**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**COLLEGE OF HEALTH SCIENCES**

**FACULTY OF ALLIED HEALTH SCIENCE**

**DEPARTMENT OF NURSING**

**DIPLOMA PROGRAMMES**

# KNOWLEDGE, ATTITUDE AND PERCEPTION ABOUT COVID-19 VACCINES AMONG NURSING AND MIDWIFERY 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 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.

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## ABSTRACT

The study assessed the knowledge attitude and perception about COVID-19 vaccines among nursing and midwifery students of Holy Family NMTC, Berekum. Descriptive study design was adopted for the study. The sample population was obtained using convenience sampling technique. A total of 150 students were sampled for the study. The data for the study was collected by administering structured questionnaire to the participants. Data was analyzed using Microsoft excel software and presented in the form of tables or figures. The study found that almost all 87 (98.9%) the respondents indicated they have heard of COVID-19 vaccination. Over half 46 (52.3%) of the respondents indicated that their main source of information was the internet and social media followed by television/radio 38 (43.2%), newspapers 2 (2.3%) and friends and relatives 2 (2.3%). Majority (80.7%) of the respondents agreed that COVID 19 vaccines are effective, majority (83%) of the respondents agreed that people being vaccinated can start to do normal activities. Majority 54 (64.8%) of the respondents said they feared COVID-19 vaccines followed by 34.1% who said they did not fear the vaccines. Nearly fifty percent 43 (48.9%) of the respondents said they are not at high risk of becoming infected with COVID-19.

The study recommended that the government of Ghana must continue to educate the public and communities that vaccines are safe, that they are effective and that they are still required even after a COVID-19 infection.

The study concluded that Respondents had good knowledge about COVID-19 vaccination. The main source of information from most respondents on COVID-19 vaccination was the internet and social media. Attitude towards COVID-19 Vaccination was pleasing as most of the respondents had vaccinated against COVID-19.

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## ABBREVIATION

| | |
|---|---|
| COVID-19 | Coronavirus disease 2019 |
| GoG | Government of Ghana |
| GHS | Ghana Health Service |
| SARSCOV-2 | Severe Acute Respiratory Syndrome Coronavirus 2 |
| WHO | World Health Organization |

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# CHAPTER ONE

# INTRODUCTION

## 1.0 Background of 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 [WHO], 2020). The coronavirus is a disease that was first tested in China specifically in Wuhan city in the year 2019 around 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 January 30, 2020. The mortality rate was found to be 3.9% according to the data at the time (WHO, 2020).

The global impact of COVID-19 is multifaceted and is 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 has been a plethora of daily reports on its impact on the lives of millions across the world. According to WHO (2021) Globally, as of 6:09pm CEST, 10 June 2022, there have been 532,201,219 confirmed cases of COVID-19, including 6,305,358 deaths, reported to WHO. As of 7 June 2022, a total of 11,854,673,610 vaccine doses have been administered. In Ghana, from 3 January 2020 to 6:09pm CEST, 10 June 2022, there have been 161,841 confirmed cases of COVID-

19 with 1,445 deaths, reported to WHO. As of 29 May 2022, a total of 16,203,630 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 is released within the respiratory secretions and 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, COVID-19 can cause a change in the progress of the underlying disease and rising mortality (Guo, Fan, & Chen, 2020). An increase in blood glucose levels can lead to the destruction of the immune systems of individuals and results in a decrease in the ability 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 173 patients with severe disease were with comorbidities 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 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).

Vaccines are the most important public health measure and most effective strategy to protect the population from COVID-19, since SARS-CoV-2 is a highly contagious virus and affects populations globally. The competition for COVID-19 vaccine invention and development against the spread and catastrophic effects of the disease is ongoing (Chan, et al., 2020), and new, more effective vaccines are likely to be developed as we move through the pandemic. With the distribution of vaccines underway, it is very important to examine community acceptance of COVID-19 vaccinations (Reiter, Pennell, & Katz, 2020).

A study in Bangladesh found that a quarter of participants thought that the COVID-19 vaccination available in Bangladesh is safe, only 60% will have the vaccination and about two-thirds will recommend it to family and friends. Just over half of the participants thought that everyone should be vaccinated and 61% responded that health workers should be vaccinated first on priority basis. 95% of respondents believed the vaccine should be administered free of charge in Bangladesh and almost 90% believed that the COVID-19 vaccine used in Bangladesh may have side effects (Islam, et al., 2021).

The COVAX program, backed by the World Health Organization (WHO) and other multilateral bodies, aims to supply 600 million doses to Africa, enough to vaccinate at least 20% of the population. However, by April 2021, only 18 million doses, representing 2% of all vaccine doses administered globally, had been administered by 41 African countries (BBC, 2021). An additional 400 million doses of the Johnson & Johnson vaccine are scheduled to be shipped to the African Union starting in the third quarter of 2021 (Reuters, 2021). The first

large shipment (2.2 million doses) of the AstraZeneca vaccine was received by Ghana in early March 2021 through the COVAX program. The country expected to receive an additional 5.4 million doses by May 2021 (WHO, 2021). In addition, the African Vaccine Acquisition Trust (AVAT) announced the first monthly shipment of 108,000 doses of Johnson & Johnson vaccine to Ghana (Africa CDC, 2021).

As of October 26, 2021, while more than 3.84 billion people worldwide had received one dose of a COVID-19 vaccine (equal to about 50% of the world population), 24 African countries had vaccinated less than 3% of their populations (Josh, 2021).

A study titled COVID-19 knowledge, attitude, and practice among medical undergraduate students in Baghdad City‟ was conducted by Khalil et al. (2020) where he discovered the students‟ overall awareness of COVID-19 is 91.8 percent and social media was serving as the primary source of learning (36%). More than 90% and three-quarters of students had a good outlook toward the pandemic and were taking preventive steps. Furthermore, more than half of the students were pleased with the local health authorities combatting strategy during COVID-19. On the other side, Lucia et al. (2020) found that virtually all participants had favorable attitudes about vaccines.

An Ethiopian study found that proportion of Healthcare Workers with overall good knowledge, good perception, and positive attitudes about COVID-19 vaccination were 62.5%, 60.5%, and 52.3%, respectively; 64.0% of the Healthcare Workers wanted to be vaccinated while 36.0% said that they would refuse to do so (Adane, Ademas, & Kloos, 2022).

In order to implement the most effective vaccination strategy in Ghana, we need to know the knowledge, attitudes and perceptions of people about COVID-19 vaccinations. This is because, people’s knowledge, attitudes and perceptions towards COVID-19 are crucial for Government and policy makers to address all barriers to vaccine distribution.

## 1.1 Problem statement

The Coronavirus Disease 2019 (COVID-19) pandemic caused severe disruptions in and unprecedented challenges for healthcare systems worldwide. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), causative of severe viral pneumonia that started in Wuhan, China in December 2019, has infected more than 120 million people and resulted in 2.66 million deaths as of March 16, 2021 (Dong, et al., 2020).

To achieve the necessary herd immunity to control viral transmission and stop the pandemic, vaccinating more than 82% of the population is crucial and requires strong acceptance and low hesitation levels throughout the population (Sanche, et al., 2020). Therefore, identifying factors associated with vaccine acceptance and hesitancy is needed to implement policy changes and help public health experts identify a conceptual framework and educational campaign aimed at increasing this awareness in the general population (Wong, et al., 2021). Waning public confidence in vaccines due to rumors and conspiracy theories is a major challenge for public health experts and policymakers worldwide (Kumar et al., 2021). Hesitation, spreading rumors, and fake news can affect public mentality and vaccine decisions. A known example is the 2003–2004 Nigerian boycott of the polio vaccine that resulted in a surge of the disease (Ghinai, Willott, Dadari, & Larson, 2019). Therefore, social endorsement and efforts against hesitation regarding the COVID-19 vaccination are essential, especially in limited-resource settings. This will help promote vaccination and establish trust between the general population and health authorities and policymakers, leading to better control of the pandemic and a reduction of lives lost.

## 1.2 General objective

To assess the knowledge attitude and perception about COVID-19 vaccines among nursing and midwifery students of Holy Family NMTC, Berekum

### 1.3 Specific objective

1. To investigate students' knowledge on COVID-19 vaccines
2. To find out the attitude of students toward COVID-19 vaccines
3. To find out students' perception about COVID-19 vaccines

### 1.4 Operational definition of terms

**Knowledge**: defined as the information an individual has regarding a subject at hand

**Attitude**: refers to a settled way of thinking or feeling about something

**Perception**: defined as the way in which something is regarded, or interpreted.

**Vaccination**: the administration of a vaccine to help the immune system develop immunity from a disease.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

This chapter contains review of relevant literature related to the research topic. A well-structured literature review begins with broad or general information, then narrows the focus to those studies most closely related to the research problem.

