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DIPLOMA PROGRAMMES

KNOWLEDGE, ATTITUDE AND PRACTICES OF HAND HYGIENE AMONG STUDENTS OF HOLY FAMILY NMTC, BEREKUM

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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 nother person nor material which has been accepted for the award of diploma of the University, xcept where due acknowledgement has been made in the text.

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ABSTRACT

The study focused on the knowledge, attitude, and practice of handwashing among Nursing and Midwifery students at Holy Family NMTC, Berekum. A descriptive study design was used to collect in-depth information for the study. The sample population was obtained using a simple random sampling technique. A total of 50 students were sampled for the study. The data for the study was collected by administering the questionnaire to the participants.

The study found that the majority of respondents (54%) agreed that handwashing prevents the direct transfer of infectious pathogens. Eighty-six percent (86%) of the respondents mentioned that the most effective handwashing method is washing hands with antiseptic/antibacterial soap and water. The majority of the respondents (58%) agreed that hand hygiene kills viruses existing in our hands. The majority of the respondents (52%) rated their overall compliance with handwashing to be moderate.

The study recommended that student nurses need to be aware of the importance of hand hygiene and the negative effects that will be caused when it is not followed.

The study concluded that self-reported handwashing compliance was high and the majority of the respondents mentioned that the most effective handwashing method is washing hands with antiseptic/antibacterial soap and water.

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ABBREVIATION

COVID-19	Coronavirus Disease of 2019
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
WHO	World Health Organisation
HCWs	Health Care Workers
CDC	Center for Disease Control
NMC	Navodaya Medical College
RGN	Registered General Nursing
RM	Registered Midwifery
PBM	Post Basic Midwifery

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CHAPTER ONE

INTRODUCTION

1.0 Background of the study

The globe has been faced with the coronavirus disease 2019 (COVID-19) pandemic since late 2019 - a respiratory disease caused by a novel beta-coronavirus called extreme acute respiratory syndrome coronavirus-2 (UNESCO, 2020). The total number of COVID-19 cases continues to rise at a rapid rate in various countries around the world (World Health Organization, 2020). Due to the rapid spread of COVID19 and the alarming death rates, many countries and jurisdictions have implemented preventive measures, with handwashing featuring prominently in all of them (Alzyood, Debra, Aveyard, & Brooke, 2020). It was therefore appropriate when Bonful, et al., (2020) recommended appropriate and frequent handwashing plus physical and social distancing and wearing of facemask as the preventive measures for COVID-19. Hand washing has also been globally acknowledged and accepted as a low cost and effective technique in preventing communicable diseases by countries all over the world, including the ‘’water, sanitation and housing (WASH) programme by UNICEF (Priyanka, Taware, Chatter, & Thakur, 2020).

Globally, people are advised to observe physical distancing and good hygiene habits amidst the pandemic, health experts have constantly reminded that the simple practice of handwashing with soap and clean water is also one of the most effective ways to prevent the spread of germs and viruses (World Health Organization, 2021). Hand washing is identified as a critical component for promoting patient safety and for the prevention of pathogenic infections hence widely recognized as essential measure in preventing healthcare associated infections in hospitals. The promotion of safe hygiene is the single most cost-effective means of preventing infectious disease (Curtis, et al., 2018). During a global pandemic, one of the

cheapest, easiest, and most important ways to prevent the spread of a virus is to wash your hands frequently with soap and water (UNICEF, 2020).

Hand hygiene is a very simple and lifesaving procedure. The average compliance among Health Care Workers (HCWs) 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 this research is been conducted to find out the knowledge, perception, and practice of handwashing among nursing and midwifery students of Holy Family NMTC, Berekum.

1.1 Problem statement

The World Health Organization (WHO) declared COVID-19 to be a public health emergency of international concern on January 30, 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 October 15, 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).

Improper hand hygiene is an important contributing factor to contracting infectious diseases among college students (Pratt, 2019). Approximately 2.4 million deaths can be prevented annually by good hygiene practices, reliable sanitation, and drinking clean water (Reeves & Doms, 2018).

The promotion of hand hygiene behavior is a complex issue (Stone, Teare, & Cookson, 2018). 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).

