. The third year student nurses and midwives of Holy Family Nursing and Midwifery Training College, Berekum were the target population for the study.

3.3 Study design

A descriptive study design was used for the study. The design was adopted because participants or subjects were observed in their natural. The data collection in descriptive research allows for gathering in-depth information. Descriptive research may be a precursor to future research because it can be helpful identifying variable that can be tested.

3.4 Sampling technique and Size

Convenience sampling technique is a type of nonprobability sampling which involves the sample being drawn from that part of the population which is close to hand and readily available to take part in the study. This method was chosen because is it extremely speedy, easy, readily available and cost-effective sampling method.

The Yomane formula was used to calculate the sample size for the study. It is written as

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

n is the sample size, N is the population size and e is the level of precision (0.05)

$$n = \frac{183}{1+ 183(0.05)^2}$$

$$n= \frac{183}{1+183\ (0.0025)}$$

$n = \frac{183}{1.4575}$

n = 125.6

Therefore, the sample size for the study will be 126 students.

3.5 Data collection methods and instruments

Data collection was done through the use of structured and semi structured questionnaires consisting of both closed ended and open-ended questions for easy expression of views and ideas. This was chosen because of the ability to cover a large number of people, relatively cheaper with no user bias. The questionnaire was made web based related. Selected respondents were sent a WhatsApp link to answer the questionnaire.

3.6 Data analysis techniques

Data will be analyzed using Microsoft excel and will be presented in percentages, tables and bar charts.

3.7 Ethical consideration

An introductory letter was obtained from the administration of Holy Family Nursing and Midwifery Training College, Berekum. The respondents were well informed about the purpose of the study. The right of each respondent was respected and their personnel integrity safe-guarded. The respondents were allowed to participate and withdraw from the study if and when they felt like. The study was also carried out with no physical or psychological harm on the respondents. Since matters of stress are very sensitive but neglected on the part of the individual and the college as a whole, anonymity was ensured and none of the respondent's answers were discussed with other people in order to ensure confidentiality and also the questions were tactfully asked.

3.8 Limitation of the study

These are sectors inherent with the study that might affect the result which must be recognized and acknowledged. The period which was allowed for the research coincided with lectures which reduced the concentration to the work. Limited resource, especially financial constraints since no sponsorship was obtained also accounted for the selection of half the population as our sample size.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

This chapter deals with analysis of data collected from the field of study and the results obtained from the analysis. The study findings are presented in tables and figures based on the demographic characteristics and specific objectives.

4.1 Demographic Data of Respondent

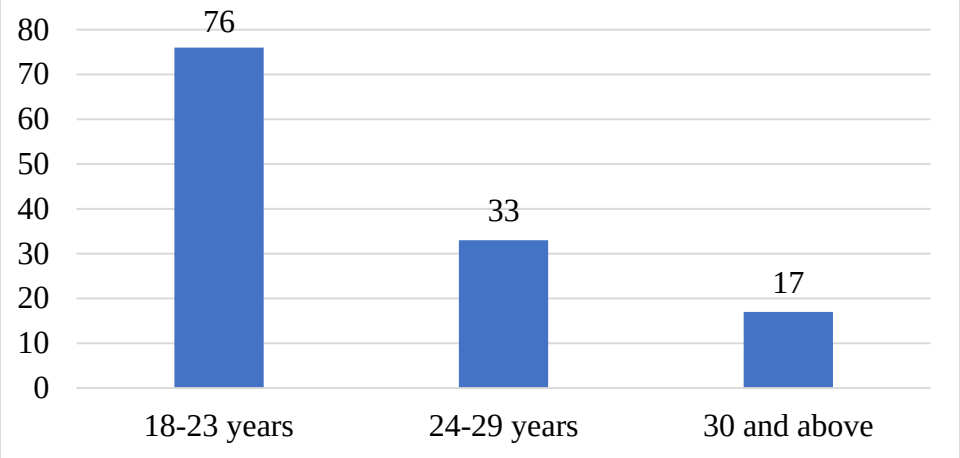

Figure 4. 1: Respondents Age

Figure 1 depicts that majority (60%) of the respondents were aged 18-23 years followed by 24-29 years (26%) and 30 years and above (14%).

Table 4. 1: Respondents Marital Status

Variable	Frequency	Percentage
Married	5	4
Single	121	96
Divorced	0	0

Table 4.1 shows that almost all (96%) the respondents were single with only (4%) of them who were married.

