KNOWLEDGE, ATTITUDE AND UPTAKE LEVELS OF HEPATITIS B VACCINATION AMONG BODA-BODA RIDERS IN GOMA DIVISION IN MUKONO DISTRICT

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UGANDA CHRISTIAN UNIVERSITY
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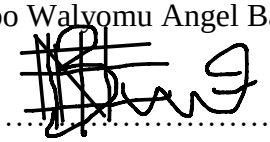
Declaration

I do declare that this work is my original work and has never been submitted to any university or institution for any kind of award

Name: Namusubo Walyomu Angel Barbara

Signature:  ……

Date: 10/05/2025

APPROVAL

This is to certify that this dissertation titled,Knowledge, attitude and uptake levels of hepatitis b vaccination among boda-boda riders in Goma division in Mukono district has been done under my supervision and now ready for submission.

Supervisor's name: Mr. Ssemujju Stephen

Signature: .....

Date: 19/5/2025

Dedication

I dedicate this book to my parents Mr.& Mrs. Walyomu, my husband Mr. Epaja Timothy not only for believing in me but also for the support they have given me to ensure I complete this course, and I also dedicate it to all the people out there that have suffered or lost a beloved one due to Hepatitis B.

Acknowledgement

I appreciate the grace of God that has sufficiently been made available to me by my lord Jesus Christ, in seeing the completion of this work.

I wish to express my heartfelt gratitude to my academic supervisor, Mr. Ssemujju Stephen who has greatly guided, encouraged and for his insightful supervision throughout this research.

With the same spirit I also acknowledge Mrs. Grace Mbabazi who though was not my main supervisor but still guided me throughout this research.

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Operational definitions

I. Knowledge

In this study knowledge refers to the awareness, understanding, and accurate information that the respondents (Boda-boda riders in Goma Division) possess about Hepatitis B Virus (HBV) infection, including:

- Modes of transmission (e.g., through blood, not air or utensils),
- Symptoms and consequences (e.g., liver disease, liver cancer),
- Prevention methods (e.g., vaccination),
- Availability and purpose of the HBV vaccine, and
- Misconceptions related to the infection (e.g., airborne transmits.

II. Attitude

In this study, attitude refers to the feelings, beliefs, and predispositions that the respondents (Boda-boda riders in Goma Division) have toward Hepatitis B, its prevention, vaccination, and testing.

It reflects how positively or negatively they respond emotionally and behaviourally to:

- The idea of being vaccinated,
- Getting tested for Hepatitis B,
- Beliefs about whether healthy people need the vaccine,
- General concern or seriousness they assign to the disease.

III. Level of uptake.

In this study, level of uptake refers to the extent to which Boda-boda riders in Goma Division have received the Hepatitis B vaccine — specifically, how many individuals have:

- Received at least one dose of the Hepatitis B vaccine, and
- Completed the full-recommended series of three doses.

It reflects the actual behavior or action taken by individuals in response to the availability of the vaccine, as opposed to just knowledge or attitude.

ABSTRACT

Introduction: Globally, hepatitis B affects 240 million people. Each year an estimated 650 000 people die from hepatitis B-related liver disease or liver cancer. It is endemic in much of the developing world, where between 8 and 10 per cent of the population are infected. In most developed countries the prevalence is much lower (less than 1 per cent) and the risks of transmission tend to be restricted to particular groups where exposure to blood is likely. It has caused epidemics in parts of Asia and Africa. Hepatitis B is endemic in China and in various parts of Asia.

Methods: A cross-sectional survey design was employed in the study, the population consisted of registered Boda-boda Riders that operate in Goma Division. The sample was reached at using Yamane's formula, and multistage sampling including cluster and simple random sampling were used pick bodaboda participants. The study used the questionnaire survey method for data collection, and data was analysed at a univariated level. Respondents were considered to have adequate knowledge on the HBV infection if the mean percentage scores is ≥50% and poor knowledge if the mean percentage score is below ≤50%. For attitude, the rating was as follows; ≤50% indicated negative attitude, ≥50 signified positive attitude. Likewise, perception was measured as follows; ≤50% indicated poor perception whiles ≥50 signified good perception (Likerts scale).

Results: Most of the respondents were aged between 30 and 40 years (52.6%), while the youngest group, those under 25, made up the least (1.3%). When it came to worship attendance, over a third (34%) reported attending once a week. Out of the 154 respondents, only 39.6% reported having received the vaccine, while the majority (60.4%) had not been vaccinated at all. Among those who had been vaccinated, half (50%) had completed all the recommended 3 doses.

While 59.5% of the respondents had heard of Hepatitis B, a significant proportion (34%) had never heard of it. Misconceptions were common—for instance, 58.4% believed the infection could be spread through the air, and 63.6% thought it could be contracted by sharing utensils like spoons or bowls. Although just under half (49.4%) had heard of the vaccine before, a big majority (81.2%) agreed that even healthy individuals need vaccination. Encouragingly, 92.2% expressed willingness to get vaccinated, and 80.5% were open to being tested for the virus.

Conclusion: The study found a generally low uptake of the Hepatitis B vaccine among Boda-Boda riders in Goma Division, with only 39.6% of respondents reporting having received at least one dose, and just 50% of these completing all three recommended doses. This highlights a concerning gap in protection among a population frequently exposed to health risks.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Hepatitis B is a viral infection that affects the liver. Though it can be asymptomatic initially, it can cause both acute and chronic disease such as liver cirrhosis, liver failure and cancer. The virus can be transmitted through contact with blood or body fluids of an infected person. Hepatitis B is an important public health problem as it is an occupational hazard for all people including Boda-Boda Riders when exposed to infected persons. This section captures the study background, problem statement, study purpose, objectives, research questions, scope, significance and conceptual framework.

1.2 Background of the study

Globally, hepatitis B affects 240 million people. Each year an estimated 650 000 people die from hepatitis B-related liver disease or liver cancer (Blach *et al.,* 2017). It is endemic in much of the developing world, where between 8 and 10 per cent of the population are infected (Griswold et al., 2019). In most developed countries the prevalence is much lower (less than 1 per cent) and the risks of transmission tend to be restricted to particular groups where exposure to blood is likely (Griswold et al., 2019). It has caused epidemics in parts of Asia and Africa. Hepatitis B is endemic in China and in various parts of Asia (Franco *et al.,* 2012).

In Africa, chronic viral hepatitis B affects over 60 million Africans (World Health Organization, 2017).Hepatitis B infection is preventable and treatable. Yet, despite the availability of diagnostic tools and effective treatment, over 90% of people living with hepatitis B in Africa lack much needed care (World Health Organization, 2017). The result is at least 200,000 deaths a year in Africa, often among the continent's most youthful and productive population. Fewer

than 1 in 10 people in Africa have access to testing and treatment, so the disease often progresses to advanced liver disease with its associated catastrophic financial burden as well as emotional distress and stigmatization (Mustapha *et al.,* 2020).

Uganda is highly endemic with 10% national prevalence with a prevalence of 5.6% among men and 3.1% among women and a lifetime exposure of the population is as high as 52% (Ssekamatte *et al.* 2022). These rates vary across the country from 4% in the southwest to 25% in the northeast and 25.5% in central region (Naziru& Zziwa, 2021). According to the MoH report 2018 from Uganda Blood Transfusion Services, (UBTS), it indicated that the trend of Hepatitis B virus among blood donors had increased from 1.9% in 2012/13 to 2.3% in 2016/17. The highest rates being registered in Arua (4.11%) and (4.21%) in Kampala metropolitan Wakiso district in inclusive (Opendi, 2018).

Hepatitis B vaccination in Uganda was introduced in 2002, being a deadly virus, the government has made efforts to vaccinate its people at different levels both through hospital visits and community outreaches (Ssekamatte*et al.,* 2022). Despite efforts to improve access to hepatitis B prevention, care and treatment services, their distribution and uptake among Boda-Boda Riders in Kampala Metropolitan is unknown (Ssekamatte*et al.,* 2022). One boda-boda rider can carry over 10 passengers per day that comes by thus making it a big potential exposure to Hepatitis B Virus (HBV) transmission since the nature of boda-boda transport leaves no space between the rider and the passenger. To make it worse some boda-boda riders risk to carry more than one passenger, which even makes it worse as there, is direct body contact amongst all the parties (KCCA, 2022). This means that one infected boda-boda rider is capable of spreading to many

passengers who can also spread it in the communities where they live. Besides that, data on awareness, attitude and uptake of boda-boda riders on Hepatitis B and Hepatitis B vaccination in Goma Division, which harbors a majority of the boda-boda riders in Mukono district, is unknown. Therefore, this prompted the researcher to establish the awareness of Hepatitis B, attitude and uptake of Hepatitis B vaccination among Boda-Boda Riders in Goma Division in Mukono District.

1.3 Problem statement

Uganda's commonest and easiest road transport means to access around the city and the nearby towns is motorcycle transport locally known as boda-boda transport (KCCA, 2022). It was estimated that there are one million boda-bodas on the roads in Uganda, a majority of them, about 750,000 operating in the districts of Kampala, Mukono and Wakiso but around 250 boda-bodas operate in Goma Division in Mukono Division (The Independent, 2022). The nature of boda-boda transport leaves no space between the rider and the passenger and to make it worse some boda-boda riders risk to carry more than one passenger, which even makes it worse as there is direct body contact. it issaid that one boda-boda rider can carry over 10 passengers per day that comes by thus making it a big potential exposure to Hepatitis B Virus (HBV) transmission as this can spread from the infected boda-boda rider to the passenger and vice versa (KCCA, 2022). This means that one infected boda-boda rider is capable of spreading to over one thousand passengers in a year thus becoming a very big threat to human health. Besides that, there is limited evidence on the awareness, attitude and uptake of Hepatitis B and Hepatitis B vaccination by boda-boda riders. Therefore, this has prompted the researcher to examine the awareness of Hepatitis B, attitude and uptake of Hepatitis B vaccination among Boda-Boda Riders in Goma Division in Mukono District.