## 2.1 COVID-19 Vaccination: International Perspectives

The global effort to develop and distribute an effective vaccine for COVID-19 disease has already yielded some promising options. Within a year, governments, multilateral organizations, and private companies invested billions of dollars to create successful vaccines for it (Felter, 2021). More than 400.1 million vaccine doses have been delivered worldwide as of March 18, 2021, equating to 5.2 doses per 100 people. At least 143 countries and territories have administered more than 409 million doses of a COVID19 vaccine, according to CNN Health, barely a year after the first Covid-19 case was identified in China. There is also a significant disparity between vaccination systems in various nations (Josh, 2021). According to Our World in Statistics, ten different vaccines are used around the world. The Pfizer-BioNTech vaccine, which is 95% effective in minimizing coronavirus infections, is now used in 76 countries. Several countries have given their consent to vaccines but have yet to start prescribing them (Josh, 2021). The vaccine distribution strategy varies by region. Some proponents have called for vaccinating as many individuals as possible, while others have sought to prioritize vaccinating disadvantaged groups (CNN, 2021). Furthermore, the acceptability of a newly introduced vaccine is an important factor to consider with its coverage within the population for an effective immunization program (Bhartiya, et al.,

2021). Mannan and Farhana published a report in 2020 that shows the global acceptance rate of COVID-19 vaccination (Mannan & Farhana, 2020).

### 2.2 Knowledge On COVID-19 Vaccination

A web-based, cross-sectional study was conducted involving the general population, medical students, and healthcare workers in more than 20 Libyan cities using convenience sampling in Libya. The study found that the main sources of information on COVID-19 pandemic by medical students were World Health Organization (35.8%), National Center for Disease Control (22%), news and media (7.4%), internet and social media (31.3%) and more than one source (1.3%) (Elhadi, et al., 2021).

A descriptive study was conducted in Bangladesh among University students to assess their knowledge on COVID-19 vaccines. Empirical analysis was performed by using both qualitative and quantitative approaches and data has been collected from both primary and secondary sources. A purposive sampling technique was used to perform the analysis. The sample for this analysis is N=322 participants. The study found that 62.1% of the respondents indicated they don't know whether the COVID-19 vaccines are effective, 65.8% did not know the COVID-19 vaccine can create long term physical problems and 65.8% knew that the vaccine has the potential to cause some side effects (Biswas, et al., 2021).

An exploratory and anonymous population-based e-survey was conducted in Bangladesh. The survey was conducted using a semi-structured and self-reported questionnaire. The study revealed that 89.9% knew about the COVID-19 vaccine, 52.2% knew about the effectives of the vaccine. 64.9% said it is dangerous to use overdose of the vaccine, 37.0% said the vaccine does cause allergic reactions whiles 59% did not know, 63.9% did not know whether the vaccine increase autoimmune disease. The study found that participants' source of knowledge about the COVID-19 vaccine, which is mainly from mass media (53.0%), social media

(45.0%), the internet (38.7%), Newspaper (15.4%), family members/relatives (8.0%) and friends/neighbors (7.5%). In conclusion, the findings reflect inadequate knowledge but more positive attitudes towards COVID-19 vaccine among the general population in Bangladesh. In order to improve knowledge, immediate health education programs need to be initiated before mass vaccination are scheduled (Islam, et al., 2021).

A cross-sectional study was carried out by Rahman et al. (2021) in Bangladesh. A total of 850 adult people participated. A rapid self-administered online survey was conducted to assess knowledge regarding COVID-19 vaccination among Bangladesh's adult population (18 years and older) with internet access. The study found that 66% of respondents said COVID-19 vaccines are effective to prevent COVID-19 infection. Other positive responses provided were; need to maintain the health regulations after being vaccination (88.82%), vaccine will also help keep from getting seriously ill from covid-19 (70.94%), people being vaccinated can start to do normal activities (72.47%), vaccine has the potential for some side effects (87.18%), side effects due to the vaccination, normally go away in a few days (74.35%) and the vaccine can create long-term physical problems (61.06%) (Rahman, et al., 2021).

An institution-based cross-sectional study was employed among 404 Health workers (HCWs) in Dessie City, northeastern Ethiopia. Data were collected, checked, coded, into Statistical Package of Social Sciences (SPSS) Version 25.0 for cleaning and analysis. The study showed that the overall good knowledge rate of the HCWs about COVID-19 and its vaccine was 62.5%. Of those who had good knowledge of COVID-19 and its vaccine, (69.79%) were planning to be vaccinated as soon as a vaccine becomes available. majority (86.7%) responded that COVID-19 is a serious disease and (83.9%) stated that it could result in many health complications. One hundred fifty (38.3%) HCWs considered the differences in the effectiveness among the Pfizer, Moderna, and Astra Zeneca COVID19 vaccines to be large. More than three-quarters (77.6%) of the HCWs considered the major mode of COVID-19

transmission to be touching contaminated surfaces and touching one's eyes, nose, and mouth, followed by shaking hands, hugging, and kissing (70.4%) and inhaling the virus (69.9%) (Adane et al., 2022).

A cross-sectional survey was conducted in Ghana to assess the knowledge among health trainees in Ghana regarding COVID-19. An online-structured questionnaire was developed in English, which is the official communication language in Ghana to collect data from students. A total of 496 participants responded to the survey. Responses received were imported to SPSS version 24 for cleaning and analysis. The study found that (25%) of respondents had good knowledge, 69% had moderate knowledge and 6% had poor knowledge on COVID-19. More than 90% of participants practice the general preventive measures. Gender and level of the program of study was significantly associated with practice of preventive measures. Male students (54.6%) were more engaged in good preventive practices compared to female students (43.8%). Their source of information on COVID 19 were radio/television (81.9%), social media (83.7%), seminars/workshops (14.3%), newspapers (36.5%). knowledge on the signs and symptoms of the virus ranged from fever (91.3%) as the highest indicated by participants followed by shortness of breath (91.0%), dry cough (88.7%), fatigue (39.5%) and myalgia (9.7%) to other signs and symptoms (4.6%) being the least sign and symptom selected by participants. Majority of participants (90.9%) consider those with underlying chronic medical conditions, the aged (85.1%), children (32.3) and other conditions as people with a high risk of contracting and dying from this viral disease. Most participants know of hand washing protocols (95.8%), alcohol-based sanitizers (92.3%), wearing a face mask (91.3%), avoiding handshakes (89.5%), avoiding overcrowded places (90.9%), staying safe at home (93.2%), and other preventive measures such as coughing into tissues and avoiding unnecessary spitting. More than 90% indicated that there is no effective vaccine, but

treatment exists. Majority of the healthcare trainees had necessary information and proactive practice towards COVID-19 (Adu, et al., 2020).

### 2.3 Attitude Toward COVID-19 Vaccination

Vaccination campaigns against COVID-19 throughout the world are not only a major organizational challenge, but also a communication and social challenge. Regarding attitudes towards vaccines the COVID-19 vaccination campaign in Italy only 36% of Italians express their willingness to get vaccinated as soon as possible. Italians believe that vaccines benefits exceed risks (52%) (Bucchi, Fattorini, & Saracino, 2022).

A self-reporting e-survey and questionnaire-based survey from vaccination centers of different cities of Pakistan among 502 participants were conducted. The respondents had a positive attitude towards the vaccine. 47.4% are sure about the vaccine's efficacy, 48.6% said getting vaccinated was their own decision, and 79.9% also recommended others to get vaccinated. The study concluded that the Pakistani population has a positive attitude but inadequate knowledge towards COVID-19 vaccines. Immediate awareness and vaccination education programs should be conducted by the authorities to complete the mass vaccination schedule (Beg, et al., 2022).

A web-based, cross-sectional study was conducted using convenience sampling in Libya. Acceptance of the COVID-19 vaccine is an essential determinant of vaccine uptake and the likelihood of controlling the COVID-19 pandemic. (16.3%) participants agreed, and (20.7%) strongly agreed, with "having concerns about serious vaccine-related complications." Mask-wearing adherence was reported by (68.1%) of the participants. Most participants (93.1%) believed that the vaccine should be provided for free, while (48.2%) were willing to buy it. Regarding vaccine acceptance and efficacy, (79.6%) reported their willingness to take the vaccine with an efficacy of 90% or more, (60.6%) with an efficacy of 70% or more, and only

(41.2%) with an efficacy of 50%. Acceptance of the COVID-19 vaccine is an essential determinant of vaccine uptake and the likelihood of controlling the COVID-19 pandemic (Elhadi et al., 2021).