Although there are several evidence-based recommendations to promote compliance with handwashing and numerous pieces of evidence of the advantages of performing hand washing, inadequate levels of compliance with handwashing among healthcare professionals continue to be reported repeatedly (Center for Disease Control [CDC], 2019).

Given this, it is important to investigate the knowledge, attitude, and practice of handwashing among nursing and midwifery students in Holy Family NMTC, Berekum.

1.2 General objective

To assess the knowledge, attitude and practices of hand hygiene among students of Holy Family NMTC, Berekum

1.3 Specific objective

1. To determine the knowledge of students on proper hand hygiene
2. To investigate the attitude of students towards hand hygiene
3. To examine the practice of hand hygiene among students

1.4 Operational definition of terms

Knowledge: defined as having an adequate understanding of hand washing.

Attitude: defined as a way of thinking about something

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

Hand hygiene: use of recommended means of keeping the hands free from germs.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter contains a review of relevant literature related to the research topic: "Knowledge, perception, and practice of handwashing among students of Holy Family NMTC, Berekum amid COVID 19". The sources of information include books, journals, and online articles, research reports.

2.1 Overview

Handwashing is a simple, convenient, and cost-effective means to limit the transmission of communicable diseases. Improving the practice of handwashing 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 seconds 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).

Hand washing is described as washing hands with soap under running water, according to the Centers for Disease Control and Prevention. Nurses are on duty 24 hours a day, seven days a week in the hospital. Hand hygiene is widely acknowledged as the most effective way to avoid microorganism cross-transmission. The aim of proper hand washing is to split the infection chain, which is made up of six components (RNspeak, 2018).

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 (Katjavivi & Otaala, 2017). Several studies posit that proper hygiene is the key to reduce occurrence of infectious diseases in different types of communities (Apeatu, 2019). Improper hand hygiene is an important contributing factor to contracting infectious

diseases among college students (Pratt, 2019). Approximately 2.4 million deaths can be prevented annually by good hygiene practices, reliable sanitation, and drinking clean water (Reeves & Doms, 2018). A cross-sectional study was conducted among nurses and physicians providing direct patient care in four hospitals in Hong Kong on perceptions of the importance and impact of health care associated infections and hand hygiene. Among respondents a total of 60% of the nurses and 46% of the physicians acknowledged that over 75% of healthcare-associated infections can be prevented by hand hygiene (Pignatelli, et al., 2019).

2.2 Knowledge on Hand Hygiene

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 (WHO, 2020). 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 and compliance with hand hygiene among nursing students. In addition, there were significantly higher rates of hand hygiene other compliance in nursing students when compared to medical students.

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

In a quantitative cross-sectional study among 506 domestic visitors to the prophets Mosque in Al Madinah city by Mahdi et al., (2020), the researches 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 (Mahdi, et al., 2020).

Van De Mortel, Kermode, Progano, and Sansoni (2018) conducted a study to examine the hand hygiene knowledge, beliefs, and practices of Italian nursing and medical students to inform undergraduate curricula. Questionnaires were administered to a 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 that of medical students.

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 were 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 of hand hygiene. The study concluded that insufficient knowledge of nurses and doctors may account for the high rate of coronavirus infections in the hospital.

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

2.3 Attitude Towards Hand Hygiene

Mahdi et al. (2020) conducted a cross-sectional survey among domestic residents who visited the prophet's Mosque in Al Madinah city, Saudi Arabia between July 31 and August 3, 2020. The study aimed to assess hand hygiene knowledge, attitude, and practices of visitors to the Prophet's Mosque in Al Madinah City, Saudi Arabia. A self-administered electronic questionnaire was used to collect data. Four hundred participants aged 18–65 years completed the survey, of which 215 (53.8%) were females. The study found that most participants believed cleaning hands with antiseptic/antibacterial soap and water (263, 65.8%), plain soap and water (195, 48.8%), and alcohol-based hand rubs (224, 56%) were very effective hand hygiene methods, and 60 (15%) thought plain water is very effective. It

was concluded that most of the visitors to the mosque had a positive perception of the effectiveness of hand hygiene in killing viruses existing in our hands, including coronavirus.