1.4. General objective

To establish the knowledge, attitude and uptake levels of Hepatitis B vaccination among Boda-Boda Riders in Goma Division in Mukono District.

1.5 Specific objectives of the study

i) To determine the level of uptake of hepatitis B vaccine among Boda-Boda Riders in Goma Division

ii) To assess the knowledge of hepatitis B among Boda-Boda Riders in Goma Division

iii) To determine the attitude towards hepatitis B vaccination among Boda-Boda Riders in Goma Division

1.6 Research questions

i) What is the level of uptake of hepatitis B vaccine among Boda-Boda Riders in Goma Division?

ii) What is the knowledge of hepatitis B among Boda-Boda Riders in Goma Division?

iii) What is the attitude towards hepatitis B vaccination among Boda-Boda Riders in Goma Division?

1.7 Scope of the study

The scope of the study looked to inform three constructs, which include content scope, geographical scope as well as the time scope.

1.7.1 Content scope

This research study was generally focused on the uptake of Hepatitis B vaccination, awareness and attitude among Boda-Boda Riders but more emphasis will be put on the awareness of hepatitis B, the attitude towards hepatitis B vaccination and the level of uptake of hepatitis B vaccine, among Boda-Boda Riders.

1.7.2 Geographical scope

The study was carried out in Goma Division. Geographically Goma Division is located in Mukono District, Central Uganda Buganda Region approximately 20kms Northeast of Kampala City the Capital of Uganda after Kira Municipality. The Division had around 250 boda-boda riders who have stages and operate in and around Goma Division and majority of them have not be vaccinated against the hepatitis B.

1.7.3 Time scope

The review focused on literature from 2015 to 2023, as this period corresponds with a significant increase in the incidence of Hepatitis B in Uganda.

1.8 Justification of the study

Several studies have been conducted on variables such as awareness of Hepatitis B, attitudes toward the disease, and the uptake of Hepatitis B vaccination among health workers, medical students, and non-health workers attending selected health facilities (e.g., Jepkios, 2014; Ojara et al., 2020; Naziru & Zziwa, 2021; Madrama & Alege, 2022). However, to date, no study has specifically investigated the awareness, attitudes, and vaccination uptake among Boda-Boda riders, despite their critical role in the transmission of the virus. This gap in the literature prompted the present study, which examines these factors among Boda-Boda riders in Goma Division, Mukono District."

1.9 Significance of the Study

This study generated data regarding awareness of Hepatitis B, attitude and uptake levels of Hepatitis B vaccination, which will help health policy makers and development planners to design and develop appropriate strategies and programs that can help address the low uptake of hepatitis B vaccine by Boda-Boda Riders. The focus was to discover the community's awareness of the HBV vaccine and the attitude the community has towards taking it on. The future community on how best will use the study findings to curb down hepatitis B disease. The results of this study will considerably advance people's understanding of the idea of Hepatitis B vaccination. As it will serve as a literature source for other academics and researchers, this will also help with referencing and identifying similarities in study.

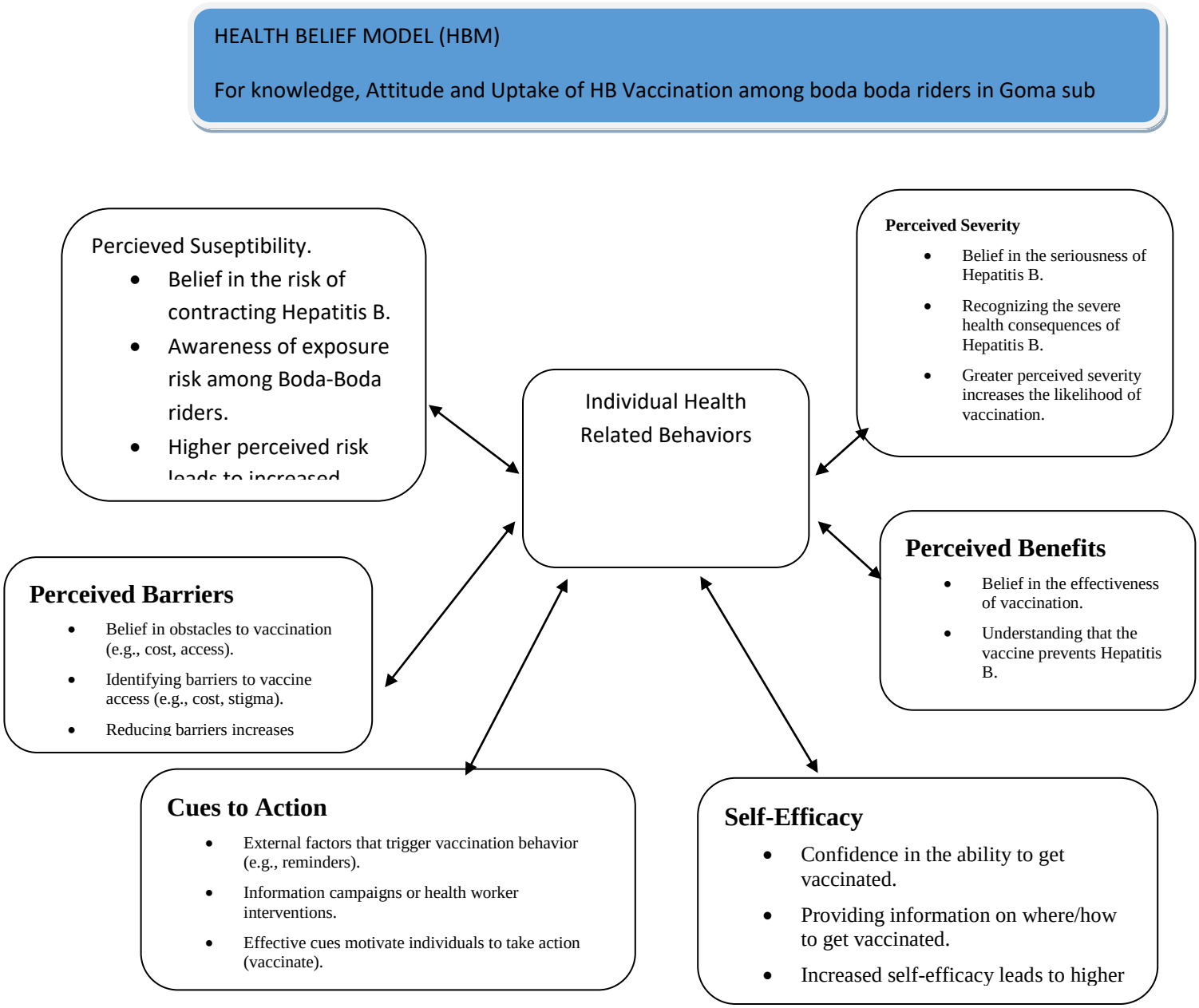
1.10 Theoretical Statement (Theorate)

This study is anchored in the Health Belief Model (HBM), originally developed by Rosenstock (1974), which explains health-related behaviors through individuals' perceptions of disease threat and evaluation of the benefits and barriers to action. According to the HBM, the likelihood of engaging in preventive health behaviors, such as Hepatitis B vaccination, is influenced by key constructs: perceived susceptibility (belief about the risk of contracting Hepatitis B), perceived severity (belief about the seriousness of the disease), perceived benefits (belief in the efficacy of vaccination), and perceived barriers (obstacles to vaccination) (Champion & Skinner, 2008).

In the context of boda-boda riders in Goma Division, awareness of Hepatitis B and vaccination increases perceived susceptibility and severity, which shape their attitudes towards vaccination.

Positive attitudes, influenced by understanding the benefits and overcoming barriers, promote higher uptake of the Hepatitis B vaccine. Prior studies have shown that increased knowledge and favorable attitudes significantly correlate with vaccination behavior (Maha, 2019; Walusimbi, 2019). Therefore, enhancing awareness and modifying attitudes are essential for improving vaccination coverage in this high-risk group.

This diagrammatic representation showing linkages between variables under study. The framework shows hypothetically linkage on awareness of Hepatitis B, attitude and uptake levels of Hepatitis B vaccination among Boda-Boda Riders.



The diagram shows, the linkage within the **Health Belief Model (HBM)** framework for Hepatitis B vaccination among **Boda-Boda riders** highlights the interconnectedness of key perceptions that influence vaccination behavior. **Perceived susceptibility** (belief in personal risk) and **perceived severity** (belief in the seriousness of the disease) work together to increase awareness of the threat, which enhances the perception of the **benefits** of vaccination. If the perceived **barriers** to vaccination (e.g., cost or access) are reduced, it strengthens the belief that the benefits outweigh the obstacles, promoting vaccine uptake. **Cues to action** (e.g., health

campaigns or reminders) trigger individuals to act, while **self-efficacy** (confidence in one's ability to get vaccinated) empowers riders to overcome barriers and follow through with vaccination. This cyclical interaction of constructs collectively drives the likelihood of vaccination uptake by addressing the factors that influence both attitudes and behaviors.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presented literature on the awareness of Hepatitis B, attitude and uptake levels of Hepatitis B vaccination. The chapter is based on a review of existing literature, either published or unpublished, that is relevant to the study objectives. The research included literature from both domestic and international sources. The literature reviewed in this study was to help the researcher to make a comparison between the findings of previous researchers/scholars/academicians with data collected from the field.