A cross-sectional study design was conducted at south west Ethiopia. The study found that over half 51.1% of respondents indicated that the newly discovered second COVID19 vaccine dose is safe, 94.4% said they will encourage my family, friends and relatives to get vaccinated against COVID-19 again, 83.4% said they will take second COVID-19 vaccine dose without any hesitation, 49.1% said it is not possible to reduce the prevalence of COVID-19 without a second vaccine dose (Ahmed, et al., 2021).

An exploratory and anonymous population-based e-survey was conducted in Bangladesh. The survey was conducted using a semi-structured and self-reported questionnaire. The mean score of attitudes was 9.34 out of 12, with an overall 'positive attitude' score of 78%. The mean score of attitudes was significantly higher among participants who reported being female and having previous history of receiving all the necessary vaccines. Of particular interest is that only about a quarter of participants (26%) regard the current COVID-19 vaccine in Bangladesh as safe, almost 60% would have the vaccine without hesitation and two-thirds would encourage family or friends to have the vaccination (66%). Therefore, public health work is required to positively impact on attitudes to the COVID-19 vaccination (Islam et al., 2021).

A study conducted in Bangladesh by Rahman et al. (2021) reported that 59.41% of respondents indicated that the vaccines are safe and effective, 67.76% said they would take the vaccine as soon as possible, 46.9% said vaccination will help us to stop spreading COVID-19.

The attitudes towards COVID-19 vaccination among healthcare workers was assessed in the Caribbean. Many respondents pointed to their concerns regarding potential long-term side effects caused by the vaccines as a reason for influencing their opinion and for refusing or delaying the COVID-19 vaccine. Similarly, an important number of answers within the thinking and feeling domain fell under the construct related to confidence in vaccine benefits (28.2%). These answers pointed to sentiments of uncertainty on the length of the immunity provided by the vaccine, as well as the protection (or lack thereof) against variants of concern. Another important and significant construct that the respondents reported was related to trust (or lack thereof) in the COVID-19 vaccines (20.2%) (Pan American Health Organization, 2021).

An institution-based cross-sectional study was employed among 404 HCWs in Dessie City, northeastern Ethiopia. The overall positive attitude rate about the COVID-19 vaccine was 52.3%. Two-fifth's (40.6%) of the HCWs were confident that the Ministry of Health can control COVID-19 in Ethiopia but 55.4% of them expressed a general mistrust/uncertainty about the effectiveness of COVID-19 vaccines, 56.4% feared the COVID-19 vaccines, 34.9% refused to get vaccinated because only God/Allah can prevent COVID-19, 70.4% indicated that all HCWs be vaccinated to protect the public (Adane et al., 2022).

A cross sectional study was conducted in Ghana. The study found that about 70.44% (329) of the 467 participants reported that they were willing to get vaccinated; 138 (29.55%) participants were not willing to get vaccinated. Among the healthcare workers (197), 72.58% (143) were willing while 27.41% were not willing which is similar to the response from people not working in the healthcare sector where 68.8% were willing and 31.1% were unwilling for vaccination; 207 (44.3%) candidates gave their preference for oral vaccination and 260 (55.6%) for injectable; 231 (49.4%) participants believed people can be protected by the COVID-19 vaccine, while 52 (11.1%) responded "no" and the rest 184 (39.4%)

responded, “don’t know;” 161 (34.47%) believed that the vaccine should be free only for the poor, 277 (59.31%) felt it should be free for all, and only 29 (6.20%) felt it should not be free. Only 63.1% showed willingness toward getting their child vaccinated against COVID-19. At the same time, 171 (36.61%) believed that all frontline workers should get vaccinated first (Kishore et al., 2021).

### 2.4 Perception Towards the Practice of COVID-19 Vaccination

A cross-sectional study design was conducted at south west Ethiopia. This study revealed that 298 (72.9%) of the participants perceived that the second COVID-19 vaccine dose increases allergic reaction (Ahmed et la., 2022). A study carried out in Bangladesh revealed that exactly 24.12% of the study population received their first dose of COVID-19 vaccine, whereas 30.23% expressed hesitation about pursuing the vaccine. Fear of adverse consequences (86.67%) was the most common reason for hesitation, followed by insufficient information (73.85%) (Rahman et al., 2021).

A web-based, cross-sectional study was conducted using convenience sampling in Libya. The study found that (39.9%) believed that the number of COVID-19 cases was exaggerated, while (26.6%) agreed, and (29%) strongly agreed that the COVID-19 vaccine will effectively control the disease, together constituting a majority of participants. Regarding the vaccine trust and safety, approximately a third of study participants either agreed (18.4%) or strongly agreed (23.1%) that receiving a safe and trusted vaccine was possible. On the other hand, most (71.6%) believed there would be difficulties in equitable and proper vaccine distribution. Interestingly, almost a third of the participants either agreed (16.3%) or strongly agreed (20.7%) with concerns about serious vaccine complications (Elhadi et al., 2021).

An institution-based cross-sectional study was employed among 404 HCWs in Dessie City, northeastern Ethiopia. The overall rate of good perception about the COVID-19 vaccine was

60.5%. Three-quarters (292, 74.5%) of the HCWs considered themselves to be at high risk of becoming infected with COVID-19 and 39.5% of them thought that they could get infected with COVID-19 through vaccination. (44.1%) of the respondents thought that it may not be possible to reduce the incidence of COVID-19 without vaccination. 46.9% thought that the COVID-19 vaccine can worsen any health conditions they had. 71.9% indicated that he development of COVID-19 vaccines was properly carried out to make them safe (Adane et al., 2022).

An exploratory and anonymous population-based e-survey was conducted in Bangladesh. The survey was conducted using a semi-structured and self-reported questionnaire. The study found that with regard to the question 'Who should have been vaccinated?', just over half (52%) of participants thought everyone should be vaccinated. Almost 95% of participants responded that the vaccine should be administered free of charge in Bangladesh. most participants believed that the newly discovered COVID-19 vaccine may have side effects (89%). Over half of participants (56%) responded that if everyone in the society maintains the preventive measures, the COVID-19 pandemic can be eradicated without vaccination and about a third (35%) responded that they would not purchase the vaccine at their own expense if it was not provided free of charge by the government. The findings reflected inadequate knowledge but more positive attitudes towards COVID-19 vaccine among the general population in Bangladesh (Islam et al., 2021).

A descriptive study was conducted in Bangladesh among University students to determine the students perception towards COVID-19 vaccination. The study found that 34.8% agreed that they were satisfied with the government policy towards COVID-19 vaccination program. 87.6% agreed that they were concerned about the COVID-19 pandemic, 57.8% had a neutral stance when asked if they thought that the COVID-19 vaccine is safe and effective. 36.0%

said they wanted to take the vaccine as soon as possible, 36.0% agreed that the vaccination will help to stop spreading COVID-19 (Biswas et al., 2021).

# CHAPTER THREE

# MATERIALS AND METHODS

## 3.0 Introduction

This chapter details, the study area and study population, study design, sampling techniques, data collection method and instrument, data analysis techniques, ethical consideration, and the limitations of the study.

## 3.1 Study area

The study was carried out at the Holy Family Nursing and Midwifery Training College, Berekum. The College is located in the western part of Berekum, on the premises of The Holy Family Hospital. The College population is made up of students teaching and non-teaching staff. The College runs three Diploma programs; Registered General Nursing (RGN), Registered Midwifery (RM), and a two-year Post Basic Midwifery (NAP/NAC). The College authorities have made provisions for several veronica buckets at various vantage points on campus to aid in handwashing in fighting COVID-19. COVID-19 vaccination is also a mandatory requirement for students and staffs in the College

## 3.2 The study population

The target population is the nursing and midwifery students of Holy Family Nursing and Midwifery Training College, Berekum.

## 3.3 Study design

A descriptive study design was used for the study. This design was used for the study because there was the need to describe the characteristics of the phenomenon being studied. The design also allows for us to observe the students in their natural and unchanged environment.

The data collection in descriptive research allows for the gathering of in-depth information about the research problem.

### 3.4 Sampling technique and Size

Convenient sampling technique was used to select samples for the study. This was chosen because sampling is easy, fast and affordable. Total of 150 students will be selected for the study.

### 3.5 Data collection methods and instruments

Data collection was done through the use of structured questionnaires consisting of both closed-ended and open-ended questions for easy expression of views and ideas. This was chosen as the method of data collection because it is relatively cheaper, avoided embarrassment on the part of the respondents, and the complete anonymity of respondents. Questionnaires were shared with the students in their various classrooms during the class period. We explained to them how the questionnaires were to be filled. Each student used a maximum of 20 minutes to complete the questionnaire.