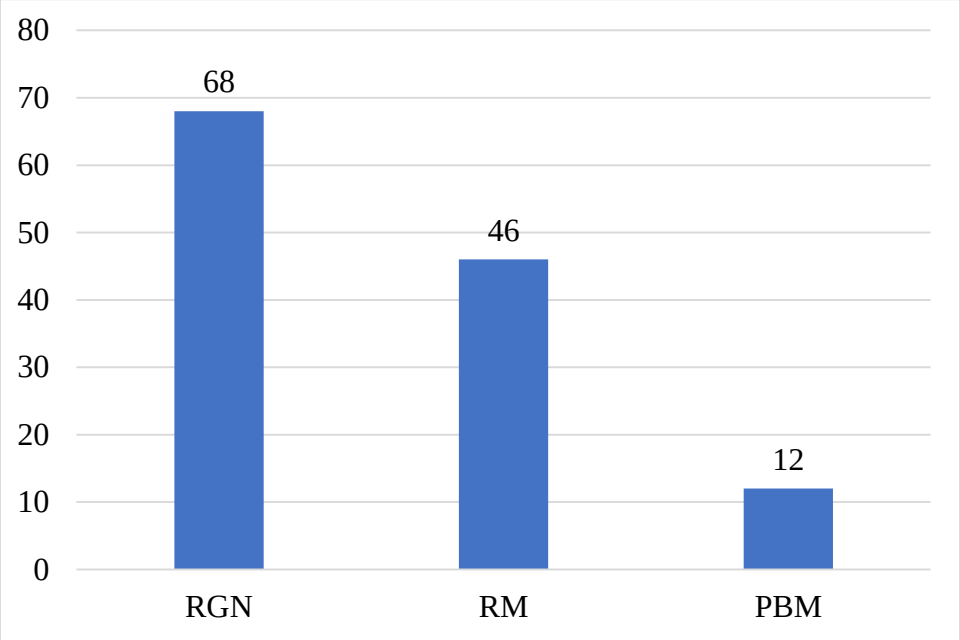

Figure 4. 2: Program of Study

As shown in figure 4.2 most (54%) of the respondents were registred general nursing students followed by reistered midwifery students (36%) and post baisc midwifery students (10%).

Table 4. 2: Respondents Religion

Variable	Frequency	Percentage
Christianity	114	90
Islam	12	10
Other	0	0

As shown in table 4.2 majority (90%) of the respondents belonged to the Christian religion and the remaining 10% belonged to the Islamic religion.

4.2 Knowledge on Hand Washing

Table 4. 3: Respondents knowledge on hand washing

Statement		Yes	No
Handwashing prevents the direct transfer of infectious pathogens	n	121	5
	%	96	4
One way of reducing COVID 19 transmission is to promote good hand hygiene practices	n	114	12
	%	90	10
The target of proper hand washing is to break the infection chain	n	118	8
	%	94	6
Effective method of preventing Healthcare-Associated Infection is considered to be hand cleanliness	n	126	0
	%	100	0
Maintenance of good hand hygiene is essential for patient safety	n	119	9

	%	93	7
Bar soaps can be used in a healthcare setting for handwashing	n	29	97
	%	23	77
Improper hand hygiene is an important contributing factor to contracting infectious diseases	n	122	4
	%	97	3

Table 4.3 depicts the knowledge of respondents on hand washing and COVID 19 prevention. Vast majority (96%) of the respondents said handwashing preventing the direct transfer of infectious pathogens. Majority (90%) of the respondents indicated that one way of reducing COVID 19 transmission is to promote good hand hygiene practices. Vast majority (94%) of the respondents were of the view that the target of proper hand washing is to break the infection chain. All (100%) the respondents mentioned that effective method of preventing Healthcare-Associated Infection is considered to be hand cleanliness. Most (77%) of the respondents opposed the idea that bar soaps can be used in a healthcare setting for handwashing. Almost all (97%) the respondents mentioned that improper hand hygiene is an important contributing factor to contracting infectious diseases.