2.2 Uptake of hepatitis B vaccine

Hepatitis B still has a high prevalence in Africa for a number of reasons (Ijarotimi, Adekanle, Olowookere, Ijadunola, &Ndububa, 2015). This includes a lack of knowledge about the virus' spread, erroneous burden estimates, and inadequate vaccination rates. According to data from World Health Organization (2015), just 18 to 39% of people in low- and middle-income countries have received the Hepatitis B vaccine, compared to 67 to 79% in high-income nations Differences in vaccination uptake can be used to explain the variation in Hepatitis B prevalence. For instance, Nepalese medical students showed remarkable vaccination uptake in 2014. The majority of students (86.5%) had received the recommended doses of the Hepatitis B vaccine (Bhattarai, Smrit, Pradhan, Lama, & Rijal, 2014).

However, according to Papagiannis *et al.*, (2016), Greece reported much higher numbers. Students had a high (83%) rate of Hepatitis B vaccination, with medical students having a higher rate (88.1% vs. 81.4% among nursing students and 80.1% among paramedical students and majority of them had had childhood vaccinations. According to Olivier *et al.*, (2016) this cannot be stated for African medical students! The uptake of the Hepatitis B vaccine was relatively low (19%) in research conducted in Cameroon to evaluate awareness of Hepatitis B infection, Hepatitis B vaccine perception and uptake, and identify the serological profile of a group of healthcare professionals.

Relatedly, surgical students in Cameroon demonstrated a very poor uptake of the Hepatitis B vaccination while having outstanding understanding of the virus (Noubiap, Nansseu, Kengne, Wonkam, &Wiysonge, 2014). It was revealed that only 24.5% (n = 12) of the participants had received the full course of at least three doses of the vaccine, despite the fact that the majority of them had a good understanding of the risk factors for Hepatitis B infection, 98.0% (n = 48) were aware of the Hepatitis B vaccination, and 89.8% (n = 44) were aware that they were at high risk of infection. In addition, Noubiap, Nansseu, Kengne, Wonkam, &Wiysonge, (2014) revealed that only 4.3% of those who received the vaccine performed post-vaccination testing to determine if they had a good immune response and were effectively protected against Hepatitis B infection.

In their study in Ethiopia, Noubiap, Nansseu, Kengne, TchokfeNdoula, &Agyingi (2013) found that uptake was only 18%, and that only 10% of individuals who had been fully immunized had undergone a post-immunization test to verify a positive immunological response. The majority (95.3%) of medical and health science students at Haramaya University were not properly immunized, indicating that the situation is currently worsening (Mesfin &Kibret, 2013a). Even

closer to home, a research by Aaron, Nagu, Rwegasha, and Komba (2017) among all healthcare workers in Tanzania found that only 198 (56.9%) of the 348 health care workers had gotten at least one dose of hepatitis B vaccine, and just 117 (33.6%) were fully vaccinated.

A study by Kasozi et al. (2018) focused specifically on Boda-boda riders in Kampala, Uganda. The study found that 64.4% of the participants had received at least one dose of the hepatitis B vaccine, with 54.7% having completed the three-dose regimen. The study also identified factors such as education level, income, and access to health services as significant predictors of vaccine uptake. Relatedly, Musinguzi et al. (2020) reported that the coverage of the hepatitis B vaccine had increased in Uganda over the years, with 63% of people having received the vaccine. However, the study also noted that there were still significant disparities in vaccine coverage across different regions and population groups in the country.

Nankinga et al. (2020) assessed the prevalence and factors associated with hepatitis B infection among the general population in rural Uganda. The study found that the prevalence of hepatitis B infection was 8.8%, and only 14.4% of the participants had been vaccinated against hepatitis B. Another study by Nakityo et al. (2019) explored the impact of a health education intervention on uptake of hepatitis B vaccination among boda-boda riders. The study found that the intervention was effective in increasing knowledge and awareness of the disease, and there was a significant increase in the number of boda-boda riders who received the vaccine. A more recent study by Kabagenyi et al. (2021) also highlighted similar findings. The study reported that only 34% of boda-boda riders had been vaccinated against hepatitis B.

2.3 Knowledge of hepatitis B and Vaccination

According to Haq *et al.,* (2012) in their study in Quetta-Pakistan, the results of a cross-sectional survey conducted revealed that the community under research had little understanding about Hepatitis B. Only a small portion of responders had genuine knowledge about Hepatitis B transfer. The fact that just 28.2% of participants thought Hepatitis B may cause liver cancer is a serious cause for worry (Haq *et al.,* 2012). Information was primarily obtained through family, friends, and neighbors.

Pathmanathan et al., (2014) in their research in Puchong, Malaysia revealed a knowledge gap on Hepatitis B vaccination between the city's younger and elderly residents. Compared to the younger group, the older population knew more about hepatitis B. It went on to prove that there was a substantial relationship between education level and hepatitis B knowledge (Pathmanathan*et al.,* 2014). More emphasis was placed on how little informed and knowledgeable the general people were about vaccination status. Pathmanathan et al., (2014) further revealed that those of young age and level of education, majority of them had never heard of the Hepatitis B vaccine and were unaware of the recommended amount of injections.

According to Al-Thaqafy*et al.,* (2012) in their pre-interventional findings on a cohort of Saudi troops, it was revealed that they had very little awareness about hepatitis B. Prior to educational intervention, the study population's awareness of common routes Hepatitis B transmission, such as blood transfusion, sexual activity, and childbirth, was low (58%, 40%, and 30%, respectively). Relatedly, Han *et al.,* (2017) revealed that pregnant women in Guangdong Province of China had a poor level of understanding of hepatitis B. About 20% of the respondents and 53.3% of the

respondents did not realize that Hepatitis B vaccination can be transmitted from pregnant woman to child through the woman engaging in unprotected sexual or contact person(s) suffering from Hepatitis B respectively (Han *et al.,* 2017)

According to Addo *et al.,* (2015), who studied nursing mothers in the Ho Municipality of Ghana and published their findings, the level of nursing mothers' knowledge in that municipality about HBV was poor. Although the majority of them were aware that Hepatitis B infection may result in death and that vaccination could prevent it, their understanding of the disease's origins, modes of transmission, and symptoms was limited. Relatedly, according to Abdulai *et al.,* (2016) research on pregnant women in Kintampo Municipality in Ghana, it was revealed that this community had little understanding about hepatitis B infection. Furthermore Abdulai *et al.,* (2016) revealed that 41.5% of the 504 women were aware of the hepatitis B virus infection, and 33.5% of the women could properly name the Hepatitis B transmission channels. The most often cited source of information about Hepatitis B vaccination was the radio (42%), while 2.7% revealed that houses of religion such churches and mosques were source of their information.

A study by Kisakye et al. (2015) found that only 36% of boda-boda riders in Kampala, Uganda were aware of hepatitis B, and only 6% had received the hepatitis B vaccine. The study also revealed that the majority of the riders had poor knowledge about hepatitis B transmission and prevention, which could be attributed to their low levels of education and limited access to health information. A follow-up study conducted by Mukunya et al. (2016) in eastern Uganda found that awareness of hepatitis B had improved slightly among boda-boda riders, with 53% reporting that they had heard of the disease. However, only 15% had been vaccinated against hepatitis B, and only 12% had been tested for the virus.

Relatedly, a study by Nabirye et al. (2019) in southwestern Uganda reported similar findings, with only 22% of boda-boda riders surveyed being aware of hepatitis B, and only 7% having received the hepatitis B vaccine. The authors noted that the low awareness and vaccination rates could be due to a lack of health education programs targeting this group. In a more recent study by Nakawooya et al. (2021) found that awareness of hepatitis B among boda-boda riders in central Uganda had increased to 64%, but vaccination rates remained low at 13%. However, they recommended that health education campaigns should target boda-boda riders in their workplaces and that vaccination services should be made more accessible and affordable.

2.4 The attitude towards hepatitis B vaccination

According to Han *et al.,* (2017) on research conducted in Guangdong ProvinceC-hina, 83% and 85% of women surveyed said that they would allowed to vaccinated against and be open to having their babies vaccinated against Hepatitis B respectively. However, only 16.5% of respondent pregnant women said they prared to use medications proven to be safe for the fetus in order to avoid Mother-to-Child-Transmission of Hepatitis B. Ahmad et al., (2016) reported that 77.6% of respondents had safer practices for hepatitis B and C, and 54.8% of respondents had a good attitude toward hepatitis B and C. Addo *et al.,* (2015) conducted research on nursing mothers in Ghana and came to the conclusion that because of their bad attitudes and behaviors, nursing mothers did not actively work to protect their children from Hepatitis B infection. They had a dim understanding of the danger of Hepatitis B and the vulnerability of their children to it. Although the majority of them were aware that vaccination was necessary to prevent illness, they did not view it as being particularly crucial (Addo *et al.,* 2015).

