UNIVERSITY OF LUSAKA

SCHOOL OF MEDICINE AND HEALTH SCIENCES

Assessment of knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka

BY

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A research dissertation submitted to the University of Lusaka in partial fulfilment of the requirements of a Degree in Bachelor of Science in Public Health

DECLARATION

School of Health Sciences
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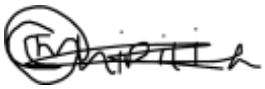
BSPH-421-DISSERTATION

DISSERTATION CLEARANCE AND DECLARATION

DECLARATION

Name of student and ID: Mulenga Cecilia Chipili Bsph19115152

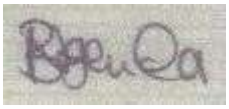
I declare that this proposal is my creative work and to the best of my acquaintance has not been presented for a degree in any other institution.

Signature:  **Date 22nd may 2023**

Supervisor Name: Brown Ngenda

This dissertation has been submitted with my approval as a University of Lusaka (UNILUS) supervisor.

School of Medicine and Health Sciences, Department of Public Health



Signature:_____ **Date: 16th May, 2023**

DEDICATION

I would like to dedicate my dissertation to FIVE people in particular.

I will start with the strongest, most supportive and loving mother Threaza Chipili, she has seen me through the darkest days of my life, she has been so supportive from the time I applied at the University of Lusaka till date, paid my fees, bought my grocery paid my rent, she did it all by herself I know it was hard but never did she show me just how hard it was nor did she complain, when I felt like giving up she reminded me of my strengths, how far I have come in life and what am yet to achieve, she believed in me even when I did not believe in myself, she is my SUPPER HERO my god on earth.

Secondly I would like to dedicate my dissertation to my late Grandpa Faston Chongo Chipili, he was my biggest cheerleader, all he ever wanted was to see me succeed in life and to him getting my degree was a step closer to my success, he was so excited when I got admission into the university, he would randomly call me to encourage me and show his love and support, Grandpa your little girl is finger tips away from graduating.

Thirdly I would like to dedicate my dissertation to my grandma Cecilia Kaitano (Mrs Chipili) my prayer warrior, her prayers have gotten me this far, without her positive influence and words of advice I would not be where I am today.

Fourthly I would like to dedicate my dissertation to my other mum, Chalwe Cecilia Chipili (Mrs Kampamba) she is an angel in Human form, she has always been there pushing me to work harder, gave me a listening ear, advised me and supported me, even when the odds were stuck against me, she was always there in my corner cheering me on, her unconditional love and support played a very important role throughout my academic journey.

Last but not the least I would like to dedicate my dissertation to my young sister Nyawa Sara Zulu, she is the reason I am where I am today, I push myself to do better because I know I have someone looking up to me, she is always there to put a smile on my face, she is always rooting for me and i want to achieve so much and give her the life she deserves, and getting my degree at this prestigious university is my first step.

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ABSTRACT

Lack of trust in recommended vaccines and providers, complacency regarding the value of immunisation, and perceptions of how simple it is to obtain can all have an impact. All of these are influenced by the environment (such as culture or history), as well as by the person and the vaccine in question. The aim of the study was to assess the knowledge, perceptions, and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka. The study employed a qualitative exploratory research design method using a purposive sampling approach which sampled 10 respondents. In-depth interviews were conducted to gather data. Study data were analysed manually using the thematic analysis technique. A total of 11 in-depth face-face interviews were conducted, between March and April 2023. Twelve overarching themes were identified: (1) Protection from illness and spread of the virus, (2) Peace of mind and social engagement, (3) Concerns about side effects, (4) Trust in science and evidence, (5) Personal choice, (6) Protection from illness and spread of the virus, (7) Peace of mind and social engagement, (8) Concerns about side effects, (9) Trust in science and evidence, (10) Personal choice, (11) Trust and Confidence, (12) Skepticism and Uncertainty. Generally, Students are knowledgeable on the types of vaccines used in Zambia and their importance to their health. They are also likely to get information from trusted sources. However, they are skeptical when it comes to the situation in Zambia. This study provides an initial evidence base of students' knowledge, perceptions, and attitudes towards COVID-19 vaccines. The study emphasises that sufficient knowledge and awareness about COVID-19, trust in government measures, and adherence to safety measures, are necessary in stopping the spread of COVID-19 virus.

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LIST OF ACRONYMS

CSO: Central Statistical Office of Zambia,

HPV: human papillomavirus

MoHZ: Ministry of Health of Zambia

PHEOC: Public Health Emergency Operations Center

WHO: World Health Organisation

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CHAPTER ONE

1.0 Background

Late in December of 2019 the COVID-19 epidemic began (Rothan and Byrareddy, 2020). To stop the spread of SARS-COV-2 in the absence of COVID-19 vaccinations, countries implemented public health measures (Bedford et al., 2020). The WHO Strategic Advisory Group of Experts on Immunization (MACDonald, 2015; WHO, 2014) defined COVID-19 vaccine hesitancy as the delay or unwillingness to take or avoid vaccines, despite the availability of vaccine services. Additional advances, however, presented new challenges.

Zambia reported its first case of COVID-19 on March 18, 2020, which marked the beginning of the first wave in Zambia (Kasanga, 2020). After the first two recorded cases, a rise in community transmission was seen. On March 20, 2020, the Republic of Zambia's government enacted a partial lockdown, which had the effect of closing schools, colleges, and institutions because of worries that the pandemic would worsen (Mwila, 2021). This was implemented as a strategy to stop the pandemic. Sahu and Akour in 2020 Similar actions were claimed to have been taken in other nations. Due to schools, colleges, and universities closing, learning had to be done through online channels.

Zambia appears to have a poor immunisation rate despite having access to vaccinations everywhere (Babaniyi, 2012; Kumar, 2016). Lack of trust in recommended vaccines and providers, complacency regarding the value of immunisation, and perceptions of how simple it is to obtain can all have an impact (MacDonald, 2015). All of these are influenced by the environment (such as culture or history), as well as by the person and the vaccine in question. Studies that closely assess people's knowledge of and views about recommended vaccines must be conducted because people's perceptions of each vaccine regularly vary (Laraon, 2014). To this effect, this research will focus on the assessment of knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka.

1.1 STATEMENT OF THE PROBLEM

According to Evrony (2017), research into vaccine hesitancy has exploded due to rising worries about anti-vaccination sentiment in various countries. The activity and connections of members in anti-vaccine groups, the top Google search results, comments left on various social media sites, and many other topics have all been the subject of studies using a variety of approaches and with a range of purposes (Ma J, 2019).

Anti-vaccine conspiracy theories have been demonstrated to reduce vaccination intentions (Hornsey, 2018). The variables that affect vaccination reluctance in Zambia are not well understood. In contrast, a qualitative study expressed the worries of healthcare professionals about the influence of male and elders' consent, mistrust of western medicine, and low education as barriers to vaccination uptake in urban and peri-urban settings, as well as the perceptions of acceptance and the distance to health services (Liu, 2012). High acceptability among women was found in a cross-sectional study on the anticipated reaction to the introduction of the human papillomavirus (HPV) vaccine (Liu, 2012).).