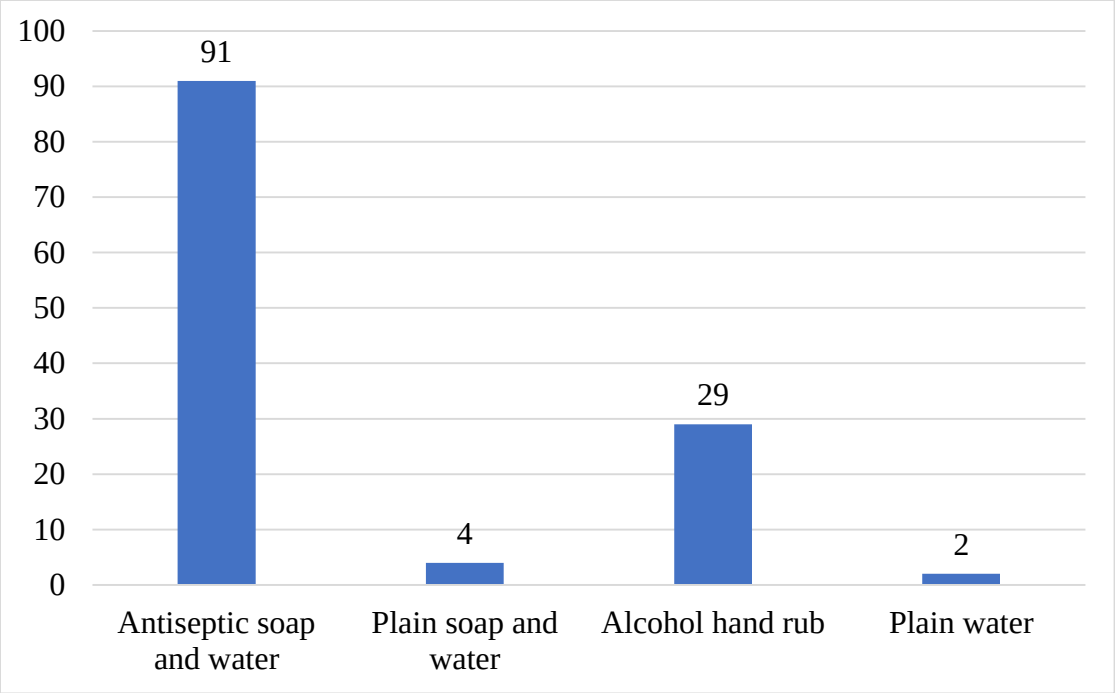

Figure 4. 3: Respondents on Most Effective Hand Hygiene Method

As illustrated in figure 4.3 most (72%) of the respondents indicated antiseptic/antibacterial soap and water as the most effective method of hand hygiene followed by alcohol hand rub (23%), plain soap and water (3%) and plain water (2%).

4.3 Handwashing Practice

Table 4. 4: Respondents practice of handwashing

Variable	Categories	Frequency	Percentage
What or who reminds you to practice hand hygiene?	Television	9	7
	Notice board	76	60
	Pictures	23	18
	Friends	2	2
	On my own	16	13
How many times do you perform handwashing in a day?	Once	3	2
	Twice	18	14
	Thrice	27	22
	More than 3 times	78	62
	None	0	0
How would you rate your overall compliance with handwashing?	Low	8	6
	Moderate	98	78
	High	20	16

As shown in table 4.4, most (60%) of the respondents were reminded by notice boards to wash their hands followed by those who were reminded by pictures (18%), on their own (13%) and friends (2%).

Table 4. 5: Respondents on Instances Hand Washing is Performed

Statement		**Always**	**Sometimes**	**Never**
After visiting the washroom	n	115	11	0
	%	91	9	0
After handshakes	n	23	75	28
	%	18	60	22
After sneezing	n	23	95	8
	%	18	76	6

Almost all (91%) the respondents said they always perform hand washing after visiting the washroom. Most (60%) of the respondents indicated they sometimes practice handwashing after handshakes. Majority (76%) of the respondents cited that hand washing is practiced after sneezing.

4.4 Barriers to Hand Washing

Table 4. 6: Respondents barriers to hand washing

Statement		**Agree**	**Disagree**
Limited access to soap and water	n	88	36
	%	71	29
Lack of time or time constraints	n	80	46
	%	63	37
Forgetfulness	n	112	14
	%	89	11
Misconception about the disease	n	85	41
	%	67	33
Have move important things to do than do hand hygiene	n	100	26
	%	79	21

Majority (89%) of respondents indicated forgetfulness as a barrier to handwashing followed by having more important task to perform than to do hand hygiene (79%), limited access to soap and water (63%), misconception about the disease (67%) and lack of time or time constraints (63%).

CHAPTER FIVE

DISCUSSION OF THE RESULTS

5.0 Introduction

This chapter include a brief discussion on the research process. It again focuses on the conclusions and recommendations made as a result of the study findings.