In their Cameroon study, Akazong, Tume, Njouom, et al. (2020) found a substantial correlation between health care worker category and attitude toward Hepatitis B vaccination. Just 175 (44.0%) health care workers demonstrated an overall good attitude toward Hepatitis B vaccination, even though 270 (67.8%) of them expressed a positive attitude (behavior) toward those who were afflicted with the virus. The amount of inadequate understanding regarding the method of Hepatitis B transmission in this demographic served as justification for the majority of health care workers' negative attitudes against Hepatitis B vaccination (ul Haq, Hassal, Shafie, et al.2012). Positive attitudes regarding Hepatitis B vaccination were associated with a reduced frequency of current Hepatitis B infection (19, 45.2%). Having sufficient knowledge about a condition is typically linked to developing a good attitude regarding that sickness. This may explain why those with a positive attitude toward Hepatitis B vaccination had a reduced rate of active Hepatitis B infection.

According to a study conducted by Musaazi et al. (2017) which aimed at assessing the level of knowledge, attitudes, and practices regarding hepatitis B infection among the general population in Kampala, Uganda, it was found that 84.5% believed that it is a serious disease and were willing to take the vaccine. However, only 13.2% questioned the safety hepatitis B vaccine. Relatedly, Nankinga et al. (2017) in their study on the attitude of boda-boda riders towards hepatitis B vaccination in Uganda was generally positive. The study found that 81.5% of boda-boda riders who participated in the study were willing to receive hepatitis B vaccination. The study further revealed that boda-boda riders who had previously been vaccinated against hepatitis B were more willing to recommend the vaccine to their peers.

Similarly, a study conducted by Kaddumukasa et al. (2019) found that the attitude of boda-boda riders towards hepatitis B vaccination was positive. The study found that 91.5% of boda-boda riders who participated in the study were willing to receive the vaccine, while only 8.5% were unwilling. The study also found that the primary reason for boda-boda riders' willingness to receive hepatitis B vaccination was to protect themselves and their families from the virus. However, despite the positive attitude towards hepatitis B vaccination, there are still some challenges that need to be addressed.

2.5 Summary of literature review

The literature evaluation has found from the aforementioned research that several scholars have carried out numerous studies on the awareness of Hepatitis B, attitude and uptake levels of Hepatitis B vaccination. However, a number of gaps have been found. For instance, most of the studies were carried out in foreign countries which creates literature gap on local constant hence the need for the study that is centered on Uganda to bridge that gap. Besides that, few studies study have been carried out specifically focusing on Boda-Boda Riders; hence leave this large community with high possibility of transmitting Hepatitis B not adequately studied. Putting the above notion into consideration, this study will examine the awareness of Hepatitis B, attitude and uptake levels of Hepatitis B vaccination while focusing on Boda-Boda Riders in Goma Municipality

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methods that the study will consider. It captures the research design, population, sample size, sampling techniques, data collection methods and tools, data collection procedures, data quality control, data analysis and ethical consideration.

3.2 Studydesign

A cross-sectional survey design was considered in this study. A cross-sectional survey design is a research design that allows data collection from different individuals at a single point while using that collection tool (Kothari, 2014). It allowed the collection of large amount of data from the field in a highly economical way. The study considered quantitative approaches. The quantitative approach allowed the researcher to solicit measurable or quantifiable information (Mugenda & Mugenda, 2013). It was used because it allows collection data from a large population in a short period, which facilitates generalization of the study findings.

3.3 Study population

A population is a defined set of people or items being studies (Mugenda & Mugenda 2013). This study considered registered Boda-boda Riders that operate in Goma Division who are around 250 (The Independent, 2022). This total population was used to come up with the sample size that will be used in this study.

Inclusion criteria

- The Boda-Boda Riders who operate in Goma Division and who consented to the study.

Exclusion criteria

- Those Boda-Boda Riders operating outside Goma Sub county even those with Kira but have not given consent to the study [MP1][B2]

3.4 Sampling Procedure

This study used multistage sampling to pick bodaboda stages and simple random selection within each stage to choose the people who will take part in the study. This method enabled the researcher to obtain the sample from the population in such a way that the sample will give everyone an equal chance of being chosen.

3.5 Sample size determination

Sampling is the procedure a researcher uses to select participants for the study from the population. While sample size is the number of participants selected to take part in the study (Mbabazi, 2011). A sample size 154 respondents was considered as a sample from a total population 250-targeted Boda-Boda Riders in Goma Division. The sample was reached at using Yamane's formula developed in 1967 as shown below.

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

Where

N– Population = 250

e - Standard error = 5%

n- Sample size =?

$$n=\frac{250}{1+250\ (0.05^2)}$$

$$n=\frac{250}{1+.625}$$

$$n = \frac{250}{1.625}$$

n= 154 Respondents (Boda-Boda Riders)

3.6 Data collection methods

The with consider questionnaire survey and documentary review

3.6.1 Questionnaire survey methods

The study used the questionnaire survey method for data collection. The questionnaire was the key method for primary data collection. The questionnaire method offered a high response rate. Questionnaire method is widely used for surveys to obtain data about research problem under investigation by respondents' filling (Mugenda & Mugenda, 2013). Given the fact that most of the Boda-boda riders have low levels of education, it makes majority not able to read and write. Therefore, the under this method, the questionnaire was administered by the researcher with the help of Research Assistants. Furthermore, this method was used because it is less costly and maintains confidentiality.

3.7 Data collection tools

A researcher-administered questionnaire wasused to collect data from the respondents. Questions were arranged as per objective. Questionnaires are commonly used in social science studies where there is a large sample of respondents (Kothari, 2014). The questionnaire consisted of both open-ended and closed-ended questions. Thequestionnairewasdividedintofour major sections. Section A sought to know the respondents background informationsuch as age, sex, educational level and occupation. Section B basicallytalked about knowledge about

hepatitis B. Section C talked about the attitude ofHCWs towards the spread of the disease hepatitis B as well as their attitude towardscarriers of the disease.

3.8 Procedure for Data Collection

With the approved proposal and the data collection tools from the supervisor, the researcher obtained a letter of introduction from Uganda Christian University, which was presented to different relevant authorities in Goma Subcounty [MP3][BN4]seeking permission to collect data from the Boda-Boda Riders. After getting permission, the researcher approached the Boda-Boda Riders by first seeking the consent and then administered the Questionnaire to them.

3.9 Data quality control

This involved testing the validity and reliability of data collection instruments

3.9.1 Validity test

Validity is taken to mean how well a test measures what it is purported to measure (Yin, 2014). The study instruments were tested for face and content validity. The tools were reviewed by the supervisor, who commented on the questions in the questionnaire. The questions found vague, as suggested by the supervisor, were eliminated or rephrased.

3.9.2 Reliability test

The researcher pre-tested the instruments for the consistency and checked logical flow of questionnaires to test reliability of instruments. All data collection tools were subjected to a pilot study on a sample of 10 people to check for the clarity of the questions asked. The pilot test responses were tested further for Cronbach alpha using Statistical Package for Social Sciences (SPSS) Ver.20. The higher the Cronbach's Alpha coefficient, the better the measuring

instrument. However, alpha of 0.7 and above for items reveal that the set of items used to measure these variables are reliable and that threshold will be as recommended (Mugenda & Mugenda, 2013).

3.10 Data analysis

Data was entered, processed and analyzed using SPSS version 16 and transposed into word excels [MP5]2010. After entry, the data was cleaned by running the raw statistics, filling in the missing value to ensure completeness of the data entry. These were presented in frequency tables, pie charts. To measure the level of knowledge on HB vaccination, attitude as well as perception of respondents towards the infection, a scale of 0 – 100% was used. Respondents were considered to have adequate knowledge on the HBV infection if the mean percentage scores is ≥ 50% and poor knowledge if the mean percentage score is below ≤50%. For attitude, the rating was as follows; ≤50% indicated negative attitude, ≥50 signified positive attitude. Likewise, perception wase measured as follows; ≤50% indicated poor perception whiles ≥50 signified good perception (Likerts scale).

3.11 Ethical consideration

Ethical considerations in research are critical (Creswell, 2014). In this study, ethical considerations were upheld by ensuring high level of confidentiality, informed respondents consent, and plagiarism.

Confidentiality: All the responses that were provided by the respondents in the questionnaire were considered for academic purposes and only parties that weredirectly linked to this study were given access to data collected. There was limited access to data collected from the field. Furthermore, information such as names of the respondents and any other that may expose the

identity of the e respondent will not be collected. Therefore, names or photos of the respondents will not be included in this study.

Informed consent: A person to take part in the study will have to first fill the consent form. The researcher will fully explain to them their role and rights in the study. Only those who will consent voluntarily will be considered while those who will hesitate will be dropped.

Plagiarism: During the review of literature of different researchers, scholars and academicians, the researcher with try to rephrase and paraphrase their statements to avoid cases of plagiarism and the research will be tested for plagiarism using tuntine to meet the set thresholds.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents results from the analysis of data in line with the study objectives.