Larbi et al. (2019) conducted an observational study in 15 healthcare facilities consisting of 2 district hospitals and 13 health centers in the Kpandai and Tatale-Sanguli districts in the Northern Region of Ghana using a pretest-posttest design. The study found that almost half (48.1%) of the respondents indicated that healthcare-associated infections have a low (38.2%) to very low (9.9%) impact on patients' clinical outcomes. Most healthcare workers (85.5%) at baseline regarded hand hygiene as highly (47.7%) or very highly (41.6%) effective in preventing healthcare-associated infection. Most respondents (70%) assigned a high priority (36.5%) and a very high priority (33.8%) to the importance of institutional hand hygiene importance.

Dwipayanti, Lubis, and Harjana (2021) conducted a cross-sectional online survey from May 28 to June 12, 2020, with 896 valid responses obtained from Indonesian citizens over 18 years old. An online questionnaire was created using Google Forms to collect data. In this study, 66.9% of respondents perceived that they have a medium to low risk of contracting COVID-19, and 65% of respondents perceived that they would only have mild to no symptoms if they contracted COVID-19. Many respondents supposed handwashing as an effective measure to prevent COVID-19 and other diseases (61.3%) and had less negative attitude toward handwashing practice (77%).

2.4 Practice of Hand Washing

Yawson and Hesse (2018) conducted a cross-sectional study on nurses and doctors working in Rabit University Hospital, Sudan. A sample size of 237 health workers comprising 138 nurses and 99 doctors were 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.

In an observational study conducted among nursing and midwifery students at Korle-Bu Teaching Hospital in Ghana, a handwashing compliance rate ranging from 9.2% to 57% among nursing students and 9.6% to 54% among student midwives was reported (Bonful, et al., 2020).

Andriana and Nadjib (2018) conducted a cross-sectional study on community-dwelling participants using a proportionate random sample from all Lebanese governorates (Beirut, Mount Lebanon, North, South, and Bekaa) to determine how frequent proper hand hygiene is practiced. In all two thousand two hundred and eighty-nine (2289) participants were enrolled in the study. Data analysis was conducted using SPSS Version 23. The results of the study showed that hand hygiene compliance remains challenging despite the numerous guidelines that have been published. Factors from the health workers such as skin-irritating soap, hard-hand soap, lack of awareness of the importance of hand hygiene, forgetfulness, and heavy workload have been attributed to health workers' lack of compliance reason. In addition, health workers only wash their hands only when necessary, not always when hands are more likely to be heavily contaminated and the technique remains poor.

Mahdi et al. (2020) conducted a cross-sectional survey among domestic residents, who visited the prophet’s Mosque in Al Madinah city, Saudi Arabia between July 31, and August 3, 2020. A self-administered electronic questionnaire was used to collect data for the study. Four hundred participants aged 18–65 years completed the survey, of which 215 (53.8%) were females. 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 amid the COVID-19 pandemic.

Tobaiqy et al. (2020) conducted a cross-sectional descriptive study involving 387 Umrah pilgrims conducted in 2019 showed that over 90% of pilgrims washed their hands with soap and water or sanitizers after coughing and sneezing, before eating or preparing food, and after using the bathroom.

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

Akwaah, Abankwa, and Siaw (2019) employed a descriptive design to research selected students from which were Saint Monica's Senior High School, St. Joseph's Senior High School, and Amaniampong 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% do not wash their hands at all.

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 was carried out at the Holy Family Nursing and Midwifery Training College, Berekum. The College community is located at the western part of Berekum, in the premises of The Holy Family Hospital, Berekum with a student population over six hundred. The college has two entrances leading into it. 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. Most of the Tutors stay outside campus whilst a few of them stay on campus. 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 students of Holy Family Nursing and Midwifery Training College, Berekum were the target population with the accessible population being the final year nursing and midwifery students of the college community.

3.3 Study design

Descriptive research design will be adopted for this study. Descriptive research can be explained as a statement of affairs as they are at present with the researcher having no control over variable. Descriptive research is aimed at casting light on current issues or problems through a process of data collection that enables them to describe the situation more completely than was possible without employing this method. The importance of descriptive research design is to observe, describe, and document aspects of situations as it naturally occurs.

3.4 Sampling technique and Size

Simple random sampling will be used. For all students to have an equal chance of being selected we made a list of all students from the academic office [that was be our sampling frame], we numbered them from 1 to 10, we will then use a random number generator from Google to randomly select one hundred students from our list.