Stecula and associates in 2020, it was discovered that those who had access to information on the COVID-19 vaccine on social media were more likely to be uninformed and vaccine-hesitant. On the other hand, rumours and conspiracies fuel opposition to the COVID-19 vaccination. The COVID-19 vaccination is expected to prevent major disease and death while still providing very rudimentary protection against emerging viral strains. As a result, this study looked into the assessment of knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka

1.2 Justification of the study

Zambia stepped up its efforts to fight disease and prepare for and handle emergencies. The COVID 19 pandemic led to the establishment of the (PHEOC). This study's goal is to assess the behavioural variables that influence students' desire to accept the COVID-19 vaccine. In order to stop the COVID-19 virus from spreading, authorities will be further alerted by the study's findings. This will allow for adjustments to be made to their methods of reaching people in rural and urban areas.

1.3 General objective: To assess the knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka

1.4 Specific objectives

1. To explore knowledge levels of COVID-19 vaccines among students.
2. To determine the perceptions that students have on COVID-19 vaccines.
3. To examine the attitudes that the students have towards Covid-19 vaccines as a prevention method.

1.5 Research questions

1. What are the knowledge levels of COVID 19 vaccines among students?
2. What perceptions do students have on COVID-19 vaccines?
3. What attitudes do students have towards Covid-19 vaccines as a prevention method?

CHAPTER TWO
LITERATURE REVIEW

2.0 INTRODUCTION

In order to address the research topic, advance knowledge, and familiarize the researcher with the field, this chapter will include an assessment of pertinent materials and theories that will be used throughout the project. An empirical analysis, a conceptual and theoretical framework, and a list of research gaps will also be included in this chapter.

2.1 GLOBAL PERSPECTIVE

COVID-19 vaccines have been developed and approved for emergency use by regulatory authorities worldwide, leading to widespread vaccination campaigns. Studies conducted globally have shown that knowledge about COVID-19 vaccines among students is generally high. For instance, a study conducted in the United States reported that 78% of students had adequate knowledge about COVID-19 vaccines (Hogue et al., 2021). Similarly, a study conducted in China found that more than 90% of students had sufficient knowledge about COVID-19 vaccines (Shi et al., 2021). A cross-sectional study conducted in Saudi Arabia among undergraduate students, it was found that 87% of the participants had good knowledge about the COVID-19 vaccine (Alghamdi et al., 2021). Similarly, a study conducted in Turkey reported that 86.9% of the students had a good knowledge of COVID-19 vaccines (Ceylan et al., 2021). However, a study conducted in Italy among university students showed that only 39.6% had a good knowledge of the COVID-19 vaccine (Mattioli et al., 2021). These studies suggest that knowledge levels of COVID-19 vaccines among students vary across different countries

COVID-19 vaccines have become one of the most critical tools in the fight against the pandemic. Vaccines have been developed and rolled out globally in record time, with various types of vaccines becoming available. The knowledge levels of COVID-19 vaccines globally have been diverse, with some people being well informed about the vaccines' benefits and risks, while others remain skeptical about their efficacy and safety. Studies show that people's knowledge levels on COVID-19 vaccines vary depending on their education levels, income, and access to information. A systematic review conducted by Bhagavathula et al. (2021) showed that the

majority of the population in developing countries lacked knowledge about COVID-19 vaccines, while developed countries had higher knowledge levels.

Studies conducted globally have reported varying perceptions of students towards COVID-19 vaccines. A study conducted in the United States reported that 63% of students had a positive perception of COVID-19 vaccines, while 20% had a negative perception (Hogue et al., 2021). In contrast, a study conducted in India reported that only 34.5% of students had a positive perception of COVID-19 vaccines (Nagpal et al., 2021). These findings suggest that perceptions of COVID-19 vaccines among students vary depending on the context. The perceptions of people on COVID-19 vaccines have been diverse, with some people having positive perceptions while others remain skeptical. The positive perceptions of the COVID-19 vaccine are attributed to its effectiveness in preventing severe illness and death from COVID-19, while the negative perceptions are associated with concerns about the vaccine's safety and side effects.

A study conducted in the United States showed that the majority of students perceived the COVID-19 vaccine as important in controlling the pandemic (Williams et al., 2021). Similarly, a study conducted in Malaysia reported that most students had a positive perception of COVID-19 vaccines (Abdullah et al., 2021). However, a study conducted in Italy showed that students had mixed perceptions about the COVID-19 vaccine (Mattioli et al., 2021). A study conducted by Lazarus et al. (2021) in Europe showed that 68% of respondents had a positive perception of the COVID-19 vaccine, while 13% had negative perceptions. The study also revealed that women, young people, and those with lower education levels had higher negative perceptions of the vaccine.

The attitudes of people towards COVID-19 vaccines as a prevention method have been critical in determining the vaccine's uptake and effectiveness in controlling the pandemic. Studies show that attitudes towards the COVID-19 vaccine vary depending on the perceived risk of the disease, vaccine safety and efficacy, and access to information. A study conducted by Wang et al. (2021) showed that the majority of respondents had a positive attitude toward the COVID-19 vaccine, with concerns about vaccine safety and efficacy being the main barriers to vaccine acceptance. Another study conducted in the United States showed that most students intended to get vaccinated against COVID-19 (Williams et al., 2021). Similarly, a study conducted in

Malaysia reported that most students had a positive attitude toward COVID-19 vaccines (Abdullah et al., 2021).

Attitudes of students toward COVID-19 vaccines as a prevention method are generally positive. Studies conducted globally have reported that a majority of students are willing to get vaccinated to prevent COVID-19. A study conducted in the United States reported that 72% of students were willing to get vaccinated against COVID-19 (Hogue et al., 2021).

2.2 AFRICAN PERSPECTIVE

The African region has been greatly affected by the COVID-19 pandemic, with low vaccine coverage compared to developed countries. According to a survey conducted by the Africa Centers for Disease Control and Prevention (Africa CDC) in 2021, only 3% of the African population had received the COVID-19 vaccine. The study also revealed that the knowledge levels of COVID-19 vaccines were low, with only 59% of respondents being aware of the vaccine's existence. The lack of awareness and knowledge on COVID-19 vaccines in Africa has been attributed to misinformation, limited access to information, and vaccine hesitancy.

In Africa, there is a general lack of information and misinformation about COVID-19 vaccines, leading to vaccine hesitancy among students. A study conducted in Ethiopia reported that only 45% of students had adequate knowledge about COVID-19 vaccines (Gebretsadik et al., 2021). Another study conducted in Nigeria reported that only 39.2% of students had adequate knowledge about COVID-19 vaccines (Oyelade et al., 2021). These findings highlight the need for awareness campaigns and education on COVID-19 vaccines in African countries. A study conducted in Nigeria among undergraduate students showed that only 32.2% had good knowledge about COVID-19 vaccines (Olapegba et al., 2021). Similarly, a study conducted in Ghana reported that only 33.9% of the students had good knowledge of COVID-19 vaccines (Aziato et al., 2021). These studies suggest that knowledge levels of COVID-19 vaccines among students in Africa are relatively low.