4.2 Background Information of Respondents

Table 1 shows the background information of the respondents n=154

Variable	***Category***	***Frequency (n=154)***	***Percentage (%)***
Age	<25	2	1.30
	25-29	36	23.38
	30-40	81	52.60
	>41	35	22.73
Religion	Anglican	71	46.10
	Catholic	38	24.68

	Muslim	17	11.04
	Pentecostal	23	14.94
	Others	5	3.25
Number of times you go to pray or worship in a week?	Once	52	33.99
	Twice	35	22.88
	More	16	10.46
	Never	50	32.68
Education Level	No formal Education	14	9.09
	Primary	90	58.44
	Secondary	31	20.13
	Tertiary/ University	19	12.34
Marital Status	Divorces	5	3.25
	Married	133	86.36
	Single	16	10.39
How many wives do you have?	One	91	68.42
	2-3	38	28.57
	More than three	4	3.01
Live with Family	No	22	14.38
	Yes	131	85.62
Internet Use	No	73	47.40
	Yes	81	52.60
Motorcycle Ownership[MP6]	No	57	37.01
	Yes	97	62.99

Years in Boda-Boda Industry	0-2	19	12.42
	3-6	62	40.52
	7-9	41	26.80
	10+	31	20.26
Safe-boda	No	114	74.03
	Yes	40	25.97
Have you done the screening for Hepatitis B?	No	102	66.67
	Yes	51	33.33

The study comprised of 154 Boda-Boda riders in Goma Division and it revealed that;

Most of the respondents were aged between 30 and 40 years (52.6%), while the youngest group, those under 25, made up the least (1.3%). In terms of religion, the majority were Anglican (46.1%), followed by Catholics (24.7%), while the least represented were those from other religions (3.3%). When it came to worship attendance, over a third (34%) reported attending once a week, while 10.5% worshipped more than twice, and 32.7% said they never attend at all. The highest level of education attained by most riders was primary education (58.4%), while only 9.1% had no formal education. Most of the riders were married (86.4%), and the majority had one wife (68.4%), with only a few (3%) having more than three. A significant number (85.6%) lived with their families. Slightly more than half (52.6%) reported using the internet. In terms of work, 63% owned the motorcycles they rode, and the largest group (40.5%) had been in the industry for 3 to 6 years, while 12.4% were relatively new with less than 2 years of

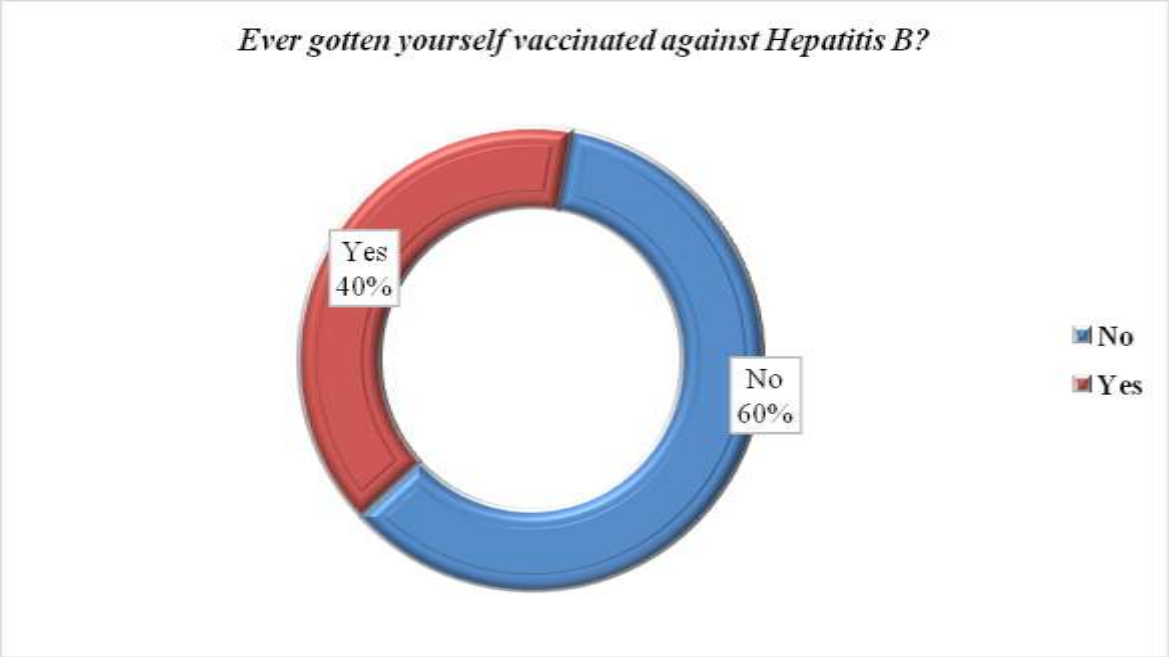
experience. Only a quarter (26%) were part of SafeBoda. Importantly, most riders (66.7%) had never been screened for Hepatitis B, highlighting a potential gap in health awareness and access.

Table 2 shows the level of uptake of hepatitis B vaccine among Boda-Boda Riders in Goma [MP7] ***Division*** [MP8][B9]

Variable	***Category***	***Frequency (n=154)***	***Percentage (%)***
Have you gotten yourself vaccinated against Hepatitis B?	No	93	60.39
	Yes	46	38.87
If yes, how many doses of Hepatitis B vaccines have you received?	One	2	4.35
	Two	21	45.65
	Three	23	50.00

The findings revealed a generally low uptake of the Hepatitis B vaccine among Boda-Boda riders in Goma Division. Out of the 154 respondents, only 38.87% reported having received the vaccine, while the majority (60.4%) had not been vaccinated at all. Among those who had been vaccinated (46), half[MP10][B11] (50%) of the study population had completed all three recommended 3 doses, 45.7% had received two doses, and only 4.4% had received just one dose. These results indicate that even among those who start the vaccination process, full completion remains a challenge.

Fig 2 show respondents ever vaccinated against Hepatitis B



The finding reveals that less than half of the respondents had ever been vaccinated against Hepatitis B

4.3 Knowledge of hepatitis B among Boda-Boda Riders

Table 3 shows the Knowledge of hepatitis B among Boda-Boda Riders in Goma Division

No	Variable	Yes	Not Sure	No
1	Have you heard of hepatitis B (HB) infection before?	91(59.48)	10(6.54)	52(33.99)
2	People get HB infection from genes (heredity)	22(14.29)	44(28.57)	88(57.14)
3	People get HB infection through the air (coughing or staying in the same room)	90(58.44)	25(16.23)	39(25.32)
4	People get HB infection from sexual relationships	48(31.17)	36(23.38)	70(45.45)
5	Do you agree that people get HBV infection during birth?	64(41.56)	29(18.83)	61(39.61)

6	Do people get HB infection by sharing spoons or bowls for food?	98(63.64)	18(11.69)	38(24.68)
7	Do people get HB infection by sharing a toothbrush with an infected person?	106(68.83)	19(12.34)	29.18.83)
8	People get HB infection by shaking hands with an infected person	110(71.43)	25(16.23)	19(12.34)
9	HB infection presents with signs like fever, weakness, jaundice (yellowish coloration of the eyes), right sided abdominal pains	102(66.23)	26(16.88)	26(16.88)
10	HB infection cause liver cancer	80(51.95)	34(22.08)	40(25.97)
11	If someone is infected with hepatitis B infection but he or she look and feel healthy, do you think that person can spread hepatitis B	101(65.58)	27(17.53)	26(16.88)
12	Do you agree that hepatitis B virus more infectious and deadly than human immunodeficiency virus (HIV)?	113(73.38)	24(15.58)	17(11.04)

The study revealed mixed levels of knowledge about Hepatitis B among Boda-Boda riders in Goma Division. While 59.5% of the respondents had heard of Hepatitis B, a significant proportion (34%) had never heard of it. Misconceptions were common—for instance, 58.4% believed the infection could be spread through the air, and 63.6% thought it could be contracted by sharing utensils like spoons or bowls. Only 31.2% correctly identified sexual transmission as a possible route, and just 41.6% agreed it could be transmitted during birth. Encouragingly, many

riders (68.8%) were aware that sharing a toothbrush could lead to infection, and 66.2% recognized symptoms such as fever, jaundice, and abdominal pain. Slightly over half (52%) knew that Hepatitis B can cause liver cancer, and 65.6% understood that someone can spread the virus even without showing symptoms. Notably, 73.4% believed that Hepatitis B is more infectious and deadly than HIV, showing some awareness of its severity.

4.4 Attitude towards hepatitis B vaccination among Boda-Boda Riders

Table 5 shows the attitude towards hepatitis B vaccination among Boda-Boda Riders in Goma Division

No	Variable	Yes	Not Sure	No
1	Have you heard of hepatitis B vaccine before?	76(49.35)	11(7.14)	67(43.51)
2	Do you agree that healthy people need vaccination?	125(81.17)	6(3.90)	23(14.94)
3	Would you agree to go for the hepatitis B vaccine?	142(92.21)	3(1.95)	9(5.84)
4	Have you ever received a hepatitis B vaccine before?	66(42.86)	2(1.30)	86(55.84)
5	Would you be willing to be tested for hepatitis B infection?	124(80.52)	1(0.65)	29(18.83)
6	Will you like to eat, sleep or shake hands a person infected with hepatitis B?	41(26.62)	9(5.84)	104(67.53)

The findings show generally positive attitudes towards Hepatitis B vaccination among Boda-Boda riders in Goma Division. Although just under half (49.4%) had heard of the vaccine before, a strong majority (81.2%) agreed that even healthy individuals need vaccination. Encouragingly, 92.2% expressed willingness to get vaccinated, and 80.5% were open to being tested for the virus. Despite this willingness, only 42.9% reported ever receiving the vaccine, indicating a gap

between attitude and actual uptake. When asked about interacting with infected individuals, most riders (67.5%) said they would not feel comfortable eating, sleeping, or shaking hands with someone infected, suggesting lingering stigma and misinformation about transmission. Overall, Despite the fact that a**t least 124 participants** (representing **80.52%** of the total sample of 154) had a **good attitude** towards hepatitis B vaccination, there remains a need for more awareness and education to turn intent into action and reduce stigma.