### 3.6 Data analysis techniques

The data obtained from the study were checked for accuracy, utility, and completeness. The data were coded and analyzed using Microsoft excel and the results were presented in tables or figures.

### 3.7 Ethical consideration

An introductory letter was obtained from the College before we conducted the study. The respondents were well informed about the purpose of the study and their consent was sought. Respondents were assured of anonymity and confidentiality by not providing any form of identification on the questionnaire. However, identification codes were used to represent the

respondent according to their chronologic entry into the study. Respondents were allowed to participate and withdraw from the study voluntarily at any time without any penalty.

### 3.8 Limitation of the study

The limitations to this study were, the limited time with which we had to complete the study and the smaller sample size that was chosen for the study. Because the sample size was small, we could not generalize the study findings.

# CHAPTER FOUR

# DATA ANALYSIS AND RESULTS

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

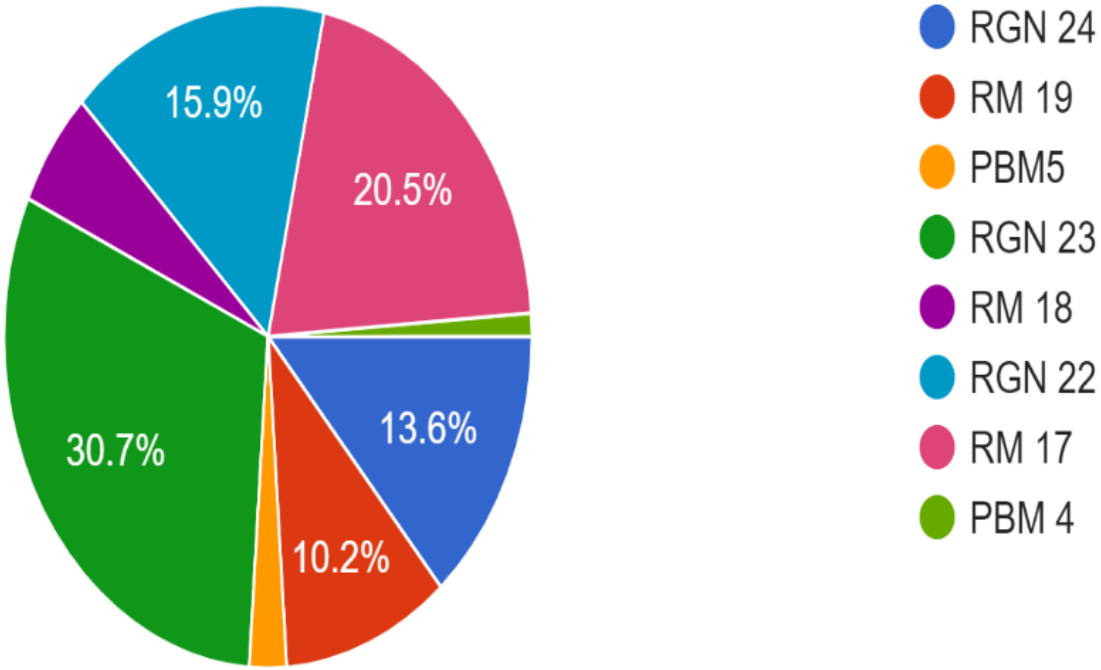


**Figure 4. 1: Class of respondents**

Figure 4.1 depicts that most 27 (30.7%) of the respondents were in RGN23 class followed by RM17 18 (20.5%), RGN22 14 (15.9%), RGN24 12 (13.6%), RM19 9 (10.2%), RM18 5 (5.7%) and PBM5 2 (2.3%).

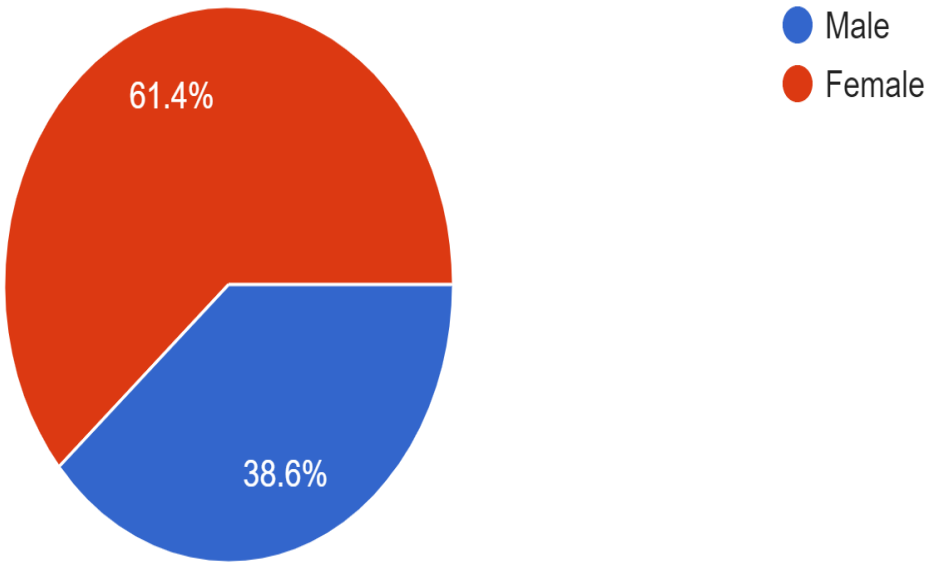


**Figure 4. 2: Gender of respondents**

Most of the respondents were females 54 (61.4%) and males were only 34 (38.6%).

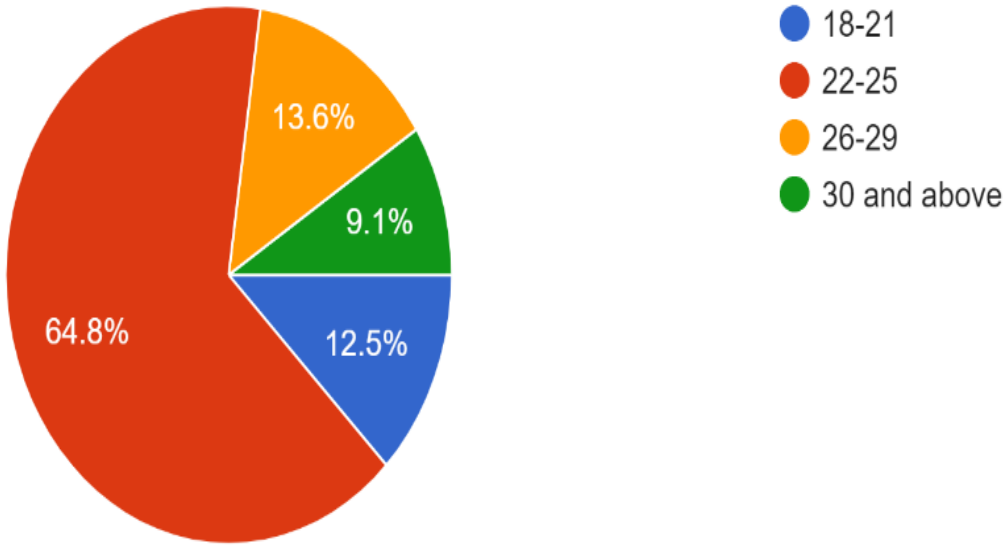


**Figure 4. 3: Age of respondents**

Most 57 (64.8%) of the respondents were aged 22-25 years followed by 26-29 years 12 (13.6%), 18-21 years 11(12.5%) and 30 years and above 8 (9.1%).