In Africa, there is a general perception among students that COVID-19 vaccines are unsafe and ineffective. A study conducted in Ethiopia reported that 59.4% of students believed that COVID-19 vaccines were unsafe (Gebretsadik et al., 2021). Similarly, a study conducted in Nigeria

reported that 55.4% of students believed that COVID-19 vaccines were ineffective (Oyelade et al., 2021). These findings suggest that there is a need for awareness campaigns and education on the safety and efficacy of COVID-19 vaccines in African countries.

In the African region, the perceptions of people on COVID-19 vaccines have been influenced by cultural beliefs, myths, and mistrust in the government's handling of the pandemic. A study conducted by Olorunsaiye et al. (2021) in Nigeria showed that the majority of respondents had negative perceptions of COVID-19 vaccines, with concerns about the vaccine's safety and efficacy being the major reasons for vaccine hesitancy. The study also revealed that the government's lack of transparency in vaccine distribution and administration was a significant barrier to vaccine acceptance.

In the African region, the attitudes towards COVID-19 vaccines as a prevention method have been influenced by cultural beliefs, mistrust in the government, and limited access to information. A study conducted by Fatiregun and Adebowale (2021) in Nigeria showed that the majority of respondents had a positive attitude towards COVID-19 vaccines, with the vaccine's ability to prevent severe illness and death being the main motivator for vaccine acceptance. However, the study also revealed that vaccine hesitancy was prevalent among the population, with concerns about vaccine safety and efficacy being the main barriers to vaccine acceptance.

A study conducted in Nigeria by Akande and colleagues (2021) found that the majority of respondents had heard about the COVID-19 vaccine but had limited knowledge about it. The study also revealed that participants had a positive perception of the vaccine, with many expressing willingness to take it. However, there were concerns about safety and side effects, and a lack of trust in the government's ability to effectively manage the vaccination program. Similar findings were reported in a study conducted in Ghana by Abor and colleagues (2021), which highlighted the need for clear and accurate information dissemination to address vaccine hesitancy and improve vaccine uptake.

2.3 LOCAL PERSPECTIVE

In Zambia, there is limited information available on knowledge levels of COVID-19 vaccines among students. However, a study conducted among healthcare workers in Zambia reported that

only 61% of the participants had adequate knowledge about COVID-19 vaccines (Mulenga et al., 2021). This suggests that there is a need for education on COVID-19 vaccines not only among students but also among the general population in Zambia. In Zambia, the COVID-19 vaccine rollout started in April 2021, targeting high-risk groups such as health workers, the elderly, and people with underlying health conditions. The Ministry of Health in Zambia launched a public awareness campaign to educate the public on the benefits and safety of the COVID-19 vaccine. However, the knowledge levels of the vaccine in Zambia have been relatively low, with vaccine hesitancy being a significant challenge. According to a survey conducted by the Zambia National Public Health Institute (ZNPHI), only 47% of respondents had knowledge of the COVID-19 vaccine. The study also showed that vaccine hesitancy was higher among rural communities, with limited access to information and mistrust in the government's handling of the pandemic.

However, a study conducted among healthcare workers in Zambia showed that 79.7% of the participants had good knowledge about the COVID-19 vaccine (Nkengazong et al., 2021). Although this study was not conducted among students, it provides some insights into the knowledge levels of COVID-19 vaccines in Zambia.

There is limited information available on perceptions of COVID-19 vaccines among students in Zambia. However, a study conducted among healthcare workers in Zambia reported that 71% of the participants had a positive perception of COVID-19 vaccines (Mulenga et al., 2021). This suggests that perceptions of COVID-19 vaccines may vary depending on the population group. In Zambia, the perceptions of people on COVID-19 vaccines have been influenced by cultural beliefs and mistrust in the government's handling of the pandemic. However, a study conducted among healthcare workers in Zambia showed that most participants had a positive perception of the COVID-19 vaccine (Nkengazong et al., 2021).

A study conducted by Mulenga et al. (2021) showed that vaccine perceptions in Zambia were mixed, with some people having positive perceptions while others had negative perceptions. The positive perceptions were mainly attributed to the vaccine's ability to prevent severe illness and death from COVID-19, while the negative perceptions were associated with concerns about the vaccine's safety and side effects. The study also revealed that vaccine hesitancy was higher

among rural communities, with limited access to information and mistrust in the government's handling of the pandemic.

In Zambia, the attitudes towards COVID-19 vaccines as a prevention method have been influenced by cultural beliefs, mistrust in the government, and limited access to information. A study conducted by Mwila et al. (2021) showed that the majority of respondents had a positive attitude toward the COVID-19 vaccine, with the vaccine's ability to prevent severe illness and death being the main motivator for vaccine acceptance. However, the study also revealed that vaccine hesitancy was prevalent among the population, with concerns about vaccine safety and efficacy being the main barriers to vaccine acceptance. The study also showed that vaccine acceptance was higher among urban communities with access to information compared to rural communities with limited access to information.

2.4 Theoretical Framework

2.4.1 The Reasoned Action

The intention to engage in a behaviour is influenced by three determinants with underlying beliefs, per the Reasoned Action Approach (Fishbein and Ajzen, 2010; Ajzen, 2015): attitude, one's (positive/negative) evaluation of the consequences of engaging in a behaviour; and perceived norm, one's perception that significant others might (dis)approve of them for engaging in a behaviour (injunct). The theory relates to the study in a way that, this study is focusing on the aspect of knowledge, perception and attitudes of students and how their reasoning affects the up-take of vaccines.