5.1 Discussions

5.1.1 Knowledge on Hand Washing

The current study found that most (72%) of the respondents indicated antiseptic/antibacterial soap and water as the most effective method of hand hygiene. Similarly, Mahdi et al. (2020) found that most participants 65.8% believed cleansing hands with antiseptic/antibacterial soap and water is a very effective hand hygiene method.

In the present study vast majority (96%) of the respondents said handwashing preventing the direct transfer of infectious pathogens and (94%) of the respondents were of the view that the target of proper hand washing is to break the infection chain. These findings are in line with a study conducted by Andriani and Najib (2018) in which they affirmed that the main aim of hand hygiene is to remove dirt, limit the microbial counts on the hand, prevent cross-transmission of pathogens and more importantly break the chain of infection. This is similar to a study by Katjavivi and Otaala (2017) which reported that handwashing prevents the direct transfer of infectious pathogens on the hands from reaching a portal of entry and the indirect transfer through food preparation and fomite transmission pathways.

Majority (90%) of the respondents indicated that one way of reducing COVID 19 transmission is to promote good hand hygiene practices and all (100%) the respondents mentioned that effective

method of preventing Healthcare-Associated Infection is considered to be hand cleanliness. Similarly, WHO (2020) reported that as COVID-19 can spread through contact with contaminated surfaces, hand hygiene remains a fundamental control and prevention measure and is strongly recommended to curb its transmission, especially in the absence of a clinically approved vaccine or antiviral prophylaxis. Again, Dwipayanti et al. (2021) added that 61.3% of respondents perceived handwashing as an effective measure to prevent COVID-19 and other diseases.

5.1.2 Handwashing Practice

In the current study most (60%) of the respondents were reminded by notice boards to wash their hands followed by those who were reminded by pictures (18%), on their own (13%) and friends (2%). Similarly, Yousif et al. (2020) found that most healthcare workers believed that notice boards reminded them to carry out hand hygiene.

The present study found that almost all (91%) the respondents said they always perform hand washing after visiting the washroom. Most (60%) of the respondents indicated they sometimes practice handwashing after handshakes. Majority (76%) of the respondents cited that hand washing is practiced after sneezing. Contrary, Mahdi, et al., in 2020 in their study reported a relatively poor hand hygiene practice after sneezing or coughing, with only 25.6% washing hands with soap and water and 12.6% using alcoholic hand sanitizer, as well as following handshakes (28% and 26.8%, respectively).

5.1.3 Barriers to Hand Washing

The present study found that majority (89%) of respondents indicated forgetfulness as a barrier to handwashing followed by having more important task to perform than to do hand hygiene (79%), limited access to soap and water (63%), misconception about the disease (67%) and lack of time or time constraints (63%). These findings are partly in line with a study conducted by Mearkle et al.

(2019) which found that forgetfulness, lack of time and a belief that they could predict when transmission might occur were barriers to hand washing. Similarly, the current findings corroborate with what Mersha et al. (2021) reported, that one of the main factors that affects the health care providers' practice of preventive measures such as hand washing for the COVID-19 pandemic was miss conception about the disease. Additionally, Priyanka et al. (2020) reported that common barriers to hand hygiene compliance included time constraints, high patient volumes, lack of soap and paper towels and forgetfulness.

5.2 Conclusions

The study revealed adequate knowledge on handwashing among nursing and midwifery trainees. The most effective hand hygiene method was handwashing with antiseptic/antibacterial soap and water. The major barrier to handwashing was forgetfulness as reported by majority of respondents. Respondents had good hand hygiene practice after visiting the washroom.

5.3 Recommendations

Based on the findings of the study, the following recommendations are made.

1. Frequent hand hygiene training should be carried out to ensure students are adequately informed on the benefits of hand hygiene.
2. It is also recommended that hospitals and institutions avoid the use of bar soaps in hand hygiene since they do not have antiseptic solutions and can harbor bacteria.
3. All people who hold administrative positions in hospitals or schools should take the necessary measures to properly observe and implement the guidelines for hand hygiene.

REFERENCES

Addis, Z., Yalew, A., Shiferaw, Y., Alemu, A., Birhan, W., Mathewose, B., & Tachebele, B. (2016, August 2). Knowledge, attitude and practice towards voluntary counseling. *BMC Public Health, 13*(714).