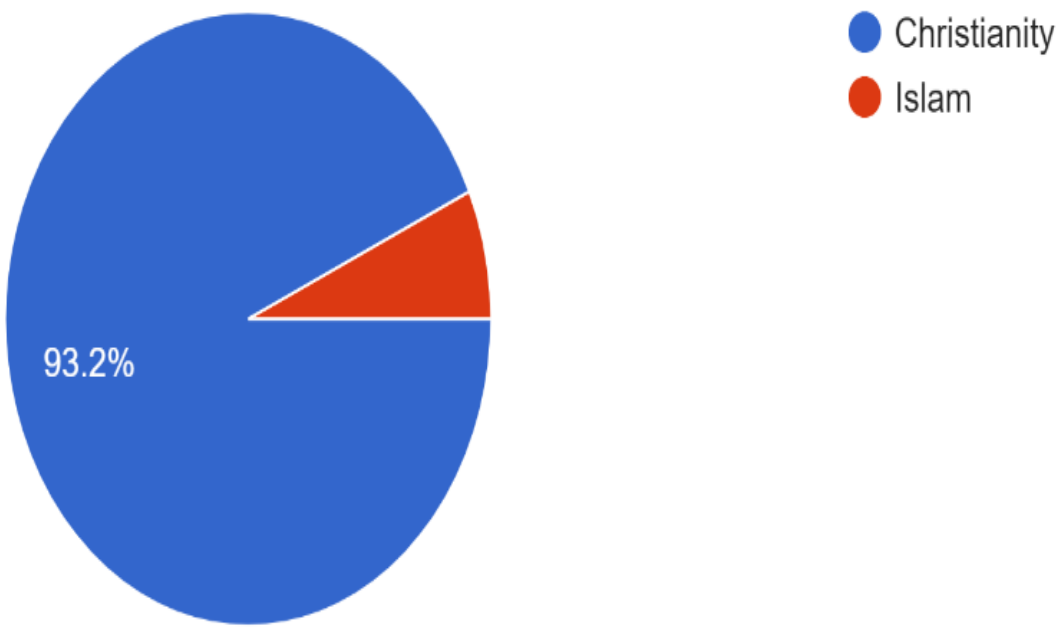


**Figure 4. 4: Religion of respondents**

Majority 82 (93.2%) of the respondents were Christians with only 6 (6.8%) been Muslims.

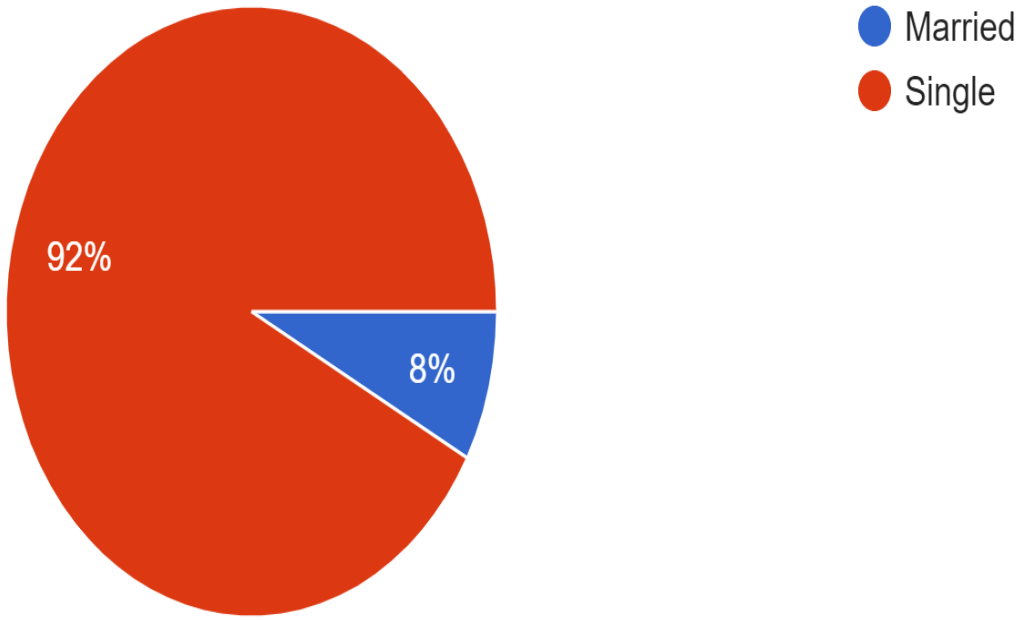


**Figure 4. 5: Marital status of respondents**

Figure 4.5 illustrates that majority 81 (92%) of the respondents were single.

### 4.2 Knowledge on COVID-19 Vaccination

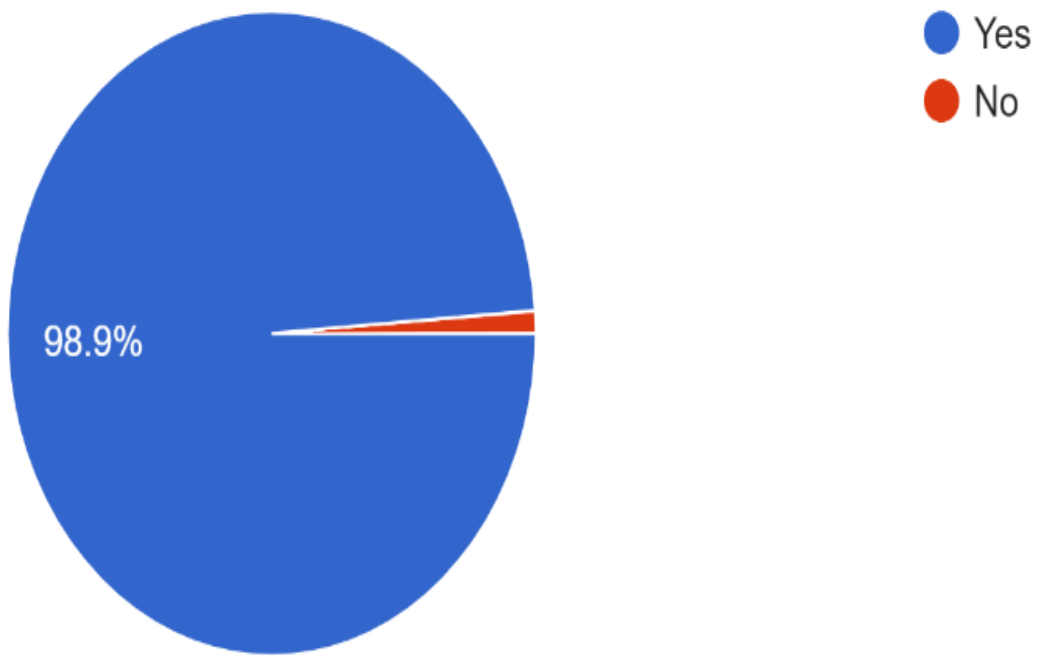


**Figure 4. 6: Ever heard of COVID-19 vaccination**

Almost all 87 (98.9%) the respondents indicated they have heard of COVID-19 vaccination.

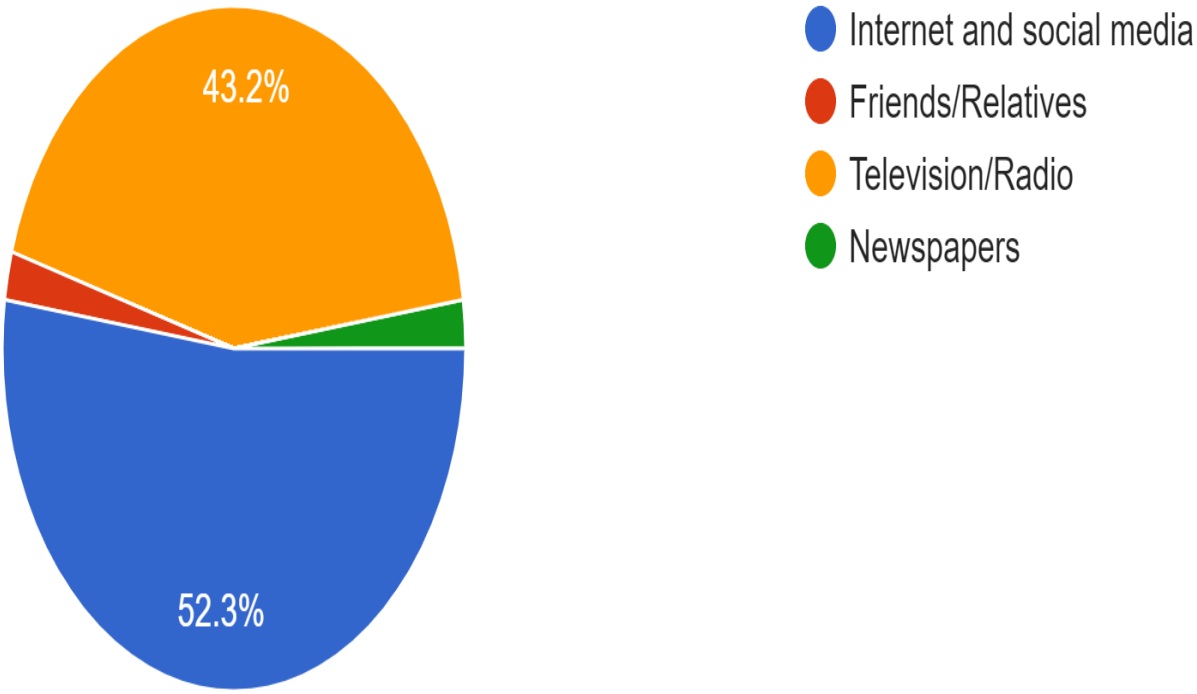


**Figure 4. 7: Main source of information**

Over half 46 (52.3%) of the respondents indicated that their main source of information was the internet and social media followed by television/radio 38 (43.2%), newspapers 2 (2.3%) and friends and relatives 2 (2.3%).