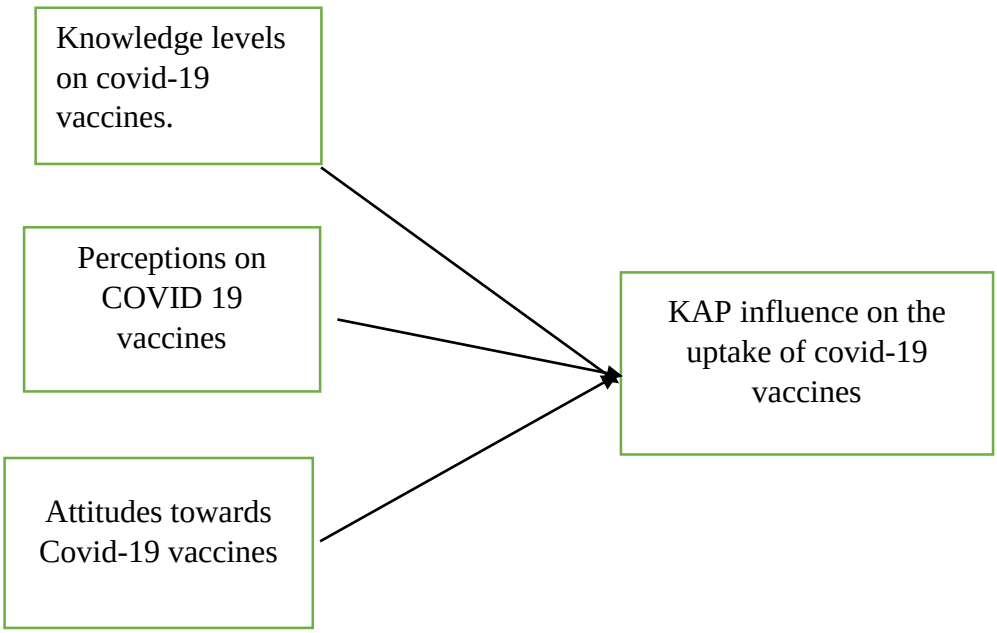
2.4.2 Protection Motivation Theory

(Maddux and Rogers, 1983; Ruiter et al., 2014) state that regarding risk perception, a) threat appraisal, people's perception of the seriousness of a threat (perceived severity), and people's perception of their susceptibility to a threat (perceived susceptibility), and b) coping appraisal, people's expectation that acting will change things (response efficacy), and people's perception of whether they can act are Automaticity and habit-related elements do not appear to be crucial in the case of vaccination intention.

2.5 Conceptual Framework

Conceptual framework on the assessment of knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka.

Figure 2.1 conceptual framework



Source: Author (2022)

Definition of terms

Knowledge: Willingness to receive a COVID-19 vaccine based on available information and decision based on that information.

Perceptions: Willingness to receive a COVID-19 vaccine based of personal views

Attitudes: The primary opinions concerning the COVID 19 vaccines were belief in the vaccines' efficacy, distrust in the healthcare system and the vaccines, worry about vaccine side effects, and preference for natural immunity over immunizations.

CHAPTER THREE:
RESEARCH METHODOLOGY

3.1. Study approach

According to Sekaran (2003), "The research approach referred to the structure of an enquiry undertaken to ensure that the evidence collected enabled the researcher to answer study questions or test hypotheses as unambiguously as possible." Therefore, in this study, a mixed study approach was used. Qualitative methods involved the experiences of people involved; it attempted to understand reasons behind certain behaviors. Qualitative research mainly focused on narratives. While quantitative data was used to collect demographic characteristics of the study participants.

3.2. Study design

According to Kothari and Garg (2014), Research Design is the conceptual structure within which research is conducted. The study employed an exploratory research design.

3.3 Study population

The study was be carried out at the University of Lusaka in the Lusaka District of Lusaka province which has 9,000-students. The University of Lusaka is located around 6.1 kilometres from the CBD. The Zambia Air Force and the Ndeke House of the Ministry of Health border the University of Lusaka.

3.4 Target population

The target population was the University of Lusaka students.

3.5 Sampling Procedure

Purposive sampling technique was used to select the participants.

3.6 Sample size

A maximum of 15 participants was used in the research study. Marshall et al. (2013), states that a sample size for in depth interviews/focus group discussion should not go beyond 15 in a qualitative study.

3.7. Data collection methods

The research process used one method of research instruments. The method that was applied on the study was in- depth interviews. In-depth interviews were used to collect data directly from participants.

3.8 Data analysis

The data that was collected from the interviews was checked for consistency in order to eliminate misleading data. The data that was collected used thematic analysis, which was done by generating themes from the interviews. The process of analysis took place from the first time the data was collected and continued until the research study was completed. Quantitative data on demographic characteristics was analyzed using excel which is a computer software.

3.9 scientific rigor

The researcher will employ credibility and trustworthiness to gather reliable data since the participants must have faith in the researcher in order to collect reliable data.

3.10 Ethical considerations

The Research Ethics Committee at the University of Lusaka approved this study. Prior to the study, participants were asked to consent to the study in full. Study participants were treated with honesty and transparency, and any communication related to the study followed confidentiality rules. The responder was required to participate voluntarily. A person was allowed to withdraw from the study if they did not feel comfortable with it.

CHAPTER FOUR

ANALYSIS OF DATA

4.0. Introduction

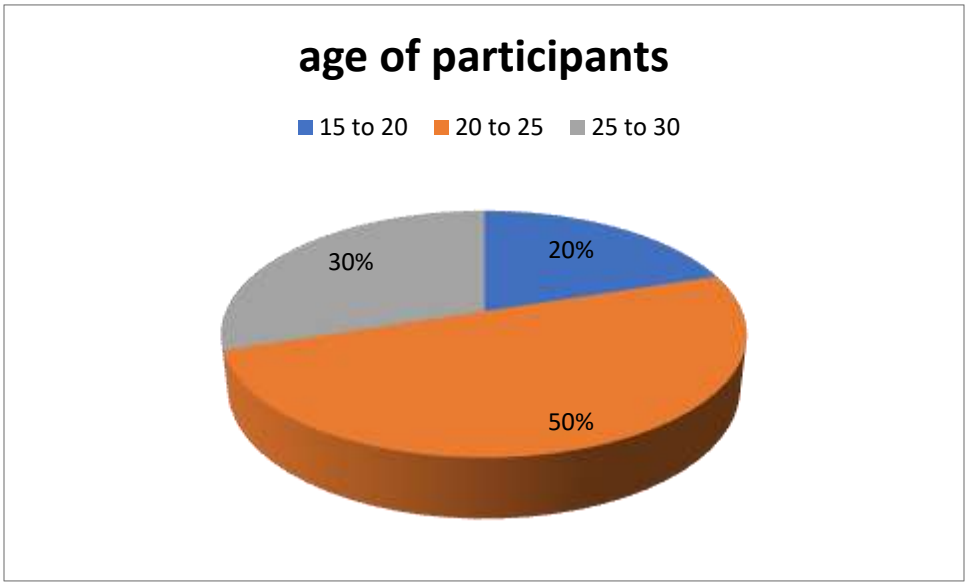
This chapter presented the findings or results of the study which assessed the knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka. It further presented an overview of the results and discussion using thematic analysis of In-depth interviews.

Participants of this research study were described following presentations of the emerging themes obtained from thematic analysis of the data. When displaying the findings of the study, verbatim quotations were used to illustrate the themes. To ensure confidentiality of participants, cryptograms (secret codes) like, Student 01 to Student 10 were used to display the data.