CHAPTER FIVE: DISCUSSION OF THE STUDY FINDINGS

5.1 Introduction

This chapter discusses the study results of the present research and gives policy recommendations based on the findings. Moreover, the results are discussed in line with the study objectives.

5.2 Background Information of Respondents

Most of the respondents were aged between 30 and 40 years (52.6%). In terms of religion, the majority were Anglican (46.1%). In regard to worship attendance, over a third (34%) reported attending once a week, while 10.5% worshipped more than twice, and 32.7% said they never attend at all. The highest level of education attained by most riders was primary education (58.4%), while only 9.1% had no formal education. Most of the riders were married (86.4%), and the majority had one wife (68.4%), with only a few (3%) having more than three.

A significant number (85.6%) lived with their families. Slightly more than half (52.6%) reported using the internet. In terms of work, 63% owned the motorcycles they rode, and the largest group (40.5%) had been in the industry for 3 to 6 years, while 12.4% were relatively new with less than 2 years of experience. Only a quarter (26%) were part of SafeBoda.

5.3 The level of uptake of hepatitis B vaccine among Boda-Boda Riders in Goma Division

The study revealed a generally low uptake of the Hepatitis B vaccine among Boda-Boda riders in Goma Division, with only 39.6% of the 154 respondents reporting having received the vaccine. This indicates a substantial gap in vaccination coverage among this occupational group, which is concerning given their potential exposure to blood and body fluids through road accidents and frequent contact with the public. Similar findings have been reported in studies involving informal sector workers, where access to health services and preventive interventions is often limited (Naicker et al., 2021). This low uptake suggests that despite ongoing national and regional efforts to promote Hepatitis B vaccination, certain high-risk groups may be left behind due to systemic, socio-economic, or behavioral barriers.

Among the vaccinated riders, only half (50%) had completed the full three-dose schedule, while 45.7% had received two doses, and 4.4% had received only one dose. This reflects a significant challenge in ensuring full adherence to the vaccination schedule. Previous studies have highlighted similar trends. For instance, a study by Sychareun et al. (2016) in People's Democratic Republic found that while initial uptake of the vaccine was moderate, a large proportion of individuals failed to complete the full regimen due to poor follow-up systems, lack of awareness about the importance of completing all three doses. Moreover, logistical challenges such as vaccine stock-outs or distance to health facilities affect completion (Flavia et al., 2023). These challenges are made worse among mobile and informal workers like Boda-Boda riders, whose work schedules may not accommodate multiple clinic visits.

The high rate of non-vaccination (60.4%) among respondents may also reflect knowledge gaps and health-seeking behaviors. As observed by Mugisha et al. (2019), limited awareness and misconceptions about Hepatitis B remain prevalent in many Ugandan communities, especially

among men and those in informal employment. Misconceptions about vaccine side effects, the severity of the disease, and the belief that one is not at risk can significantly reduce willingness to seek vaccination. Moreover, Boda-Boda riders often operate in economically vulnerable conditions, and unless vaccines are accessible at no cost and without significant disruption to their work, uptake is likely to remain low.

While the **39.6% uptake** of the Hepatitis B vaccine among Boda-Boda riders in **Goma Division** is relatively low, it is consistent with the challenges faced by other high-risk, informal sector populations in Uganda. It is still significantly lower than national coverage rates for infants (80-90%) but aligns with the **adult vaccination rate** seen in other vulnerable or hard-to-reach groups. Addressing the barriers of **awareness**, **accessibility**, and **cost** for mobile workers like Boda-Boda riders is crucial to improving national vaccine coverage and protecting high-risk populations.

5.3 Knowledge of hepatitis B among Boda-Boda Riders

The findings of this study reveal mixed levels of knowledge about Hepatitis B among Boda-Boda riders in Goma Division, reflecting both progress and persistent gaps in awareness. While it is encouraging that 59.5% of respondents had heard of Hepatitis B, the fact that 34% had never heard of it is alarming, especially given that this group is potentially at high risk of exposure through accidents or unsafe practices. This is consistent with previous studies in sub-Saharan Africa, where awareness of Hepatitis B remains low in the general population, particularly among informal workers and those with limited access to health information (Boye et al., 2020).

Widespread misconceptions were evident in the responses. A majority of participants believed that Hepatitis B could be transmitted through the air (58.4%) or by sharing eating utensils (63.6%), which are incorrect. These findings are in line with previous research that highlights

persistent myths and misinformation regarding the transmission of Hepatitis B (Chen et al., 2024). Such misconceptions not only increase stigma around the infection but also hinder the adoption of preventive behaviors and discourage individuals from seeking vaccination.

Moreover, accurate knowledge about actual transmission routes was limited. Only 31.2% recognized sexual transmission, and just 41.6% were aware of mother-to-child transmission during birth. These figures are concerning because they indicate that a large portion of Boda-Boda riders may not perceive themselves at risk or understand how the virus is spread, reducing their likelihood of engaging in preventive measures such as vaccination, safe sex, or screening. Previous studies have shown that poor understanding of transmission routes correlates with low vaccine uptake and risky health behaviors (Doornekamp et al., 2020).

Despite these gaps, there were positive signs of awareness. For example, 68.8% recognized that sharing a toothbrush could transmit the virus, and 66.2% were aware of key symptoms like fever, jaundice, and abdominal pain. Additionally, 52% knew that Hepatitis B could lead to liver cancer, and 65.6% understood that asymptomatic individuals could still transmit the virus. These findings suggest that while foundational knowledge is lacking in some areas, there is a baseline understanding that can be built upon through targeted health education campaigns.

Interestingly, a significant proportion of riders (73.4%) believed that Hepatitis B is more infectious and deadly than HIV, showing a degree of recognition of the disease's severity. This perception aligns with epidemiological data indicating that Hepatitis B is indeed more infectious than HIV, with a transmission efficiency that is estimated to be 50 to 100 times higher (Abate, 2022). However, awareness of this fact does not appear to have translated into protective behavior, given the low vaccination rates reported earlier, pointing to a disconnect between knowledge and action.

5.4 Attitude towards hepatitis B vaccination among Boda-Boda Riders

The study revealed generally positive attitudes toward Hepatitis B vaccination among Boda-Boda riders in Goma Division, which is a promising foundation for public health interventions. Although only 49.4% had previously heard of the Hepatitis B vaccine, a substantial 81.2% believed that even healthy individuals should be vaccinated, and 92.2% expressed willingness to be vaccinated. This level of positive intent aligns with findings from other low- and middle-income countries, where people often show high theoretical acceptance of vaccination when informed about the disease's risks and benefits (Otieno, 2023). Furthermore, 80.5% expressed willingness to be tested, which indicates not just a readiness to prevent the disease but also an openness to know their status—an important step toward controlling Hepatitis B.

Despite this favorable attitude, there is a clear disconnect between intention and action, as only 42.9% reported having received the vaccine. This phenomenon—commonly referred to as the "intention–behavior gap"—is widely observed in health behavior research. Several factors may contribute to this gap, including logistical barriers, vaccine availability, lack of follow-up, and economic constraints (Napyo et al., 2024). The riders' informal and mobile nature of work may further hinder their ability to access scheduled vaccine services. This gap highlights the need for active, accessible, and context-specific vaccination strategies to convert willingness into real-world action.

Additionally, while attitudes towards vaccination were positive, responses to hypothetical social interactions with infected individuals revealed lingering stigma and misinformation. A majority (67.5%) reported discomfort with eating, sleeping, or shaking hands with someone infected. This stigma is likely rooted in poor understanding of transmission routes and reflects the earlier findings of widespread misconceptions, such as beliefs in airborne and utensil-based transmission. As reported by Mugisha et al. (2019), such stigma is often a byproduct of misinformation and can lead to social exclusion of individuals living with Hepatitis B, discouraging testing, disclosure, and treatment.

The contrast between positive vaccine attitudes and stigmatized views of infected individuals demonstrates the complexity of public health communication challenges. It suggests that while messages promoting vaccination are having some success, broader education about the virus—its

actual modes of transmission, the asymptomatic nature of many cases, and the realities of living with Hepatitis B—is still lacking. Addressing this will require not only biomedical messaging but also community engagement strategies that focus on compassion, accurate knowledge, and destigmatization (Boye et al., 2020).

5.6 Conclusion

i. Vaccine **Uptake**

- ✓ Only 46 riders (38.87%) reported receiving at least one dose.
- ✓ Of those, only 50% completed all three recommended doses.
- ✓ Highlights a protection gap in a high-risk population.
- ✓ Low completion reflects national challenges: limited access to facilities, poor follow-up, and low awareness.
- ✓ Vaccine availability alone is insufficient—supportive systems are needed.
- ✓ Suggested interventions: mobile vaccination outreaches, reminder systems, employer-supported drives tailored to informal/mobile workers.

ii. **Knowledge & Awareness**

- ✓ 59.5% had heard of Hepatitis B; 34% had never heard of it.
- ✓ Misconceptions were common:
  - 58.4% believed transmission occurs through air.
  - 63.6% believed transmission occurs through utensils.
  - Only 31.2% correctly identified sexual transmission.
  - 41.6% mentioned mother-to-child transmission.
- ✓ Correct knowledge:
  - 68.8% knew sharing a toothbrush can spread the virus.
  - 65.6% recognized asymptomatic transmission.
- ✓ Public health campaigns should correct misconceptions and reinforce correct knowledge using trusted platforms (radio, leaders, peer educators).

iii. **Attitudes toward Prevention**

- ✓ 81.2% believed healthy people should be vaccinated.
- ✓ 92.2% expressed willingness to be vaccinated.