**Table 4. 1: Respondents knowledge on COVID-19 vaccination**

| **Statement** | | **Agree** | **Disagree** | **Don't know** |
|---|---|---|---|---|
| Covid 19 vaccines are effective | n | 71 | 11 | 6 |
| | % | 80.7 | 12.5 | 6.8 |
| People being vaccinated can start to do normal activities | n | 73 | 13 | 2 |
| | % | 83 | 14.8 | 2.3 |
| Covid 19 vaccines can cause side effects | n | 72 | 9 | 7 |
| | % | 81.8 | 10.2 | 8 |
| It is dangerous to give overdose of COVID 19 vaccine | n | 79 | 3 | 6 |
| | % | 89.8 | 3.4 | 6.8 |

Table 4.1 depicts respondents knowledge on COVID-19 vaccination, majority (80.7%) of the respondents agreed that COVID 19 vaccines are effective, majority (83%) of the respondents agreed that people being vaccinated can start to do normal activities, majority (81.8%) of the respondents agreed that COVID 19 vaccines can cause side effects and majority (81.8%) of the respondents agreed that it is dangerous to give overdose of COVID 19 vaccine.

### 4.3 Attitude Toward COVID-19 Vaccination

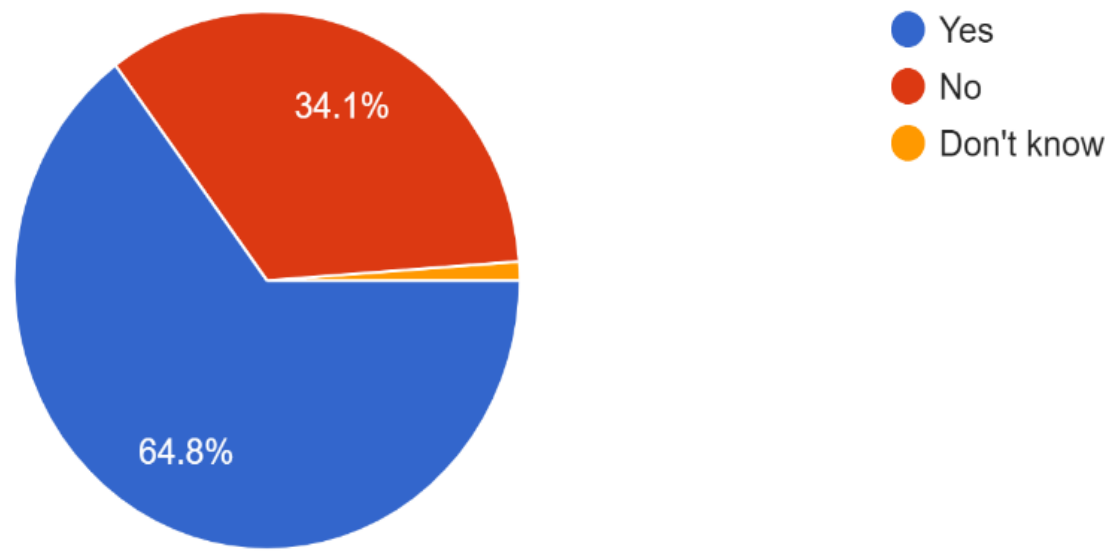


**Figure 4. 8: Do you fear COVID-19 vaccines?**

Majority 54 (64.8%) of the respondents said they feared COVID-19 vaccines followed by 34.1% who said they did not fear the vaccines.

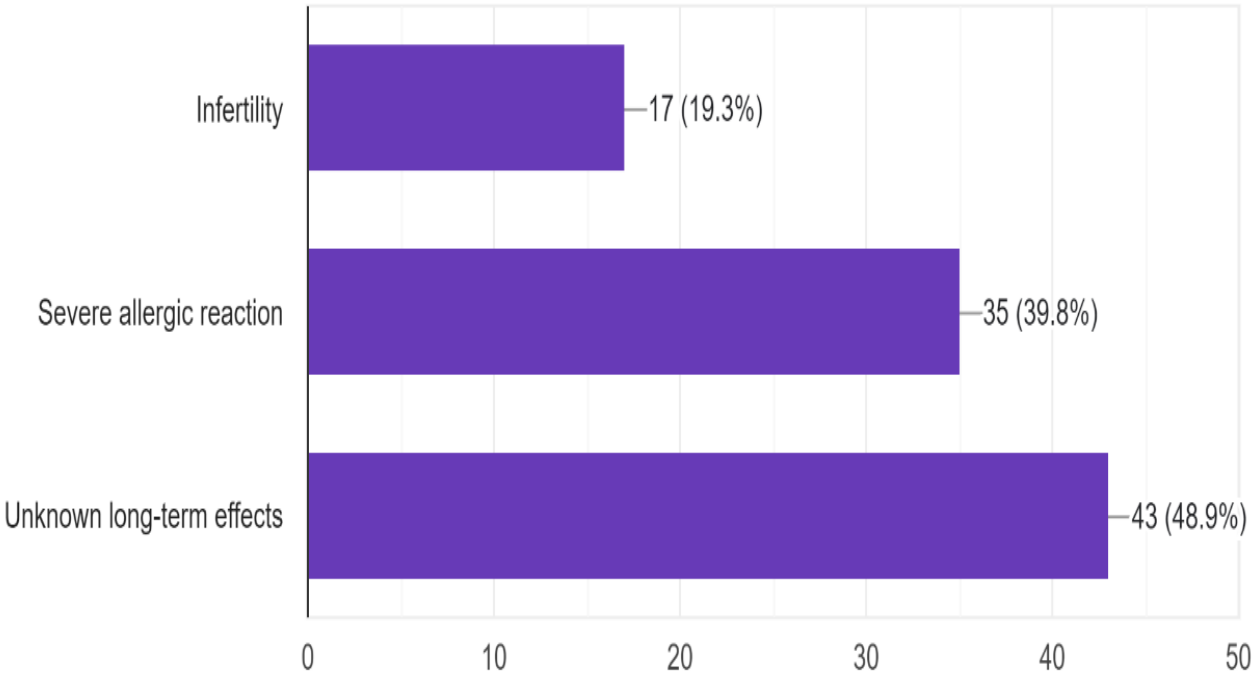


**Figure 4. 9: Respondents reasons for the fear of COVID-19 vaccines**

Figure 4.9 shows that the most reason for fearing COVID-19 vaccines was unknown long-term effects (48.9%) followed by severe allergic reaction (39.8%) and infertility (19.3%).

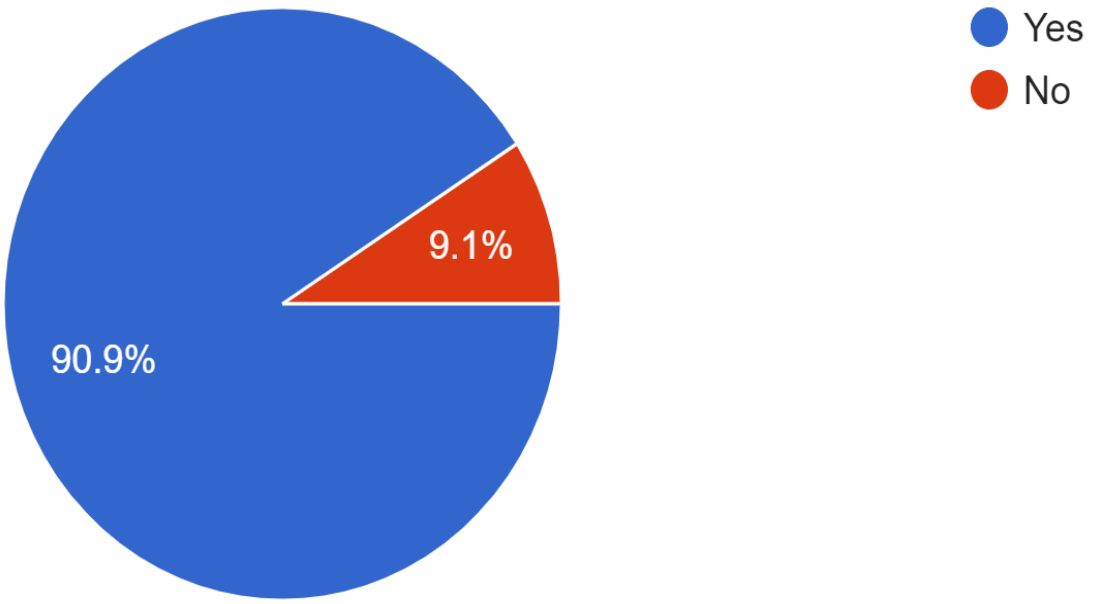


**Figure 4. 10: Have you vaccinated for COVID-19?**

Most 80 (90.9%) of the respondents indicated they have vaccinated against COVID-19 with only 8 (9.1%) who had not vaccinated.