Akwaah, V., Abankwa, A., & Siaw, W. N. (2019). Perception of students on hand washing practices in selected senior high schools in Mampong Municipality, Ghana. *European Journal of Education Studies, 6*(2), 275-286. doi:10.5281/zenodo.3168657

Alabi, L. Y., Jimoh, A. A., & Balogun, R. O. (2020). Factors in the rate of acceptance of hand hygiene in Nigeria. *Research Journal of Medical Science, 4*(3), 152-156.

Alefragkis, D., & Kelesi, M. (2019). The importance of hand hygiene in health care settings. *International Journal of Midwifery and Nursing Practice, 2*(1), 102-105.

Alemayehu, B. (2018). Knowledge, Attitude, and Practice of hand washing among University Students, Tigray, Northern Ethiopia. *College of Health Sciences, 2*(1), 108-118.

Alzyood, M., Debra, J., Aveyard, H., & Brooke, J. (2020). COVID-19 reinforces the importance of handwashing. *Journal of Clinical Nursing*, 1-2. doi:DOI:10.1111/jocn.15313

Amedor, B., & Akotey, F. (2021). Barriers and facilitators of handwashing in the prevention of covid 19 among first year trainees at holy family nursing and midwifery training college, berekum.

Andriana, Y., & Nadjib, M. (2018). The importance of implementation of hand hygiene practice in reducing healthcare-associated infections. *Knowledge and Engaging Minds Life Sciences*, 135-145.

Apeatu, J. O. (2019). *Attitude, perception and psycho-social barriers to hand washing.* Cape Coast: University of Cape Coast.

Azor-Martínez, E., Gonzalez-Jimenez, Y., Seijas-Vazquez, M. L., Cobos-Carrascosa, E., Santisteban-Martínez, J., & Martínez-López, J. M. (2017). The impact of common infections on school absenteeism during an academic year. *Am J Infect Control, 42*(6), 632-637.

Bonful, H. A., Addo-Lartey, A., Aheto, J. M., Ganle, J. K., Sarfo, B., & Aryeetey, R. (2020). Limiting spread of COVID-19 in Ghana:Compliance audit of selected transportation stations in the Greater Accra region of Ghana. *PLoS ONE, 15*(9), 1-13. doi:doi.org/10.1371/journal.pone.0238971

CDC. (2019). *Healthcare associated infections.* Center for Disease and Prevention.

CDC. (2020). *When and how to wash your hands.* Center for Disease and Prevention.

Chang, J.-W., Yuan, S., & Kok, K.-H. (2020). A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *395*(10223), 514-523.

Collins, A. S. (2018). Preventing HAI's. *Patient Safety and Quality, 2*, 547-575.

Curtis, V., Schmidt, W., Luby, S., Florez, R., Toure, O., & Biran, A. (2018). Hygiene: new hopes, new horizons. *11*(4), 312-321.

Dajaan, D., Addo, H. O., Ojo, L., Amegah, K., Fiagbe, L., & Banewel, D. (2018). Hand washing knowledge and practices among public primary schools in the Kintampo Municipality of Ghana. *International Journal of Community Medicine and Public Health*, 2205.

Deng, S. Q., & Peng, H. J. (2020). Characteristics of and public health responses to the coronavirus disease 2019 outbreak in China. *J Clin Med, 9*(2), 575.

Dwipayanti, N. M., Lubis, S. D., & Harjana, N. P. (2021). Public perception and hand hygiene behaviour during COVID-19 pandemic in Indonesia. *Frontiers in Public Health*, 225-246. doi:10.3389/fpubh.2021.621800

Ehsetu, D., Kifle, T., & Hirigo, A. T. (2020). Knowledge, attitudes, and practices of hand washing among Aderash primary schoolchildren in Yirgalem town, Southern Ethiopia. *Journal of Multidisciplinary Healthcare* , 759-768.

Ergin, A., Bostanci, M., Onal, O., & Bozkurt, A. (2019). Evaluation of students' social hand washing knowledge, practices, and skills in a university setting. *Central European journal of public health*, 222-227.

Ghosh, A., Arora, B., Gupta, R., Anoop, S., & Misra, A. (2020). Effects of nationwide lockdown during COVID-19 epidemic on lifestyle and other medical issues of patients with type 2 diabetes in north India. *Diabetes Metab Syndrome, 14*(5), 917-920.

Guan, W.-J., Ni, Z.-Y., & Hu, Y. (2020). Clinical characteristics of coronavirus disease 2019 in China. *N Eng J Medicine, 382*(18), 1708-1720.