- ✓ 80.5% were willing to undergo testing.
- ✓ Despite positive attitudes, only 42.9% had received any vaccination.
- ✓ Barriers: limited access, time constraints, cost.
- ✓ Stigma persisted:
    - 67.5% uncomfortable eating, sleeping, or shaking hands with infected persons.
- ✓ Highlights the need for education strategies that tackle both knowledge and stigma.

iv. **Perceptions & Misconceptions**

- ✓ 71.4% believed infected individuals should be isolated.
- ✓ 73.4% believed casual contact (e.g., handshakes) can transmit Hepatitis B.
- ✓ 72.1% thought healthy eating and exercise could prevent infection.
- ✓ Accurate perceptions:
    - 67.5% knew Hepatitis B can cause liver cancer.
    - 79.2% knew asymptomatic carriers can transmit the virus.
- ✓ Findings show a mix of misinformation and correct understanding—awareness of severity exists but misconceptions hinder targeted prevention.

5.7. Limitations of the Study:

1. **Sample Size**: The study focused on a relatively small sample of 154 Boda-Boda riders in Goma Division, which may limit the generalizability of the findings to the broader population of Boda-Boda riders in Uganda.
2. **Self-Reported Data**: Data on vaccine uptake and attitudes were self-reported, which may introduce biases such as over-reporting of vaccination status or social desirability bias in responses about willingness to vaccinate.
3. **Lack of Longitudinal Data**: The study provides cross-sectional data, meaning it captures information at a single point in time. This limits the ability to assess long-term trends in vaccination behavior, knowledge retention, or the impact of interventions.
4. **Geographical Focus**: The study was conducted in Goma Division, and results may vary in different regions of Uganda, especially between urban and rural areas, or between informal sector workers in different occupations.
5. **Focus on Boda-Boda Riders**: While Boda-Boda riders are a high-risk group, the findings are specific to this occupation and may not fully represent the situation among other high-risk populations (e.g., healthcare workers, commercial sex workers) in Uganda.

5.7 Recommendations

i. **High prevalence of misconceptions and limited knowledge**

- ❖ Highlights the urgent need for targeted health education programs.
- ❖ The Ministry of Health and local health authorities should design and implement culturally appropriate and easily accessible awareness campaigns.
- ❖ Campaigns should focus on correct transmission routes, prevention methods, and the benefits of vaccination.
- ❖ Media channels popular among riders—such as radio, posters in public places, and community engagements—should be used to dispel myths and promote accurate information.

ii. **Low vaccine uptake and incomplete doses**

- ❖ Despite willingness to be vaccinated, uptake remains low, especially regarding full-dose completion.
- ❖ Health authorities should adopt mobile vaccination clinics and workplace-based outreach targeting informal sector workers like Boda-Boda riders.
- ❖ Services should offer vaccination at flexible hours and convenient locations (e.g., stages, garages).
- ❖ Follow-up reminders should be included to support full-dose completion.

iii. **Role of associations and local councils**

- ❖ Associations of Boda-Boda riders and local councils can collaborate with the Ministry of Health to integrate Hepatitis B services into occupational health initiatives.
- ❖ Activities could include on-site health checkups, Hepatitis B screening, and vaccination drives.
- ❖ Large gatherings like rider association meetings can be leveraged to increase service uptake.
- ❖ Such integration normalizes preventive health behaviors in informal work environments.

iv. **Addressing stigma**

- ❖ Reported stigma, such as fear of eating or interacting with infected individuals, requires stigma-reduction strategies.

- ❖ Training peer educators and involving Hepatitis B survivors as community champions can personalize the disease, correct misinformation, and reduce fear-based reactions.
- ❖ Programs should emphasize that individuals with Hepatitis B can live healthy lives and should not be isolated or discriminated against.

v. **Building on positive attitudes**

- ❖ The generally positive attitude towards testing and vaccination provides a strong foundation for behavior change initiatives.
- ❖ Health promoters should create call-to-action campaigns that encourage riders to "act on what they believe."
- ❖ Behavior change communication can use relatable stories, testimonials, and incentives to promote action.

vi. **Further research and monitoring**

- ❖ More in-depth qualitative studies could explore why riders fail to complete vaccination despite positive attitudes.
- ❖ Findings could inform the design of tailored interventions.
- ❖ Regular monitoring and evaluation of Hepatitis B interventions targeting informal workers is necessary to assess progress, identify gaps, and guide policy adjustments.

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Appendix I: Informed Consent Form

Title of the Study: Knowledge, Attitude, and Uptake Levels of Hepatitis B Vaccination Among Boda-Boda Riders in Goma Division, Mukono District.

Researcher:NamusuboWalyomu Angel Barbara

Introduction: You are being invited to participate in a research study aimed at understanding the awareness, attitudes, and uptake levels of Hepatitis B vaccination among Boda-Boda Riders in Goma Division, Mukono District. Before deciding whether to participate, it is important for you to understand the purpose of the study, what will be asked of you, and any potential risks or benefits involved.

Study Procedures:

Participation involves completing a survey/questionnaire that will inquire about your knowledge of Hepatitis B, your attitudes towards Hepatitis B vaccination, and whether you have received the Hepatitis B vaccine.

Your responses will be kept confidential and used only for research purposes.

The survey will take approximately [insert estimated time] to complete.

Risks and Benefits:

There are minimal risks associated with participating in this study, such as potential discomfort or inconvenience from answering sensitive questions.

Benefits include contributing to research aimed at improving Hepatitis B awareness and vaccination uptake among Boda-Boda Riders, which may ultimately lead to better health outcomes for individuals and communities.

Confidentiality:

Your participation and all information provided will be kept strictly confidential.

Data will be anonymized and stored securely. Only the researcher, NamusuboWalyomu Angel Barbara, will have access to the data.

Voluntary Participation:

Your participation in this study is entirely voluntary.

You may refuse to participate or withdraw from the study at any time without consequence.

Contact Information:

If you have any questions about the study, please feel free to contact the researcher, NamusuboWalyomu Angel Barbara, at +256 783998531.

If you have any concerns about your rights as a participant or wish to report any issues related to the study, you may contact the chairperson of the Research Ethics Committee of Uganda Christian University, Dr. Mukooza Edward Kibikyo on +256 772957345.

Consent: I have read and understand the information provided in this consent form. I have had the opportunity to ask questions and have received satisfactory answers. I voluntarily agree to participate in this research study.

Participant's Signature: _____ Date: _____

Researcher's Signature: _____ Date: _____

Appendix II: Research Tool

Background Information

Age:

<25 ☐ 25-29 ☐ 30-40 ☐ >41 ☐

Religion:

Anglican ☐ Catholic ☐ Pentecostal ☐ Muslim ☐ Others ☐

Religiosity:

Never ☐ Once ☐ Twice ☐ More ☐

Education Level:

Primary ☐ Secondary ☐ Tertiary/ University ☐ No formal Education ☐

Marital Status:

Married ☐ Single ☐ Divorced ☐ Widower ☐

How many wives do you have?

One ☐ two to three ☐ More than three ☐

Live with Family:Yes ☐ No ☐

InternetUse:Yes ☐ No ☐

MotorcycleOwnership: Yes ☐ No ☐

Years in Boda Boda Industry:

0-2 ☐ 3-6 ☐ 7-9 ☐ 10+ ☐

Safe boda: Yes ☐ No ☐

Have you done the screening for Hepatitis B? Yes ☐ No ☐

Have you gotten yourself vaccinated against Hepatitis B? Yes ☐ No ☐

If yes, how many doses of Hepatitis B vaccines have you received?

One ☐ Two ☐ Three ☐

Section B: Knowledge of Hepatitis B Infection

Please indicate your response on the following about the Knowledge of Hepatitis B infection by ticking one of the options

	Knowledge of Hepatitis B Infection	**Yes**	**No**	**Not sure**
15	Have you heard of hepatitis B(HB)infection before?			
16	People get HB infection from genes(heredity)			
17	People get HB infection through the air(coughing or staying in the same room)			

18	People get HB infection from sexual relationships			
19	Do you agree that people get HBV infection during birth?			
20	Do people get HB infection by sharing sponsor bowls for food?			
21	Do people get HB infection by sharing a toothbrush with an infected person?			
22	People get HB infection by shaking hands with an infected person			
23	HB infection presents with signs like fever, weakness, jaundice (yellowish coloration oft heeyes), right sided abdominal pains			
24	HB infection cause liver cancer			
25	If some one is infected with hepatitis B infection but he or she look and feel healthy, do you think that person can spread hepatitis B			
26	Do you agree that hepatitis B virus more infectious and deadly than human immunodeficiency virus(HIV)?			