3.5 Data collection methods and instruments

Data collection will be 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. It was chosen as method of data collection because it covered a large number of people, relatively cheaper, avoided embarrassment on the part of the respondents, possible anonymity of respondents and no user bias. Questionnaires were distributed to the respondents in the community and each respondent was assisted to answer the questions within duration of 30 minutes after which the answered questionnaires were collected.

3.6 Data analysis techniques

Data was analyzed using Microsoft excel software and presented in the form of tables or figures.

3.7 Ethical consideration

An introductory letter will be obtained from the College before conducting the study. Explanation of the study purpose was given to the post basics, nurses and midwives in a group and those who showed interest were recruited and asked to sign a consent form. Respondents were assured of anonymity and confidentiality and instructed not to provide any form of identification on the questionnaire. However, identification codes were used to represent the post basics, nurses and midwives according to their chronologic entry into the study.

3.8 Limitation of the study

The period which will be allowed for the research will be small and also the research team will have limited financial resource since no sponsorship will be obtained and that will account for a small sample size.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Data Presentation & Analysis

This chapter deals with the analysis of data collected from the field of study and the results obtained from the analysis. The study findings are presented in tables or figures.

4.1 Demographic Profile of Respondents

Table 1: Age Distribution of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Age	18-22	11	22
	23-27	33	66
	28-32	4	8
	Above 32	2	4

From Table 1, most of the respondents (66%) were aged between 23-27 years, less than half of the respondents (30%) were aged between 18-22 years. Few of the respondents (4%) were aged above 32 years and 8% were aged between 28-32 years.

Table 2: Sex Distribution of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Sex	Male	24	48
	Female	26	52

Over half of the respondents (52%) were females and 48% were males.

Table 3: Marital Status of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Marital Status	Single	41	82
	Married	9	18
	Divorced	0	0

Most of the respondents (82%) were single and 18% of the respondent were married. None of the respondents was divorced.

Table 4: Programs offered by Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Program	RGN	27	54
	RM	17	34
	PBM	6	12

From Table 4, 54% of the respondent were Registered General Nursing students, 34% were Registered Midwifery students and 12% were Post Basic Midwifery students.

4.2 Knowledge of Nursing Students on Handwashing

Table 5: Respondents knowledge of handwashing

Statement		Strongly Disagree	Disagree	Agree	Strongly Agree	Do not Know
Handwashing prevents the direct transfer of infectious pathogens.	n	2	1	27	20	0
	%	4	2	54	40	0
Promote good hand hygiene practices.	n	4	1	15	30	0
	%	8	2	30	60	0
The target of proper handwashing is to break the infection chain.	n	2	1	15	32	0
	%	4	2	30	64	0

The majority of the respondents (54%) agreed that handwashing prevents the direct transfer of infectious pathogens. Less than half of the respondents (40%) strongly agreed with this assertion. Four percent (4%) of the respondents strongly disagreed and 2% of respondents disagreed with the statement.

Also, the majority of the respondents (60%) strongly agreed that one way of reducing COVID-19 transmission is to promote good hand hygiene practices. Less than half of the respondents (30%) also agreed to that statement whiles 8% and 2% of respondents strongly disagreed and disagreed respectively with the statement.

In addition to the above, the majority of the respondents (64%) strongly agreed that the target of proper handwashing is to break the infection chain, less than half of the respondents (30%) also agreed to that statement, 4% of respondents strongly disagreed and 2% of the respondents disagreed.