4.1. Demographic characteristics of study participants

4.1.1. Age

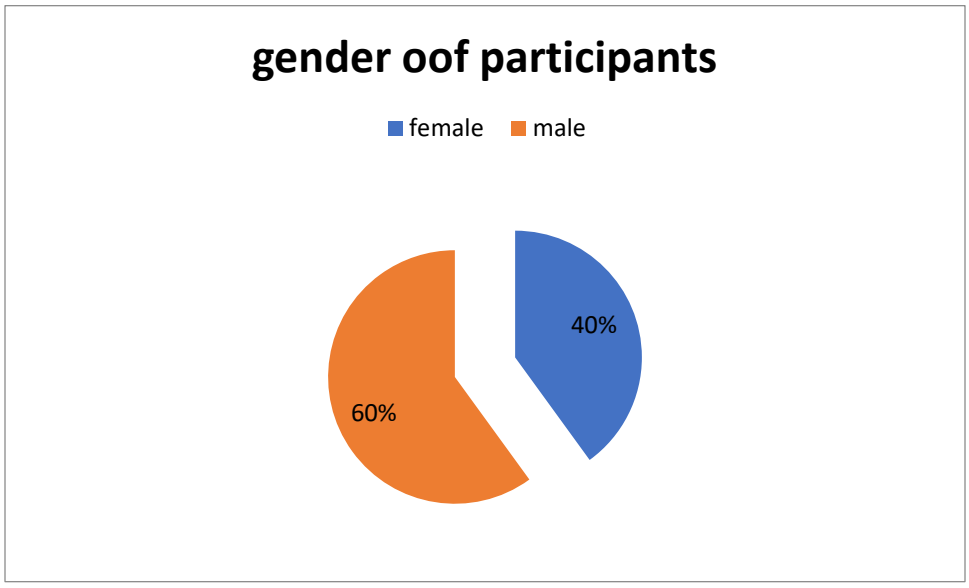
Figure 2; age of participants



As indicated in figure 1 above, the study results showed that the majority of the study participants 50% were in the age range between 20 to 25 followed by 30% between 25 and 30 years during the time of the study. The least 20% were aged between 15 and 20.

4.1.2. Gender of participants

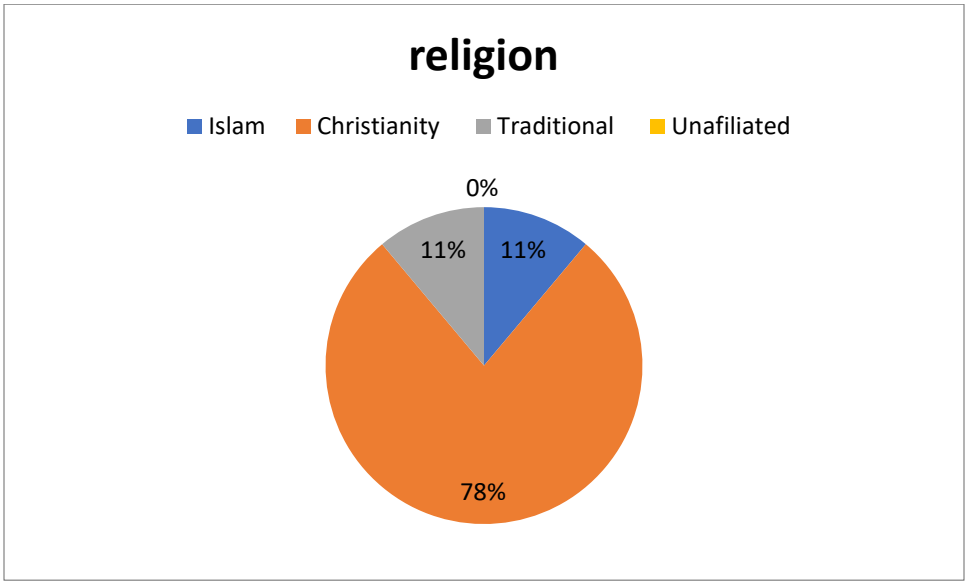
Figure 3: Data on gender of participants



The findings of the study in relation to gender, showed that the majority were male participate represented by 60% and the least 40% represented by 40%. Meaning that the majority of the participants were male participants.

4.1.3. Religion of participants

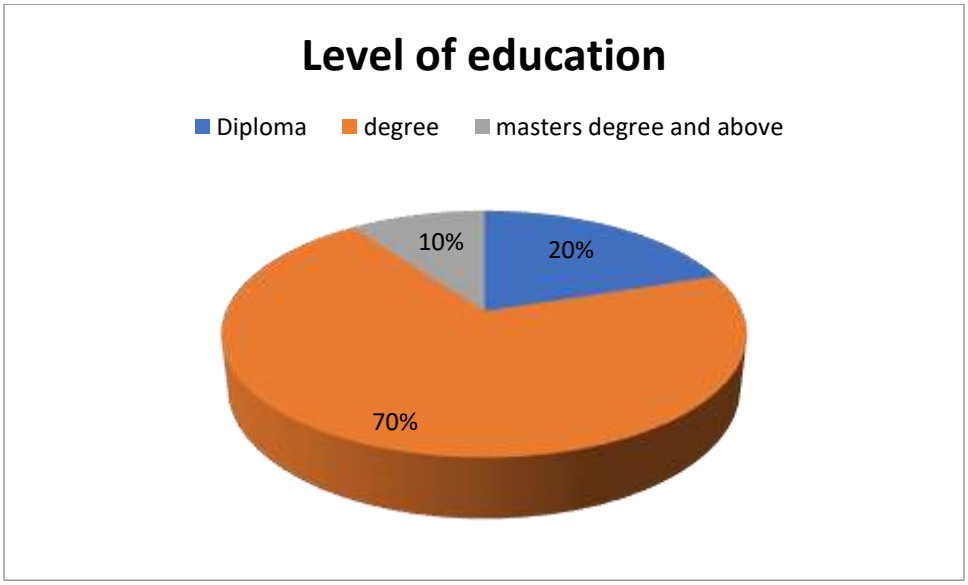
Figure 4: Data on Religion



While health related issues deals with religious believes, the researcher was also interested to understand the religions where the study participants belonged to. As such, the findings of the study indicated that the majority 78% were Christians while 11% were represent by Islam and traditional while no one belonged to unaffiliated.

4.1.3. Education Level of participants

Figure 5: Data on education level



While education level matters, it was also important to understand the education qualifications in relation to the participants. As such, the findings of the study showed that the majority 70% were bachelor's degree holders followed by 20% who were master's degree and above qualifications. The least 10% were diploma holders.

4.2. Presentation of findings – Themes

This section describes the assessment of knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka that emerged from the interviews. The findings of this study were on the themes that arose from the interviews in line with the three specific objectives which were categorized into the following themes as:

i. *Protection from illness and spread of the virus*
ii. *Peace of mind and social engagement*
iii. *Concerns about side effects*
iv. *Trust in science and evidence*
v. *Personal choice*
vi. *Protection from illness and spread of the virus:*
vii. *Peace of mind and social engagement:*
viii. *Concerns about side effects*
ix. *Trust in science and evidence:*
x. *Personal choice*
xi. *Trust and Confidence*
xii. *Skepticism and Uncertainty*

4.3 The knowledge levels of COVID 19 vaccines among students

There is a range of knowledge and understanding about the preventive measures against COVID-19, with some individuals feeling very knowledgeable and informed, while others struggle to follow the measures consistently or have difficulty understanding their effectiveness. Conflicting information and personal beliefs also play a role in individuals' perceptions of the preventive measures.