SectionC: Attitude and Perception of people towards Hepatitis B Infection

Please indicate your response on the following about the Attitude and Practices of people towards Hepatitis B infection by ticking one of the options

	Attitude of people towards Hepatitis B Infection	**Yes**	**No**	**Not sure**
27	have you heard of hepatitis B vaccine before?			
28	Do you agree that healthy people need vaccination?			
29	Would you agree to go for the hepatitis vaccine?			
30	Have you ever received hepatitis B vaccine before?			
31	Would you be willing to be tested for hepatitis B infection?			
32	Will you like to eat, sleep or shake hands a person infected with hepatitis B?			
	Perception of Hepatitis B Infection among Healthcare workers	**Yes**	**No**	**Not sure**
33	Do you think there is efficient treatment of hepatitis B virus infection?			
34	Hepatitis B infected person should be isolated away from people to prevent them from infecting others			
35	Do you agree that regular exercise and eating healthy food can			

	prevent hepatitis B virus infection?			
36	Can hepatitis B be caught through causal contacts, such as holding hands			
37	Can the hepatitis B virus cause liver cancer			
38	Can HBV carriers transmit the infection to others			

Adapted from: Greenetal. (2014)

Thank you for your participation

Appendix III: Time Table

Number	Deatails	Duration	Time frame
1	Proposal Development	1 month	April 2024
2	Literature review	Two weeks	May 2024
3	Research design and ethical approval	Two weeks	May 2024
4	Data collection	Two weeks	February 2025
5	Data analysis	One week	March 2025
6	Dissemination and study findings	One week	Ma rch 2025

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REGULAR SUPERVISION REPORT

Supervisor's Name: Ssemujju Stephen

Student's Name: Namusubo Walyomu Angel Barbara **Reg. No:** RJ22M21/038

Date of Submission of Work to Supervisor: 07- September 2025

Date of Meeting that Discussed the Work: 07- September 2025

SUPERVISORS COMMENTS ON STUDENT'S WORK AND RECOMMENDATION FOR ACTION

I have been pleased to serve as the supervisor of **Namusubo W. A. Barbara**. Throughout the course of her research, we met on several occasions and walked this academic journey together, right from the development of the proposal to the completion of the final report. Below are examples of some of the meetings we held during different stages of her work.

First Meeting: ,
The student presented their topic and its relevance and was guided accordingly on how to refine it to meet academic requirements.

Second Meeting:
In the second meeting, the student presented her draft proposal. She was advised to make corrections, particularly on how to clearly and precisely state her objectives to ensure they aligned with the purpose of the study. The student took note of the guidance, made the necessary revisions, and later submitted a corrected version of the proposal via email for review.

Third Meeting:
During the third meeting, the student presented her methodology. Together, we agreed that a cross-sectional design would be most appropriate for the study. We also discussed and finalized issues regarding the determination of the sample size and the suitable approaches for data collection.

Fourth Meeting:
In this meeting, the student presented the data collection tools for review. Guidance was provided on refining the questionnaire to ensure clarity, relevance, and alignment with the study objectives. We also discussed ethical considerations and strategies to improve response rates among participants.

Fifth Meeting:
The student gave an update on progress with data collection. We discussed challenges encountered in the

field and agreed on strategies to address them. I advised the student to ensure data quality checks and proper coding in preparation for analysis.

Sixth Meeting:
The student presented her preliminary data analysis. Feedback was given on how to improve data presentation, including the use of tables and figures, and how to link the analysis to the study objectives. I also guided her on structuring the results chapter for clarity and coherence.

Seventh Meeting:
At this stage, the student presented the draft results and discussion chapters. We reviewed how well the findings were interpreted and compared with existing literature. The student was guided to strengthen the discussion by highlighting key insights, implications, and connections to the research objectives.

Eighth Meeting:
The student presented a near-final draft of the dissertation. We reviewed the conclusion and recommendations, ensuring they flowed logically from the findings. She was advised on improving academic writing style, citation consistency, and formatting according to institutional guidelines.

Final Meeting:
In the final meeting, the student submitted her fully revised dissertation. We discussed final improvements, including proofreading and fine-tuning of references. I expressed my satisfaction with her progress and commended her for the commitment and diligence demonstrated throughout the research journey.

Conclusion and Recommendation:
It has been a pleasure supervising **Namusubo W.A. Barbara** throughout the course of her research journey. From the initial proposal development to the submission of the final report, she has demonstrated commitment, resilience, and a willingness to learn. She consistently responded positively to guidance, revised her work diligently, and gradually improved both her methodological and analytical skills. The final dissertation reflects originality, critical engagement with literature, and practical recommendations relevant to the study context. I therefore find her work to be of good academic quality and recommend it for submission and examination.

STUDENT'S SIGNATURE

SUPERVISOR'S SIGNATURE

Cc Head of Department
Cc Co-supervisor (if there is one)

Version: Dec 2006

SN	COMMENTS BY INTERNAL EXAMINER	ACTION TAKEN	INDICATOR
1	This is not an exclusion criterion for this study	Taken	Page 17
2	If Goma Municipality is in Mukono District, why did the candidate get permission to carry out the study From Kira Municipality?	Taken	Page 20
3	Data entry is made in excel or Epidata and then exported to SPSS or Stata for analysis. You did Univariate analysis only? How was level of uptake measured?	Taken	Page 21
4	What does this mean?	Taken	Page 23
5	Where is Table 2?	Taken	Page 25
6	The candidate should Check this Table again. If 61 Boda boda riders had been vaccinated for Hepatitis when you ad 2+21+23 you get 46. !5 participants are not accounted for.	Taken	Page 25
7	23 is not half of 61 Please check these facts. The percentages given here are all wrong.	Taken	Page 25

SN	COMMENTS BY VIVA VOCE PANNEL	ACTION TAKEN	INDICATOR
1	No recommendations presented	These are	Page 35
2	What is the level of the uptake and how does the national uptake compare with that of the	Action Taken	Page 30

4

	Knowledge, attitude, vaccination of hepatitis and level of vaccination as used in this study.		
3	The candidate carried out data collection form Goma Division why di she get permission form Kira Municipality?	This was in error and has been corrected. Thank you for the observation.	Reference No pg 18
4	The candidate should describe the study procedure clearly so that we understand how the candidate worked with the local authorities to Identify, approach and introduce the study to potential participants. Who screened, consented and enrolled the participants into the study?	The Study procedure to identify approach and introduce the study to potential participants in the following stages. **Stage 1.** I got a consent letter from the university, which I used to introduce myself to the different chairpersons who gave me a go ahead to collect the data. **Stage 2.** I still used the consent letter to introduce myself to chairpersons of the boda stages requesting them to carry out my research. **Stage 3.** Once I was given a go ahead I would choose randomly who wanted to participate and who ever said yes was given a consent letter to officially agree to the exercise	Reference is being made to the university letter and the consent forms
5	5. Where did the interview process take place?	The interview took place in Goma Municipality.	Page 18
6	The candidate should describe how the data was managed and entered in a statistical programme for analysis and who did the data entry, data cleaning and	• The data was entered into **SPSS version 16** and processed using **Excel 2010**. A **data entry operator** handled the input, while the researcher conducted data cleaning by addressing missing values and ensuring completeness. Descriptive statistics, including **frequency tables** and **pie charts**, were used to present the data. **Knowledge** was classified as adequate (≥ 50%) or poor (≤ 50%) based	Page 24

2

	analysis.	on percentage scores. **Attitudes** and **perceptions** were also measured on a scale: scores ≥ 50% indicated positive attitudes and good perceptions, while scores ≤ 50% indicated negative attitudes and poor perceptions. **Data analysis** was performed by the researcher to interpret the findings.	
7.	How many participants were Knowledgeable about hepatitis B vaccination?	91 Participants	Page 26
8	How many participants good attitude towards hepatitis B vaccination?	The study reveals that **80.52%** of participants (124 out of 154) have a **good attitude** towards Hepatitis B vaccination, as they expressed willingness to get vaccinated and recognized the need for vaccination even among healthy individuals. However, despite this positive attitude, the actual uptake remains low, highlighting a gap between intention and action, as well as ongoing **misconceptions** and **stigma** about the disease.	Page 8
9	How did the candidate select variables for the multivariate analysis.	I chose the variables for multivariate analysis based on their relevance to the study's objectives, including **demographics** (e.g., age, education) and **health behaviors** (e.g., motorcycle ownership, internet use). Variables aligned with the **Health Belief Model (HBM)**, such as **perceived risk** and **barriers**, were prioritized. The selection was also guided by results from **univariate analysis**, significance, and avoiding **multicollinearity**, while considering **data quality** to ensure valid and reliable findings.	Page 4,8
10	The candidate should bullet the conclusion and recommendations	This is done	Page 34

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DISSERTATION CORRECTION COMPLIANCE REPORT BY THE CANDIDATE (POST VIVA FORM)

Date: 04 September 2025

Name of Candidate: Namusubo Waiyomu Angel Barbara **Reg. No:** RJ22M21/038

Title of Dissertation: **Knowledge, Attitude and Uptake levels of hepatitis b vaccination among boda-boda riders in Goma division in Mukono District**

SN	COMMENTS BY EXTERNAL EXAMINER	ACTION TAKEN	INDICATOR
1	The candidate should correct the grammatical and typographical errors in the dissertation	Grammar and typographical errors have been corrected	Reference to the whole thesis
2	The candidate should make operational definitions for study.	These have bee defined	reference is page 2
3	Clearly say 50% of the population under study not just 50%	Action Taken	Pg 25
4	specify what knowledge exactly you are looking for eg mode of transmission	Action Taken	Pg VII
5	You may modify the study by using the health belief model to guide your research instead of just a conceptual framework	Action Taken	Pg 8
6	Get clear understanding of Hep B and how it is transmitted. How easily can it be transmitted between the bodabodas and passengers?	Action Taken	Pg 8
7	Please include the limitations to improve your study.	Action Taken	Pg 36

Candidate	Supervisor
Name: Namusubo Waiyomu Angel Barbara	**Name:** Stephen Semujju
Signiture:	**Signiture:**