4.3 Attitude Towards Hand Hygiene

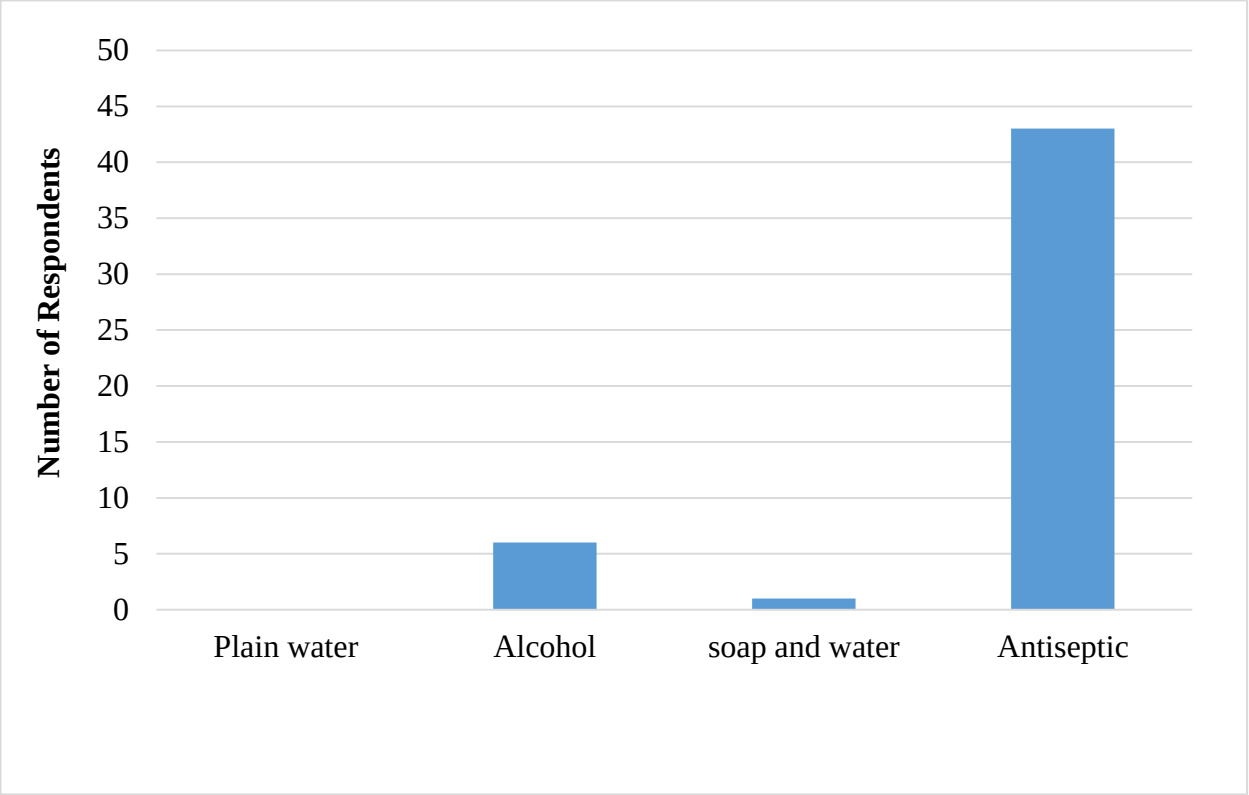

Figure 1: Respondents attitude towards e**ffectiveness of** h**andwashing**

From Figure 1, 86% of the respondents mentioned that the most effective handwashing method is washing hands with antiseptic/antibacterial soap and water, 12% of the respondents viewed that the use of alcohol-based hand rubs is the effective method of hand hygiene, 2% of the respondents thought effective handwashing is done with plain soap and water and none of the respondents professed that handwashing is done using plain water.