Gumbo, A., Sibiya, J., & Jabulani, R. (2017). Knowledge, attitude and practices (KAP) survey on water, sanitation and hygiene in selected schools in Vhembe District, Limpopo, South Africa. *International Journal of Environmental Research and Public Health*, 2282-2295.

Guo, T., Fan, Y., & Chen, M. (2020). Cardiovascular implications of fatal outcomes of patients with coronavirus disease 2019 (COVID-19). *Cardiology, 5*(7), 811.

Huang, C., Ma, W., & Stack, S. (2018). The hygienic efficacy of different hand-drying methods: a review of the evidence. *Mayo Clinic Proceedings, 87*(8), 791-798.

Katibi, H. A., & Adegoke, A. A. (2016). Hand hygiene practices among youths in Nigerian institutions of higher learning. *Centrepoint Journal, 15*(1), 25-38.

Katjavivi, P. H., & Otaala, B. (2017). *African higher education respondeing to the HIV/AIDS pandemic. Paper presented at the AAU Conference of Rectors, Vice Chancellors and Presidents of African Universities (COREVIP).* Mauritius.

Kretzer, E. K., & Larson, E. L. (2019). Behavioral interventions to improve infection control practices. *Journal of Infection Control, 26*(3), 245-253.

Labrague, L. A., Jimoh, A. A., & Balogun, R. O. (2017). Healthcare associated infections and hand washing. *Journal of Social Health, 14*(3), 1259-1264.

Labrague, L. J., McEnroe-Petitte, D. M., Van De Mortel, T., & Nasirudeen, A. M. (2017). A systematic review on hand hygiene knowledge and compliance in student nurses. *International Nursing Review, 00,* 000-000.

Larbi, A.-K., Obeng-Nkrumah, N., Nartey, B. D., Issahaku, S., Ndiaye, N. F., Baffoe, P., . . . Enweronu-Laryea, C. (2019). Hand hygiene practices and perceptions among healthcare workers in Ghana: A WASH intervention study. *J Infect Dev Ctries, 13*(12), 1076-1085. doi:10.3855/jidc.11045

Li, L., Zhang, W., & Hu, Y. (2020). Effect of convalescent plasma therapy on time to clinical improvement in patients with severe and life-threatening COVID-19. *Infection and Drug Resistance, 2*(415), 4203-4214.

Ma, R., & Holt, R. (2020). COVID-19 and diabetes. *Diabetic Medicine, 37*(5), 723-725.

Mahdi, H., Assaggaf, H., Alfelali, M., Ahmed, O., Alsafi, R., Shaban, R., . . . Rashid, H. (2020). Hand hygiene knowledge, perception, and practices among domestic visitors to the prophet's Mosque in Al Madinah City amid the COVID 19 pandemic. *International Journal of Environmental Research and Public Health, 18*, 673-684.

Majid, U. (2018). Research fundamentals: study design, population, and sample size. *URNCST Journal, 2*(1), 1-7. doi:https://doi.org/10.26685/urncst.16

Mearkle, R., Houghton, R., Bwonya, D., & Lindfield, R. (2019). Barriers to hand hygiene in ophthalmic outpatients in Uganda: a mixed methods approach. *Journal of Ophthalmic Inflammation and Infection, 6*(1), 1-6. doi:DOI:10.1186/s12348-016-0077-0

Mersha, A., Shibiru, S., Girma, M., Ayele, G., Bante, A., Kassa, M., . . . Shewangizaw, M. (2021). Perceived barriers to the practice of hand hygiene. *BMC Public Health*, 1-10.

Mersha, A., Shibiru, S., Girma, M., Ayele, G., Bante, A., Kassa, M., . . . Shewangizaw, M. (2021). Perceived barriers to the practice of preventive measures for COVID-19 pandemic among health professionals in public health facilities of the Gamo zone, southern Ethiopia: a phenomenological study. *BMC Public Health*, 1-10. doi:https://doi.org/10.1186/s12889-021-10256-3

Mishra, S. B., & Alok, S. (2019). *Handbook of research methodology.* New Delhi: Educreation Publishing.

Mukherjee, S. (2020). *Factors influencing access to basic handwashing facilities in developing countries.* New Delhi: Munich Personal RePEc Archive. Retrieved from https://mpra.ub.uni-muenchen.de/99607/

Nuwagaba, J., Ashok, D. D., Balizzakiwa, T., Kisengula, I., Nagaddya, E. J., & Rutayisire, M. (2020). The era of coronavirus; knowledge, attitude, practices and barriers to hand hygiene among Makerere university students and Katanga community residents. *Journal of Hygiene*, 1-12.