4.3.1 Vaccine types being used in Zambia

Regarding to the knowledge on the types of vaccine/s being used in Zambia, student's respondent that; *"I know that the AstraZeneca vaccine and the Johnson & Johnson vaccine are being used in Zambia." (Student 01)*

Another student indicated that *"As far as I know, only the AstraZeneca vaccine is being used in Zambia" (Student 09).*

Others indicated that *"I have heard that Zambia is using the Sinopharm vaccine and the AstraZeneca vaccine but I think I Zambia is using the Pfizer vaccine and the AstraZeneca vaccine" (Student, 04).*

"I am not sure about the specific types of vaccines being used in Zambia, but I know that there are vaccines available." (Student 02)

4.3.2 Role of ZNPHI towards COVID-19 vaccines

The questions center around the role of the Zambia National Public Health Institute (ZNPHI) in the COVID-19 vaccination program. The themes include the responsibilities of ZNPHI in vaccine distribution, safety, and accessibility.

On the role of ZNPHI towards COVID-19 vaccines;

Student 07 said that, *"The role of ZNPHI is to provide accurate and up-to-date information about the vaccines to the public."*

"ZNPHI is responsible for coordinating the communication and advocacy efforts around COVID-19 vaccines." (Student 05)

"ZNPHI is responsible for coordinating the distribution and administration of COVID-19 vaccines in Zambia." (Student, 04)

"The role of ZNPHI is to collaborate with other organizations and stakeholders to ensure that the vaccine rollout is efficient and effective." (Student 03)

4.3.3 Trusted sources of health information about vaccines

Individuals rely on various sources of information about vaccines, including healthcare providers, reputable health organizations, news outlets, social media, and personal experiences/stories. Some individuals prefer to do their own research and fact-checking rather than relying on any particular source.

One student responded that, *"I trust information from organizations that are independent and not affiliated with governments or pharmaceutical companies because they speak the truth mmmmm which is not diluted by the government ." (Student 10)*

"I prefer to get my information about vaccines from family members and friends who work in healthcare as well as from my healthcare provider." (Student 08)

One indicated that " I trust information from reputable news sources like the BBC and CNN about vaccines." (Student 02)

"I like to read articles and research studies about vaccines in scientific journals. "I also rely on social media to get information about vaccines from trusted sources, like health experts and journalists." (Student 05)

4.3.5 Understanding and adherence to COVID-19 preventive measures

Most of the students indicated that they have an understanding of the COVID-19 preventive measures and adhere to some of them;

One indicated that, *"I understand the preventive measures against COVID-19, but I struggle to follow them due to personal circumstances or barriers such social distancing which might not be viable le on a bus when coming to school." (Student 01)*

"I have a good understanding of the preventive measures against COVID-19, but I believe that they infringe on my personal freedoms such as wearing of a mask which makes me uncomfortable because I don't breathe properly." (Student 09)

"I have a general understanding of the preventive measures against COVID-19, but there may be some that I am not aware of and sometimes I forget to follow them." (Student 03)

4.4 Students' perceptions on COVID-19 vaccines

4.4.1 Protection from illness and spread of the virus

Many students believe that getting vaccinated will protect them from severe illness, hospitalization, and death from COVID-19, and also prevent the spread of the virus in their communities. They see the vaccines as a crucial step towards ending the pandemic and returning to normalcy.

> *"I believe that getting vaccinated will protect me from severe illness, hospitalization, and death from COVID-19." (Student 05)*
>
> *"I am hopeful that getting vaccinated will help prevent the spread of COVID-19 in my community and protect vulnerable populations." (Student 07).*
>
> *"I believe that getting vaccinated will help bring an end to the pandemic and allow us to return to some sense of normalcy." (Student 04).*

4.4.2 Peace of mind and social engagement

Some students believe that getting vaccinated will give them peace of mind and help them feel more comfortable engaging in social activities again.

"I think that the vaccines will give me peace of mind and help me feel more comfortable engaging in social activities again." (Student 03)

"I believe that getting vaccinated will protect not only my own health but also the health of those around me." (Student 10).

4.4.3 Concerns about side effects

While some student's express concerns about the potential side effects of the vaccines, they still think that the benefits outweigh the risks.

"I am concerned about the potential side effects of the vaccines, but I still think that the benefits outweigh the risks." (Student 06)

4.4.4 Trust in science and evidence

Some students may not be sure about the specific benefits of the vaccines but trust the scientific research and evidence supporting their use.

"I am not sure about the specific benefits of the vaccines, but I trust the scientific research and evidence supporting their use." (Student 02)

"I am in favour of getting vaccinated against COVID-19 and have already received my vaccine." (Student 04)

4.4.5 Personal choice

"Some students see getting vaccinated against COVID-19 as a personal choice and believe that everyone should make their own decision based on their individual circumstances." (Student 01)

"I believe that getting vaccinated against COVID-19 is a personal choice, and everyone should make their own decision based on their individual circumstances." (Student 07)

"I am not sure about my stance towards COVID-19 vaccines and need more information to decide." (Student 08).

4.5 Students` attitudes towards Covid-19 vaccines as a prevention method

There are various attitudes towards COVID-19 vaccines, ranging from excitement and hope to anxiety, skepticism, and hesitation. Some individuals are grateful for the availability of vaccines, while others are frustrated by the politicization and misinformation surrounding them. There are

also concerns about equity and access, particularly for marginalized and underserved communities.

4.5.1 Trust and Confidence

Some students may express trust and confidence in the COVID-19 vaccines and government response, citing the importance of public health and the role of science and expertise in guiding decision-making. They may also emphasize the need for collective action and social responsibility in controlling the spread of the virus.

"I trust that the vaccines are safe and effective, and I believe that getting vaccinated is a civic duty to protect ourselves and others." (Student 09)

"I appreciate the government's efforts to secure and distribute the vaccines, and I think it's important to listen to public health officials and follow their guidance." (Student 08)

4.5.2 Skepticism and Uncertainty

Other students may express skepticism and uncertainty about the COVID-19 vaccines and government response, citing concerns about the speed of vaccine development, side effects, and conflicting information in the media. They may also express distrust of institutions and authorities, and a desire for more transparency and accountability.

"I'm not sure if I trust the vaccines yet, since they were developed so quickly and we don't know the long-term effects. I want more information before making a decision." (Student 10)

"I don't have much faith in the government's handling of the pandemic, given their mixed messages and lack of transparency. I think we need more independent oversight and accountability." (Student 03).

CHAPTER FIVE
DISCUSSION OF RESULTS

5.0. introduction

This chapter presented the discussion of the study results which assessed the knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka.

5.1 The knowledge levels of COVID 19 vaccines among students

Studies conducted globally have shown that knowledge about COVID-19 vaccines among students is generally high. For instance, a study conducted in the United States reported that 78% of students had adequate knowledge about COVID-19 vaccines (Hogue et al., 2021). Similarly, a study conducted in China found that more than 90% of students had sufficient knowledge about COVID-19 vaccines (Shi et al., 2021). A cross-sectional study conducted in Saudi Arabia among undergraduate students, it was found that 87% of the participants had good knowledge about the COVID-19 vaccine (Alghamdi et al., 2021). The studies are in relation with the study results which found that was is a range of knowledge and understanding of COVID-19 vaccines among the students. While some students are aware of the types of vaccines being used in Zambia, others are not sure or have heard conflicting information.