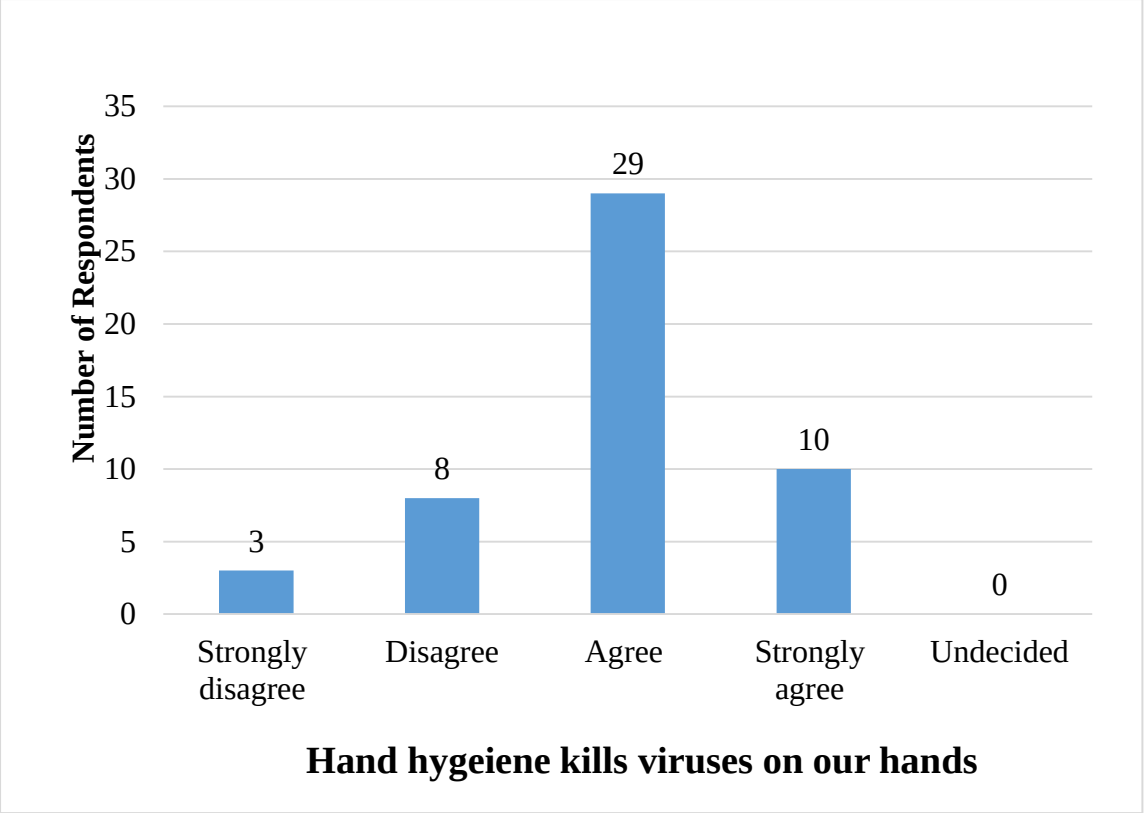

Figure 2: Respondents view on whether hand hygiene kills viruses on the hands

The majority of the respondents (58%) agreed that hand hygiene kills viruses on our hands and 20% of the respondents strongly agreed with this assertion. Few of the respondents (16%) disagreed that hand hygiene kills viruses on our hands and 6% strongly disagreed that hand hygiene kills viruses on our hands.

4.4 Frequency of Handwashing Practice

Table 6: Respondents on what reminds them to practice hand hygiene

Variable	Categories	Frequency (n)	Percentage (%)
What reminds you to practice hand hygiene?	Television	2	4
	Notice board	1	2
	Pictures	3	6
	On your own	44	88

Majority of the respondents (88%) indicated they are reminded to practice hand hygiene on their own. Few of the respondents (6%) indicated they are reminded by pictures followed by television (4%) and notice board (2%). None of the respondents indicated that they are reminded by their friends to practice hand hygiene.

Table 7: Respondents on number of times handwashing is performed in a day

Variable	Categories	Frequency (n)	Percentage (%)
How many times do you perform handwashing in a day?	Once	3	6
	Twice	8	16
	Thrice	6	12
	More than 3	33	66
	None	0	0

From Table 7, the majority of the respondents (66%) indicated that they wash their hands more than three times a day. Few of the respondents (16%) indicated that they wash their hands twice a day, 12% indicated that they wash their hands thrice a day and 6% of the respondents indicated that they wash their hands once a day.