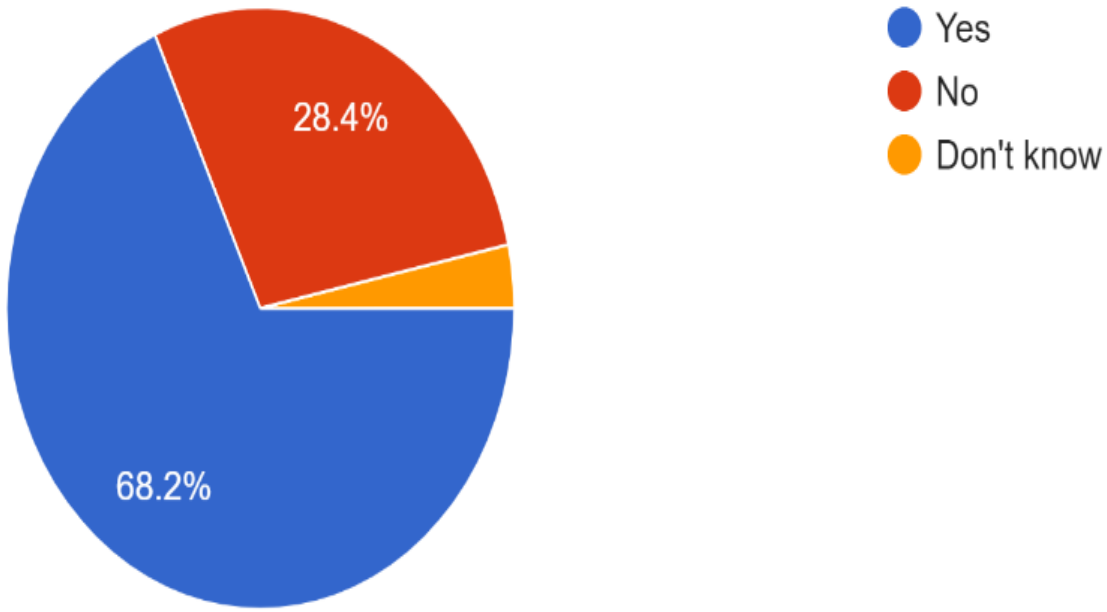


**Figure 4. 11: Are you planning to be vaccinated for COVID-19?**

Most 60 (68.2%) of the respondents indicated they have plans of been vaccinated for COVID-19.

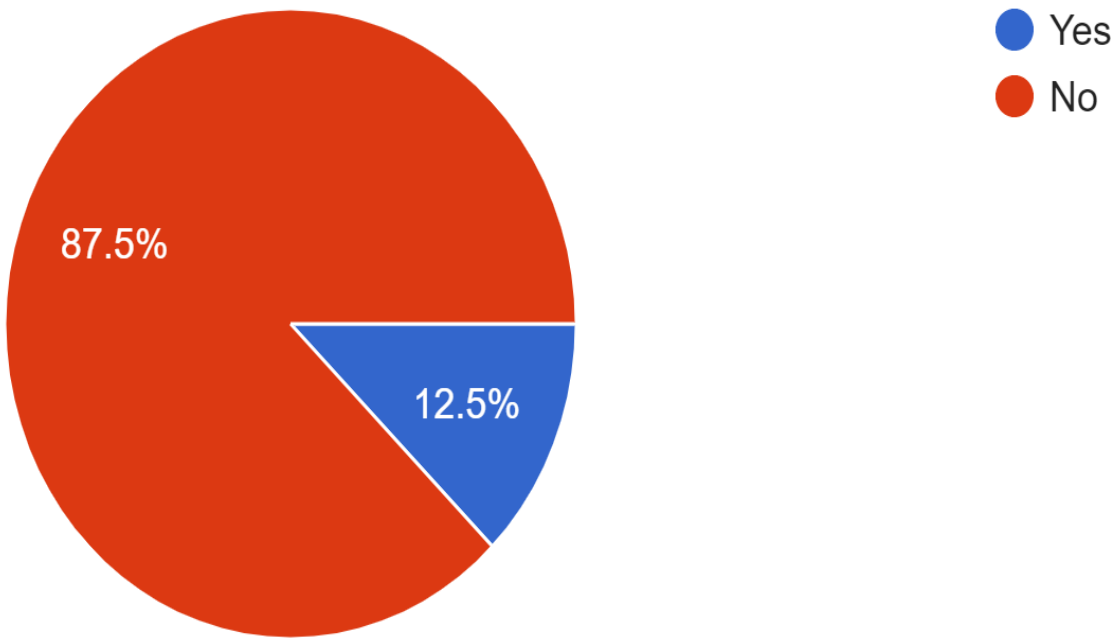


**Figure 4. 12**: **Respondents on whether only God/Allah can prevent COVID-19?**

Majority 77 (87.5%) of the respondents disagreed that they will refuse to get vaccinated because only God/Allah can prevent COVID-19.

### 4.4 Perception Towards the Practice of COVID-19 Vaccination

**Table 4. 2: Respondents perception towards the practice of COVID-19 vaccination**

| Statement | | Yes | No | Don't know |
|---|---|---|---|---|
| Do you think you are at high risk of becoming infected with COVID-19? | n | 38 | 43 | 7 |
| | % | 43.2 | 48.9 | 8 |
| Do you think that you could get infected with COVID-19 through vaccination? | n | 24 | 54 | 10 |
| | % | 27.3 | 61.4 | 11.4 |
| Is it possible to reduce and control the incidence of covid-19 without vaccination? | n | 50 | 34 | 4 |
| | % | 56.8 | 38.6 | 4.5 |
| Do most of my colleagues appear to think that getting vaccinated is a good idea? | n | 65 | 18 | 5 |
| | % | 73.9 | 20.5 | 5.7 |
| Do you think that the COVID-19 vaccine can worsen any health conditions you have? | n | 44 | 32 | 12 |
| | % | 50 | 36.4 | 13.6 |
| Do you believe that you can get proper medical care if you contract COVID-19? | n | 62 | 19 | 7 |
| | % | 70.5 | 21.6 | 8 |
| Do you think that the development of COVID-19 vaccines was properly carried out to make them safe? | n | 66 | 13 | 9 |
| | % | 75 | 14.8 | 10.2 |

Table 4.2 is an illustration of respondents perception towards the practice of COVID-19 vaccination, Nearly fifty percent 43 (48.9%) of the respondents said they are not at high risk of becoming infected with COVID-19 whiles 43.2% said they were at risk, most 54 (61.4%)

said they could not get infected with COVID-19 through vaccination whiles 27.3% said they would and 11.4% didn't know, over half 50 (56.8%) of the respondents indicated that it is possible to reduce and control the incidence of covid-19 without vaccination whiles few 34 (38.6%) said it is not possible to reduce and control the incidence of covid-19 without vaccination, majority 65 (73.9%) of the respondents said most of their colleagues appear to think that getting vaccinated is a good idea, half 44 (50%) of the respondents indicated that COVID-19 vaccine can worsen any health conditions you have, majority 62 (70.5%) of the respondents believed that they could get proper medical care if they contract COVID-19 and majority 66 (75%) of the respondents indicated that the development of COVID-19 vaccines was properly carried out to make them safe.

# CHAPTER FIVE

# DISCUSSION, CONCLUSIONS, RECOMMENDATIONS

## 5.0 Introduction

In this chapter, the data analysed in chapter four were interpreted based on scientific evidence. The findings are briefly discussed with references to support the study.

## 5.1 Discussions

### 5.1.1 Knowledge on COVID-19 Vaccination

Almost all 87 (98.9%) the respondents indicated they have heard of COVID-19 vaccination. Likewise, Islam et al. (2021) found that 89.9% of the study participants knew about the COVID-19 vaccine.

The current study found that over half 46 (52.3%) of the respondents indicated that their main source of information was the internet and social media followed by television/radio 38 (43.2%), newspapers 2 (2.3%) and friends and relatives 2 (2.3%). Similarly, Islam et al. (2021) found that participants' source of knowledge about the COVID-19 vaccine, which is mainly from mass media (53.0%), social media (45.0%), the internet (38.7%), Newspaper (15.4%), family members/relatives (8.0%) and friends/neighbors (7.5%). However, it contradicts the study findings of Elhadi et al. (2021), they found that the main sources of information on COVID-19 pandemic by medical students were World Health Organization (35.8%), National Center for Disease Control (22%), news and media (7.4%), internet and social media (31.3%).