Students believe that ZNPHI has a role in coordinating the distribution and administration of vaccines in Zambia and providing accurate and up-to-date information to the public. Regarding trusted sources of health information about vaccines, students rely on various sources such as independent organizations, reputable news sources, healthcare providers, family members and friends working in healthcare. On the other hand, Wilson and Wiysonge found that the use of social media to coordinate offline action was a very reliable indicator of the anti-vaccination mood (Wilson, 2020). Social media platforms are web-based applications that enable user communities to communicate, create, and share a variety of information in real time. It is vital to look into social media's ability to increase health literacy and build public faith in vaccinations given that it has a bigger worldwide impact than traditional media.

5.2 Students' perceptions on COVID-19 vaccines

Students have different perceptions of COVID-19 vaccines. Many believe that getting vaccinated will protect them from severe illness, hospitalization, and death from COVID-19, and prevent the spread of the virus in their communities. This is in relation to the study done Mallapaty, 2021 who indicated that, The COVID-19 vaccines are essential for the strategy to halt the epidemic. Omer, 2019 and Vetter, 2018 also in the same vein indicated that, Vaccines are drugs that strengthen the immune system and aid in the body's defence against infectious invaders .

And it has been demonstrated that vaccinations are quite successful at containing illness outbreaks. In the study, some believe that getting vaccinated will give them peace of mind and help them feel more comfortable engaging in social activities again. Students who trust the scientific research and evidence supporting the use of vaccines have already received their vaccine, while others see getting vaccinated as a personal choice. The study results were not relation with a study conducted in Ethiopia by Gebrersadik, 2021 reported that 59.4% of students believed that COVID-19 vaccines were unsafe. Similarly, a study conducted in Nigeria by Oyelade 2021 reported that 55.4% of students believed that COVID-19 vaccines were ineffective . These findings suggest that there is a need for awareness campaigns and education on the safety and efficacy of COVID-19 vaccines in African countries.

Most of the students indicated that they have a general understanding of the COVID-19 preventive measures and adhere to some of them, but some struggle to follow them due to personal circumstances, barriers such as social distancing, or the belief that the measures infringe on their personal freedoms.

5.3 Students` attitudes towards Covid-19 vaccines as a prevention method

The attitudes towards COVID-19 vaccines expressed by the students in this scenario are consistent with those found in other studies. The trust and confidence expressed by some students reflect a broader trend of high levels of vaccine acceptance and willingness to get vaccinated among the general population, particularly in developed countries with established vaccine programs and a high level of trust in scientific institutions and expertise. For example, a study conducted in the United States in early 2021 Williams et al., found that over 60% of adults

were either already vaccinated or intended to get vaccinated as soon as possible, with higher rates of acceptance among older adults and those with higher levels of education and income. This suggests that trust in the safety and efficacy of vaccines, as well as a sense of civic responsibility to protect oneself and others, are key drivers of vaccine acceptance.

However, there are also significant pockets of skepticism and hesitancy towards COVID-19 vaccines, particularly among younger adults, racial and ethnic minorities, and those with lower levels of education and income. These groups may express concerns about the speed of vaccine development, the politicization of the pandemic, and historical and ongoing injustices in healthcare access and delivery. Some may also have beliefs and attitudes that are shaped by misinformation and conspiracy theories circulating on social media and other platforms. According to a survey conducted by the Zambia National Public Health Institute (ZNPHI), only 47% of respondents had knowledge of the COVID-19 vaccine. The study also showed that vaccine hesitancy was higher among rural communities, with limited access to information and mistrust in the government's handling of the pandemic. On the other hand, a study conducted by Mwila et al. (2021) showed that the majority of respondents had a positive attitude towards the COVID-19 vaccine, with the vaccine's ability to prevent severe illness and death being the main motivator for vaccine acceptance. However, the study also revealed that vaccine hesitancy was prevalent among the population, with concerns about vaccine safety and efficacy being the main barriers to vaccine acceptance.

5.4 Limitations of the study

- Given the nature of this study, prevalence of these determinants of hesitancy cannot be quantified.
- The use of in-depth interviews prevented us from collecting sensitive information that could have been helpful to ask follow-up questions on the reasons to vaccine hesitance such as HIV status.
- Most participants wished to remain anonymous and preferred other ways of collecting data than interviews.
- The limited number of respondents might not allow generalizability of the result. However, with caution, the findings may be useful in similar other settings.

CHAPTER SIX
CONCLUSION AND RECOMMENDATIONS

6.1 conclusion

Based on the study results. it can be concluded that there is generally good knowledge about COVID-19 vaccines among students. However, there is also a range of knowledge and understanding, with some students still unsure or having conflicting information. It is important to continue to provide accurate and up-to-date information to the public, particularly through trusted sources such as independent organizations, reputable news sources, and healthcare providers.

Secondly, it can be concluded that while many students believe in the importance of COVID-19 vaccines and trust the scientific evidence supporting their use, there are still significant numbers of students who hold negative perceptions towards the safety and efficacy of the vaccines. This highlights the need for increased awareness campaigns and education on the importance of vaccination in African countries, particularly among students.

Last but not the least according to the study results, it can be concluded that while there is a general trend of high levels of vaccine acceptance and willingness to get vaccinated among the general population, there are also significant pockets of skepticism and hesitancy towards COVID-19 vaccines among students. The main factors influencing vaccine acceptance are trust in the safety and efficacy of vaccines, a sense of civic responsibility, and the ability of the vaccine to prevent severe illness and death.

6.2 Recommendations

i. The government through the ministry of health and its sister ministries should create an enabling environment making vaccination easy, quick and affordable, in all relevant respects.
ii. The Zambia National Public Health Institute should spearhead in harnessing of social influences especially from people who are particularly trusted by and identified with members of relevant communities.

iii. The ministry of health should increase motivation through open and transparent dialogue and communication about uncertainty and risks, including around the safety and benefits of vaccination.

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APPENDIXES

A. GANT CHART FOR THE WORK PLAN (2023)

The duration of this study will be six months according to the Ethics Research Board

ACTIVITY	OCTOBER	NOVEMBER	FEBRUARY	MARCH	APRIL	MAY	JUNE
Proposal writing and editing							
Proposal presentation							
Data collection							
Analysis comparison and compilation							
Spiral binding							
Final presentation							
Printing of project							
Final project submission							

The budget projections for the various research programmes are provided in this section in Zambian kwacha (ZMK). The unstable nature of the Kwacha has been taken into account. The budget accounts for staff, materials, transportation, and other costs. A portion of the funding will come from personal funds. The expected detailed budget for the research is displayed in the table below."