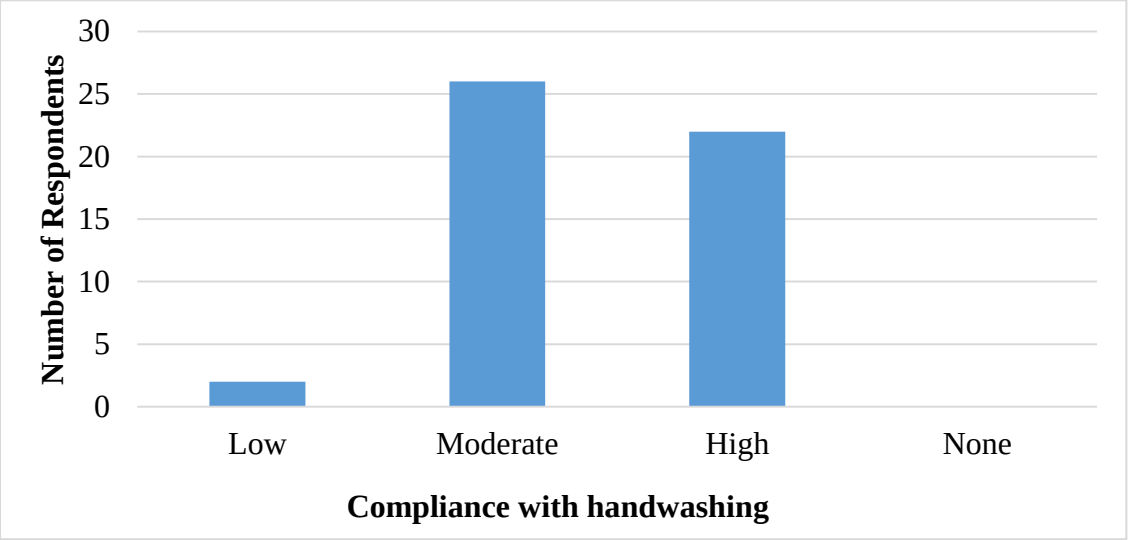

Figure 3: Respondents compliance with handwashing

The majority of the respondents (52%) rated their overall compliance with handwashing moderate. Less than half (44%) rated their compliance high and few of the respondents (2%) rated their overall compliance with handwashing to low.

Table 8: Frequency of Handwashing by Respondents

Variable		**Always**	**Sometimes**	**Never**
After visiting the washroom	n	45	4	1
	%	90	8	2
After handshakes	n	14	33	3
	%	28	66	6
After sneezing	n	10	37	3
	%	20	74	6

From Table 8, the majority of the respondents (90%) indicated they always wash their hands after visiting the washroom, 8% indicated that they wash their hands after visiting the washroom and 2% of the respondents indicated that they wash their hands after visiting the washroom.

Most of the respondents (66%) indicated they sometimes wash their hands after handshakes with 28% of the respondents indicating they always wash their hands after handshakes and 6% of the respondents indicated that they wash their hands after handshakes.

The majority of the respondents (74%) indicated they sometimes wash their hands after sneezing, 20% of the respondents indicated they always wash their hands after sneezing and 6% of respondents indicated they wash their hands after sneezing.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter provides an in-depth look at the major findings that emerged out of the research, comparison of the analyzed data with findings from other literature, conclusion, and recommendations.

5.1 Discussions

5.1.1 Knowledge of Nursing Students on Handwashing

The majority of the respondents (60%) strongly agree that one way of reducing COVID-19 transmission is to promote good hand hygiene practices and less than half of the respondents (30%) also agree with that statement. 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.

The majority of respondents (54%) agree that handwashing prevents the direct transfer of infectious pathogens and less than half of the respondents (40%) also strongly agree with that assertion. The majority of the respondents (64%) strongly agree that the target of proper handwashing is to break the infection chain and less than half of the respondents (30%) also agree with that statement. 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.

5.1.2 Attitude Towards Hand Hygiene

The majority of the respondents (86%) perceive that the most effective handwashing method is washing hands with antiseptic/antibacterial soap and water. 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.

The majority of the respondents (58%) agree that hand hygiene kills viruses existing in our hands and twenty percent (20%) of the respondents strongly agree with that assertion. Similarly, Mahdi et al. (2020) reported that most of the visitors to the mosque had a positive perception of the effectiveness of hand hygiene in killing viruses existing in our hands, including the coronavirus.

5.1.3 Frequency of Handwashing Practice

The majority of the respondents (88%) indicate they are reminded to practice hand hygiene on their own. Few of the respondents (6%) indicate they are reminded by pictures, television (4%), and notice board (2%). None of the respondents indicate they are reminded by their friends to practice hand hygiene. These findings are not in line with a study conducted by Yousif et al. (2020). They reported that most healthcare workers believed that notice boards reminded them to carry out hand hygiene.

The majority of the respondents (66%) indicate they wash their hands more than three times a day. Whiles 16% indicate they wash their hand twice a day. Similarly, Van De Mortel et al. (2018) reported that nursing students' hand hygiene compliance and self-reported hand hygiene practices were significantly higher. In addition, Akwaah, Abankwa, and Siaw (2019) found that 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 wash their hands at all.