Ojong, I. N. (2016). Te practice of hand washing for the prevention of Nosocomial infections among nurses in general hospital Ikot Ekpene, Akwa Ibom State, Nigeria. *Advanced Applied Science Research, 6*(1), 97-101.

Osman, M. E. (2020). Global impact of COVID-19 on education systems: the emergency remote teaching at Sultan Qaboos University. *Journal of Education for Teaching, 46*(4), 463-471. doi:https://doi.org/10.1080/02607476.2020.1802583

Pengpid, S., & Peltzer, K. (2020). Hygiene behaviour and health attitudes in African countries. *Journal of Behaviour, 25*(2), 149-154.

Perkins, A. (2017, November). Hand hygiene. *Nursing Made Incredibly Easy!, 15*, 1-7.

Pignatelli, S., Simpore, J., Pietra, V., Ouodraogo, G., Conombo, G., Saleri, N., . . . Casrelli, F. (2019). Factors predicting the adherance to hand washing. *Journal of Tropical Medicine and International Health, 11*(3), 350-357.

Pittet, D. (2019). Compliance with hand disinfection and its impact on hospital-acquired infections. *J Hosp Infect*, 556-559.

Pratt, A. M. (2019). Hand hygiene. *Academy of Management Journal, 52*, 856-862.

Priyanka, P., Taware, S., Chatter, A., & Thakur, H. (2020). A cross sectional descriptive study of hand washing knowledge and practices among primary school children in Mumbai, Maharashtra, India. *International Journal of Community Medicine and Public Health*, 2952-2996.

Reeves, J. D., & Doms, W. R. (2018). Infectious diseases. *Journal of General Virology, 83*, 1253-1265.

RNspeak. (2018, may 23). The Importance of Nurses Compliance to Hand Hygiene. *RNspeak*.

Seimetz, E., Slekiene, J., Friedrich, M. N., & Mosler, H.-J. (2017). Identifying behavioural determinants for interventions to increase handwashing practices among primary school children in rural Burundi and urban Zimbabwe. *BMC Research Notes, 10*(280), 2599-2604. doi:10.1186/s13104-017-2599-4

Stone, S., Teare, L., & Cookson, B. (2018). Guiding hands of our teachers. *Hand-hygiene Liaison Group*, *4*(2), 479-480.

Tobaiqy, M., Alhasan, A. H., Shams, M. M., Amer, S. A., Mac, L. K., Alcattan, M. F., & Almudarra, S. S. (2020). Assessment of preventative measures practice among Umrah pilgrims in Saudi Arabia. *International Journal Environmental Research and ublic Health*, *18*, 257-259.

UNESCO. (2020). *COVID-19 educational disruption and response.* Geneva: UNESCO.

UNICEF. (2020). *Everything you need to know about washing your hands to protect against coronavirus.* UNICEF. Retrieved from https://www.unicef.org/coronavirus/everything-you-need-know-about-washing-your-hands-protect-against-coronavirus-covid-19

Vuorio, A., Watts, G. F., & Kovanen, P. T. (2020). Familial hypercholesterolaemia and COVID-19: triggering of increased sustained cardiovascular risk. *J Intern Med, 287*(6), 746-747.

WHO. (2020). *Hand hygiene at scale initiative: improving hand hygiene access and behaviour in health care facilities at the critical interface between WASH and infection prevention and contro.* Geneva: World Health Organization. Retrieved from https://www.who.int/infection-prevention/en/

WHO. (2020). *Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations.* Geneva: World Health Oganisation.

World Bank. (2020). *The Covid-19 pandemic: shocks to education and policy responses.* Washington, D.C: World Bank.

World Health Organization. (2020). *Coronavirus disease (COVID-19) pandemic.* Geneva: World Health Organization. Retrieved from https://www.who.int/emergencies/diseases/novel-coronavirus-2019

World Health Organization. (2021). *COVID-19 pandemic heightens the importance of hand hygiene.* Geneva: WHO.

Yawson, A. E., & Hesse, A. A. (2018). Hand hygiene practices and resources in a teaching hospital in Ghana. *The Journal of Infection in Developing Countries, 7*(4), 338-347.

Yousif, M., Tancred, T., & Abuzaid, M. (2020). A survey of knowledge, attitude and practices regarding hand hygiene among doctors and nurses in Rabit university hospital. *International Journal of Medical Reviews and Case Reports, 4*(2), 19-27.