In the current study majority of the respondents agreed that COVID 19 vaccines are effective (80.7%), people being vaccinated can start to do normal activities (83%), COVID 19 vaccines can cause side effects (81.8%) and it is dangerous to give overdose of COVID 19 vaccine

(81.8%). Similarly, Islam et al. (2021) found that 52.2% knew about the effectives of the vaccine. 64.9% said it is dangerous to use overdose of the vaccine, 37.0% said the vaccine does cause allergic reactions. Additionally, Rahman et al. (2021) found that 66% of respondents said COVID-19 vaccines are effective to prevent COVID-19 infection, vaccine will also help keep from getting seriously ill from covid-19 (70.94%), people being vaccinated can start to do normal activities (72.47%), vaccine has the potential for some side effects (87.18%), side effects due to the vaccination, normally go away in a few days (74.35%) and the vaccine can create long-term physical problems (61.06%).

### 5.1.2 Attitude Toward COVID-19 Vaccination

The current study found that majority 54 (64.8%) of the respondents said they feared COVID-19 vaccines. Equally, a study conducted by Adane et al. (2022) in Ethiopia found that 56.4% feared the COVID-19 vaccines.

Most 80 (90.9%) of the respondents indicated they have vaccinated against COVID-19 with only 8 (9.1%) who had not vaccinated. Equally, Rahman et al. (2021) opined that fear of adverse consequences (86.67%) was the most common reason for hesitation, followed by insufficient information (73.85%).

In the current study most 60 (68.2%) of the respondents indicated they have plans of been vaccinated for COVID-19. Contrastingly, Bucchi et al. (2022) found that regarding attitudes towards vaccines the COVID-19 vaccination campaign in Italy only 36% of Italians express their willingness to get vaccinated as soon as possible.

In the current study only (12.5%) of the respondents agreed that they will refuse to get vaccinated because only God/Allah can prevent COVID-19. Similarly, Adane et al. (2022) found that only 34.9% refused to get vaccinated because only God/Allah can prevent COVID-19.

### 5.1.3 Perception Towards the Practice of COVID-19 Vaccination

The current study found that nearly fifty percent (44% %) of the respondents said they are at high risk of becoming infected with COVID-19 and half (50%) of the respondents indicated that COVID-19 vaccine can worsen any health conditions you have. Similarly, a study conducted by Adane et al. (2022) in Ethiopia found -quarters (292, 74.5%) of the HCWs considered themselves to be at high risk of becoming infected with COVID-19 and 46.9% thought that the COVID-19 vaccine can worsen any health conditions they had.

In the current study most (62%) said they could not get infected with COVID-19 through vaccination and over half 50 (56%) of the respondents indicated that it is possible to reduce and control the incidence of covid-19 without vaccination. Contrary, a study conducted by Adane et al. (2022) in Ethiopia found 39.5% of them thought that they could get infected with COVID-19 through vaccination and (44.1%) of the respondents thought that it may not be possible to reduce the incidence of COVID-19 without vaccination.

The present study found that majority (74%) of the respondents indicated that the development of COVID-19 vaccines was properly carried out to make them safe. Correspondingly, Biswas et al. (2021) found that 57.8% agreed when asked if they thought that the COVID-19 vaccine is safe and effective.

## 5.2 Conclusions

Respondents had good knowledge about COVID-19 vaccination. The main source of information form most respondents on COVID-19 vaccination was the internet and social media. Attitude towards COVID-19 Vaccination was pleasing as most of the respondents had vaccinated against COVID-19. Perception towards the practice of COVID-19 vaccination was satisfactory as majority of the respondents believed that they could get proper medical care if they contract COVID-19.

### 5.3 Recommendations

Based on the findings of the study, the following recommendations have been made.

1. The vaccine hesitancy is a complex phenomenon that is driven by individuals' perceptions of safety, and efficiency of the vaccines. The government of Ghana must continue to educate the public and communities that vaccines are safe, that they are effective and that they are still required even after a COVID-19 infection.
2. To effectively control future outbreaks of COVID-19, there is a need for the Ministry of Health to implement public sensitization programs to improve the understanding of COVID-19 and address COVID-19-related myths and misconceptions, especially among healthcare students.

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## APPENDICES

## QUESTIONNAIRE

Dear Respondent,

We are students of HFNMTC-Berekum conducting a research on ‘‘Knowledge, Attitude and Acceptance of Covid-19 Vaccines Among Students of Holy Family Nursing and Midwifery, Training College, Berekum”. Kindly answer the under listed questions by ticking (√**)** the appropriate box or write in the spaces provided. Any information provided is confidential. Your opinion is neither considered right nor wrong. You can choose to withdraw your participation at any time. It will take you approximately 20 minutes to answer the questionnaire

Thank you.

**PLEASE TICK [√] THE APPROPRIATE BOX WHERE APPLICABLE.**

**SECTION A: DEMOGRAPHIC DATA**

1. Gender: (a) Male [] (b) Female []
2. Age: (a) 18 – 22 years [] (b) 23 – 27 years [] (c) 28years and above []
3. Marital status: (a) Married [] (b) Single [] (c) Divorced []
4. Ethnicity: (a) Akan [] (b) Ewe [] (c) others specify …….

5. Religious background: (a) Christianity [] (b) Islam [] (c) Traditionalist []
6. Program: (a) RGN [] (b) RM [] (c) PBM []

**SECTION B: KNOWLEDGE OF COVID-19 VACCINES**

7. I know about the COVID-19 vaccine?

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

8. Everyone including children can receive COVID-19 vaccination.

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

9. COVID-19 vaccines do not have side effects.

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

10. Indicate the vaccine type (s) you know off; *multiple selection allowed*;

    a. Pfizer-BioNTech []
    b. Oxford-Astra Zeneca []
    c. Sputnik V []
    d. Moderna []
    e. Sinovac []
    f. Novavax (NVX-CoV2373) []
    g. Sinopharm []
    h. Johnson and Johnson's Janssen []
    i. None []
    j. Other specify; …….

11. Source of information on COVID-19 vaccine; *multiple selection allowed*;

    a. Social media []
    b. Internet []
    c. Health care providers []
    d. Family members []

e. Others specify; …….

**SECTION C: ATTITUDE TOWARDS COVID-19 VACCINATION**

12. My family will allow me to get vaccinated

    a. Agree [] b. Disagree [] c. Not sure []

13. I might be infected with COVID-19 if I do not get vaccinated

    a. Agree [] b. Disagree [] c. Not sure []

14. COVID-19 vaccine must be mandatory for all students before the opening up schools

    a. Agree [] b. Disagree [] c. Not sure []

15. Discovered COVID-19 vaccine is safe

    a. Agree [] b. Disagree [] c. Not sure []

16. COVID-19 cannot be controlled without vaccination

    a. Agree [] b. Disagree [] c. Not sure []

17. Would you encourage your family/friends/relatives to get vaccinated?

    a. Agree [] b. Disagree [] c. Not sure []

**SECTION D: ACCEPTANCE OF COVID-19 VACCINES**

18. Have you been vaccinated against COVID-19?

    a. Yes [] b. No []

19. If no, do you have any intention of receiving the vaccine?

    a. Yes [] b. No []

20. In your opinion, which of the following factors do you think is influencing your acceptance of the vaccine;

    a. Waiting for better clinical and human test results []

    b. Believe in physiological immunity []

    c. Due to potential side effect []

    d. Do not need any vaccine []

e. Anxious about the vaccine's safety and efficacy []

f. Others specify: ……

NATIONAL CATHOLIC HEALTH SERVICE (DIOCESE OF SUNYANI)

# HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE

## BEREKUM


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Our Ref. ..... HFNMTC/GC/011/100722

Your Ref. .....

Date ..... October 14, 2022

Ernestina Mensah
Holy Family NMTC
Post Office Box 21
Berekum

Dear Ms. Mensah

**PERMISSION TO CONDUCT RESEARCH**

With reference to your Memorandum dated October 14, 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 Perception about COVID-19 Vaccines among Nursing and Midwifery Students of the Holy Family Nursing and Midwifery Training College, Berekum**".

1. Ayamba Aisha
2. Prade Anita
3. Bawa Vida

Thank you.

Yours faithfully

ACADEMIC CO-ORDINATOR-NURSING
HOLY FAMILY NURSING & MIDWIFERY
TRAINING COLLEGE BEREKUM

Rev. Sr. Margaret Afrifa
**Academic Coordinator for Nursing**
For: Principal