The majority of the respondents (52%) rate their overall compliance with handwashing moderate. Less than half (44%) rate it high and 2% rate their overall compliance with handwashing low. These findings contradict the findings of Andriana and Nadjib (2018) which revealed that despite the continuous efforts, healthcare professionals' compliance with hand hygiene guidance remains sub-optimal.

The majority of the respondents (90%) indicate they always wash their hands after visiting the washroom. Similarly, Tobaiqy et al. (2020) found that over 90% of pilgrims washed their hands with soap and water or sanitizers after using the bathroom.

Most of the respondents (66%) indicate they sometimes wash their hands after handshakes with 28% of the respondents indicating they always wash their hands after handshakes. The majority of the respondents (74%) indicate they sometimes wash their hands after sneezing with 20% of the respondents indicating they always wash their hands after sneezing. These findings are in line with a study conducted by Ojong (2016) who reported that observations on the practice of handwashing revealed that most (42.2%) of respondents always practiced hand washing.

5.2 Conclusion

The study concluded that respondents had good knowledge of proper handwashing. Majority of the respondents mentioned that the most effective handwashing method is washing hands with antiseptic/antibacterial soap and water. Self-reported handwashing compliance was high. Majority of the respondents said they are reminded to practice hand hygiene on their own. Majority of the respondents (90%) indicated they always wash their hands after visiting the washroom.

5.3 Recommendations

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

1. Student nurses need to be made aware of the importance of hand hygiene and the negative effects that will be caused when it is not followed.
2. 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.
3. Hospitals and institutions should avoid the use of bar soaps in hand hygiene since they can harbor bacteria.

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APPENDICES

QUESTIONNAIRE

Dear Respondent,

We are students of the above institution researching the topic; Knowledge, attitude, and practice of handwashing among students of Holy Family Nursing and Midwifery Training College, Berekum.

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.

SECTION A: Demographic Data

1. Age

   a. 18-22 [] b. 23-27 [] c. 28 and above []

2. Sex

   a. Male [] b. Female []

3. Marital status

   a. Single [] b. Married [] c. Divorced []

4. Religion

   a. Christianity [] b. Islam [] c. Traditional []

5. Program

   a. RGN [] b. RM []

SECTION B: KNOWLEDGE ON HANDWASHING

No.	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree	Do not Know
6.	Handwashing prevents the direct transfer of infectious pathogens					
7.	One way of reducing COVID 19 transmission is to promote good hand hygiene practices					
8.	The target of proper handwashing is to break the infection chain					

SECTION C: ATTITUDE TOWARDS HAND HYGIENE

Select the most appropriate

9. 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 []

10. Hand hygiene is highly effective in preventing infections

    a. Agree [] b. Disagree [] c. Don't know []

SECTION D: HAND HYGIENE PRACTICE

11. What reminds you to practice hand hygiene?

    a. Television []

    b. Notice board []

    c. Pictures []

d. Friends []

e. On your own []

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

    a. Once []

    b. Twice []

    c. Thrice []

    d. Four or more []

    e. None []

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

    a. Low []

    b. Moderate []

    c. High []

    d. None []

Indicate how often you wash your hands in the following instances

14. After visiting the washroom

    a. Always [] b. Sometimes [] c. Never []

15. After handshakes

    a. Always [] b. Sometimes [] c. Never []

16. After sneezing

    a. Always [] b. Sometimes [] c. Never []

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Our Ref .....

Your Ref .....

September 22, 2022

Date .....

Dorcas Osei
Holy Family NMTC
Post Office Box 21
Berekum

Dear Miss Osei

PERMISSION TO CONDUCT RESEARCH

With reference to your Memorandum dated September 5, 2022, I write to notify you that the students listed below have been granted permission to conduct their research in the College on the topic **'Knowledge, Attitude and Practices of Hand Hygiene among students of Holy Family Nursing and Midwifery Training College, Berekum'**

1. **Samuella Serfoaa**
2. **Boateng Belinda**
3. **Pokuaa Belinda**

Thank you.

Yours sincerely

PRINCIPAL
HOLY FAMILY NURSING AND

Monica Nkrumah (FGCNM)
Principal