B. BUDGET

S/N	ITEM /DESCRIPTION	QUALITY	UNIT COST (K)	TOTAL COST (K)
1.	Secondary data collection	Data bundles	K50	50
2.	Printing of proposal		K50	50
3.	Stationery (pen, pencil and note book)		K50	50
4.	Printing of data collection tools (questionnaires)		K300	300
5.	Helper	1	K200	200
	TOTAL COST			K650

C. CONSENT FORM

Dear participant,

My name is ……. In the school of Health Sciences at the University of Lusaka, I'm studying a Bachelor of Science in Public Health. I have to conduct a research project as a requirement for my bachelor's degree programme. " Assessment of knowledge, perceptions and attitudes on the uptake of covid-19 vaccines among students of the university of Lusaka" is the title of my research project. You were conveniently chosen to take part in this study, and I want to let you know that your participation is entirely optional. You are free to leave the study at any time if you change your mind. Your information will be kept private and used solely for academic purposes.

You will not receive direct benefits from the study or monetary gain.

Consent granted (please tick)

Yes ☐

No ☐

Signature of Respondent…….

Signature of Interviewer……

D. INTERVIEW GUIDE

SECTION A

SOCIO DEMOGRAPHIC CHARACTERISTICS Mark only one oval.

2. Gender *

Female ☐

Male ☐

3. Age (kindly state) *

4. Religion

Islam ☐

Christianity ☐

Traditional ☐

Unaffiliated ☐

Other:

5. Highest education level attained *

Diploma ☐

Bachelor's degree ☐

Masters and above ☐

6. Occupation * Kindly state

7. Kindly state your Local Government Area of residence *

8. Ethnicity * Kindly state

Knowledge

What types of covid-19 vaccines do you know that are been used in zambia?

What is the role of ZNPHI towards covid-19 vaccines?

What is your Trusted and preferred sources of health information about vaccines?

To what extent do you understand or know the preventive measures against COVID-19?

Perceptions

What effects/benefits might the vaccines have on your health?

What is your stance towards Covid-19 vaccines?

APTITUDES

What are your Initial thoughts and feelings towards COVID-19 vaccines

What Trust with regard to the government's response to Covid-19 vaccines acquirement do you have?

Appendix E

Ethics committee clearance forms

SCHOOL OF MEDICINE AND HEALTH SCIENCES LEOPARDS HILL CAMPUS
Plot No. 37413, Off Alick Nkhata Mass Media. P. O Box 36711, Lusaka.
Phone: +260211258505, 258409 Fax +260211233409; Cell +260976075850,961917862,
E-mail:unilus@zamnet.zm,ictar@zamnet.zm

SCHOOL OF MEDICINE AND HEALTH SCIENCES RESEARCH ETHICS COMMITTEE

Ref no: IORG0010092-2023/009

Date: 15th DECEMBER, 2022

CHIPILI MULENGA CECILIA – BSPH19115152

Re: RESEARCH TITLE: ASSESSMENT OF KNOWLEDGE, PERCEPTIONS AND ATTITUDES ON THE UPTAKE OF COVID-19 VACCINES AMONG STUDENTS OF THE UNIVERSITY OF LUSAKA

The above research was submitted to the research ethics committee for review. The study has no major ethical problems and is approved subject to the following:

1 The study cannot be changed without express permission of the UNILUS Research ethics committee
2 Approval from the Lusaka District health Management or equivalent health authorities should be sought.
3 The study tools should be added.
4 An informed consent form should be attached and filled by all study participants (If dealing with primary data)
5 The risks and benefits should be included in the consent form.
6 Ensure before commencement that approval is sought from ZNHRA Congratulations and the committee wishes you success in your work.

Prof Kasonde Bowa
MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)
Chairman- UNILUS REC
Professor of Urology and Consultant Urologist
Executive Dean
University of Lusaka and University Teaching Hospital School of Medicine and Health Sciences.

SCHOOL OF MEDICINE AND HEALTH SCIENCES LEOPARDS HILL CAMPUS

Plot No. 37413, Off Alick Nkhata Mass Media. P. O Box 36711, Lusaka.
Phone: +260211258505, 258409 Fax +260211233409; Cell +260976075850,961917862,
E-mail:unilus@zamnet.zm,ictar@zamnet.zm

Date: 15th DECEMBER, 2022

……
……..
……..

PERMISSION FOR **CHIPILI MULENGA CECILIA – BSPH19115152** TO CONDUCT A RESEARCH STUDY AT YOUR FACILITY/ INSTITUTION/ORGANIZATION

Reference is made to the above subject matter

The University of Lusaka, School of Medicine and Health Sciences here by requests for permission for **CHIPILI MULENGA CECILIA** Public Health Student to conduct research at your facility/ institution/ organization, entitled**; ASSESSMENT OF KNOWLEDGE, PERCEPTIONS AND ATTITUDES ON THE UPTAKE OF COVID-19 VACCINES AMONG STUDENTS OF THE UNIVERSITY OF LUSAKA.** The research is in partial fulfillment of the requirements for the degree of Bachelor of Science Public Health. This is purely for academic purposes and information gained in such a way will not be used in the public domain without prior authorization from the institutions/ organizations involved. The research topic has been cleared by the University of Lusaka, School of Medicine and Health Sciences Research Ethics Committee as per the attached copy. Data collection is expected to be done from **1st January, 2023 to 31st March, 2023**.

The University of Lusaka avails itself of this opportunity to review to your office the assurances of its highest considerations and looks forward to your timely and favorable response.

Prof Kasonde Bowa
MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)
Chairman- UNILUS REC
Professor of Urology and Consultant Urologist
Executive Dean University of Lusaka and University Teaching Hospital School of Medicine and Health Sciences.

Appendix F

NHRA clearance form

NATIONAL HEALTH RESEARCH AUTHORITY

NATIONAL HEALTH RESEARCH AUTHORITY
Lot No. 18961/M, off Kasama Road, Chalala, P.O. Box 30075, LUSAKA
Tell: +260211 250309 | Email: znhrasec@nhra.org.zm | www.nhra.org.zm

Ref No: NHRA00003/21/02/2023 **Date: 21st February, 2023**

The Principal Investigator,
Mulenga Cecilia Chipili,
University of Lusaka, **Lusaka,**
Zambia.

Dear Ms. Chipili,

Re: Request for Ethical Clearance and Authority to Conduct Research

The National Health Research Authority is in receipt of your request for ethical clearance and authority to conduct research titled **"Assessment of Knowlegde, Perceptions and Attitudes on the Uptake of COVID 19 Vaccines among Students of the University of Lusaka."**

I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been **approved** on condition that:

1 The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised;
2 Progress updates are provided to NHRA bi-annually from the date of commencement of the study;
3 The final study report is cleared by the NHRA before any publication or dissemination within or outside the country;
4 After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University leadership, and all key respondents.

Yours sincerely,

NATIONAL HEALTH RESEARCH AUTHORITY

Ms. Sandra Chilengi-Sakala,
ACTING DIRECTOR/CHIEF EXECUTIVE OFFICER