APPENDICES

QUESTIONNAIRE

Dear Respondent,

We are students of the above institution researching the topic; awareness on handwashing among final year students of Holy Family Nursing and Midwifery Training College, Berekum During COVID-19 pandemic.

Kindly answer the under-listed questions by ticking (√**)** the appropriate box or writing in the space provided. Any information you provide is confidential. Your opinion is neither considered right nor wrong. You can choose to withdraw your participation at any time. It will take approximately 20 minutes to answer this questionnaire.

Thank you.

PLEASE TICK [√] THE APPROPRIATE BOX WHERE APPLICABLE

SECTION A: DEMOGRAPHIC DATA

1. Age: a. 18 – 23 years [] b. 24 – 29 years [] c. 30 years and above []
2. Marital status: a. Married [] b. Single [] c. Divorced []
3. Program: a. RGN [] b. RM []
4. Religion: a. Christianity [] b. Islam [] c. Other (specify): …….

SECTION B: KNOWLEDGE ON HANDWASHING

The following questions assess your knowledge on handwashing;

5. Handwashing prevents the direct transfer of infectious pathogens
    a. Yes []
    b. No []
6. One way of reducing COVID 19 transmission is to promote good hand hygiene practices

a. Yes []

b. No []

7. The target of proper handwashing is to break the infection chain of covid 19.

   a. Yes []

   b. No []

8. Effective method of preventing Healthcare-Associated Infection is considered to be hand hygiene.

   a. Yes []

   b. No []

9. Maintenance of good hand hygiene is essential for patient safety in preventing Covid 19.

   a. Yes []

   b. No []

10. Bar soaps can be used in a healthcare setting for handwashing

    a. Yes []

    b. No []

11. Improper hand hygiene is an important contributing factor to contracting infectious diseases like Covid 19.

    a. Yes []

    b. No []

12. Which of the following hand hygiene methods is most effective;

    a. Antiseptic/antibacterial soap and water []

    b. Plain soap and water []

    c. Alcohol-based hand rubs []

d. Plain water []

SECTION C: HANDWASHING PRACTICE

13. What or who reminds you to practice hand hygiene?

    a. Television []

    b. Notice board []

    c. Pictures []

    d. Friends []

    e. On my own []

14. How many times do you perform handwashing in a day?

    a. Once []

    b. Twice []

    c. Thrice []

    d. More than 3 times []

    e. None []

15. How would you rate your overall compliance with handwashing?

    a. Low []

    b. Moderate []

    c. High []

16. Indicate how often you wash your hands in the following instances;

    I. After visiting the washroom

    a. Always []

    b. Sometimes []

    c. Never []

II. After handshakes

a. Always []

b. Sometimes []

c. Never []

III. After sneezing

a. Always []

b. Sometimes []

c. Never []

SECTION D: BARRIERS TO HANDWASHING

17. Limited access to soap and water

    a. Agree []

    b. Disagree []

18. Lack of time or time constraints

    a. Agree []

    b. Disagree []

19. Forgetfulness

    a. Agree []

    b. Disagree []

20. Misconception about the disease

    a. Agree []

    b. Disagree []

21. Have move important things to do than do hand hygiene

    a. Agree []

    b. Disagree []

HEALTH SERVICE (DIOCESE OF SUNYANI)
HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE
BEREKUM

BANKERS:
Ghana Commercial Bank, Berekum
Agric Development Bank, Berekum
Fidelity Bank, Berekum

P. O. Box 21,
Berekum, B/A
Ghana, W/Africa
Tel. 0352222124
Fax: 0352222474

Our Ref. HFNMTC/GC/011/020723

Your Ref. .....

Date February 7, 2023

Antoinette Effum
Holy Family NMTC
Post Office Box 21
Berekum

Dear Ms. Effum

PERMISSION TO CONDUCT RESEARCH

With reference to your Memorandum dated January 30, 2023, I write to notify you that the students listed below have been granted permission to conduct their research in the College on the topic **'Attitude and Practice of Hand Hygiene among Third Year Student Nurses at HFNMTC, Berekum.'**

1. **Campion Limuub Collins**
2. **Boakye Samuel**

Thank you.

Yours sincerely

PRINCIPAL
HOLY FAMILY NURSING AND

Monica Nkrumah (FGCNM)
Principal

E-mail. nmtcberekum@yahoo.com, nmtcberekum@gmail.com