

**FACTORS INFLUENCING PREVALENCE OF HEPATITIS B VIRAL INFECTION AMONG
ADULTS: A CASE STUDY OF MOYO TOWN COUNCIL, MOYO DISTRICT**

BY

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DECLARATION

I Lulu Patrick Madrama, hereby declare that this research report is my original work and has not been presented in any University for another academic award and all sources of information used in the dissertation are clearly acknowledged as complete references.

Researcher's Name.....

Signature

Date.....

DEDICATION:

This dissertation is dedicated to the Almighty God for making me who I am today and to my beloved parents, My father Mr.Madrama Lawrence and my late mother Mrs.Martha Madraa for the endless love they gave in raising me up (May her soul rest in peace).

Dedication also goes to my dear brothers and sisters for the courage and support they have provided to me during my studies, and to all my dear relatives and friends.

APPROVAL

This research work on Factors influencing prevalence of Hepatitis B viral infection among adults aged (18- 45 years) in Moyo district has been closely supervised by Mr. ALEGE John Bosco as assigned by International Health Sciences University.

Supervisor's Name.....

Signature.....

Date.....

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS:	Acquired immune deficiency syndrome
CDC:	Centers of Disease Control
CHB:	Chronic hepatitis B
CI:	Confidence interval
DISH:	Delivery of Improved Services for Health
EPI:	Expanded program on immunization
HBsAg:	Hepatitis B surface Antigen
HBV:	Hepatitis B Virus
HIV:	Human immune Virus
HSPR:	Health Sector Performance Report
HSSP:	Health Sector Strategic Plan
IHPM:	Institute of Health Policy and Management
IHSU:	International Health Sciences University
IOM:	Institute of Medicine
MHBPHC:	Minority Health and Bureau of Primary Health Care
MoH:	Ministry of Health

MTC:	Moyo Town Council
NICE:	National institute for Health and care Excellency
SPSS:	Statistical Package for Social Sciences
UDHS:	Uganda Demographic Health Survey
UNDP:	United Nations Development Program
uOR:	Unadjusted Odds Ratio
UPDF:	Uganda People's Defense Forces
USDHHS:	United States department of health and human services
WGO:	World Gastroenterology Organization
WHA:	World Hepatitis Alliance
WHO:	World Health Organization

OPERATIONAL DEFINITIONS

Carrier : Carrier of Hepatitis is a person who has hepatitis B virus in blood for more than 6

Months, with no symptoms and has the ability to infect others with the virus without their knowledge.

Cirrhosis: A chronic liver disease characterized by nodular regeneration of hepatocytes and diffused fibrosis.

Co infection: This is a simultaneous presence of two or more infections which have the potential of increasing the severity and duration of one or both (Segen's Medical Dictionary).

Endemic: This refers to a disease or an infection which is constantly present to a greater or lesser extend in people of a certain particular class or living in a certain particular geographical location (Farlex, 2012).

Fulminant Hepatitis: This is a fatal form of acute Hepatitis B in which patients' conditions deteriorates very first involving hepatic encephalopathy, necrosis of the hepatic parenchyma, renal and coma (Mosby's Medical Dictionary, 8th edition).

Hepatocellular carcinoma: A Cancer that starts in liver.

Prevalence: The number of old and new cases of a disease present in a Particular Population at a given time.

Vaccine: An antigenic preparation used to produce active immunity to a disease to prevent the effect of infection with natural organism or living strains of viruses or bacteria.

ABSTRACT

Introduction: Hepatitis B viral infection is a significant global public health problem, highly contagious and a cause of the world's most common liver infection. In Uganda, HBV infection is highly endemic with national prevalence of about 10% (WHO, 2010). Vaccines were introduced in Uganda since 2002 and was expected to give 90- 100% protection against HBV infection (WHO, 2012), yet in 2010, 14 people out of 20 cases reported in the district hospital of Moyo died of the HBV infection (Warom, 2013).

Objectives: The study was conducted to determine the individual, socio-economic and health facility factors influencing prevalence of HBV infection among adults aged (18-45 years) in Moyo town council, Moyo district.

Methods: In this research a cross sectional study design was used where 348 respondents in MTC, Moyo district were involved. Sample size was determined using Cochran's formula based on an assumption that 50% of the adults aged 18- 45 years in Moyo district were knowledgeable about HBV infection, 5% marginal error, and a non-response rate of 10% was used. Multi-stage sampling procedure was used and data collection was done using researcher administered questionnaire and Key Informants Interview guide. The responses were then entered in SPSS 16.0 within which it was statistically analysed using chi- square statistical test values, those considered significant with a ($p < 0.05$) were further analysed at bivariate logistic regression.

Results: According to the study, age groups between 24- 35 had the highest number of respondents infected with HBV 163(42.4%) that accounts for 16 out of the total number 29 of those who were infected. Secondary education was associated with prevalence of HBV infection (uOR= 2.607, 95% CI: 0.998- 6.807, $p = 0.050$), those who said HBV is not airborne were more likely to get infected of HBV compared to those who said HBV is not airborne (uOR= 8.557, 95% CI: 1.117- 65.532, $p = 0.039$), respondents who reported that HBV is got through sharing utensils were less like to be infected (uOR= 0.354, 95% CI: 0.129- 0.973, $P = 0.044$) and those who admitted that condom use prevents them from enjoying sex (uOR= 0.303, 95% CI: 0.094- 0.977, $p = 0.046$) were more likely to get infected of HBV compared to those who said that condoms were not available (uOR= 0.239, 95% CI: 0.098- 0.584, $p = 0.002$).

Conclusion: Level of education was significant in relation to the prevalence of HBV, Knowledge deficiency among respondents and those who said that condoms prevent them from enjoying sex were more likely to get infected of the HBV and were contributory factors to the high prevalence of HBV infection in the district, therefore there is need for community sensitization, screening and vaccination.

Recommendation: There is need for training of all health workers to increase their knowledge on HBV infection, community sensitization on the transmission routes and prevention of HBV, lobbying for funds from government and non- governmental organizations in order to acquire screening test kits and vaccines for HBV for mass screening and vaccination of the community

CHAPTER ONE: INTRODUCTION

1.0 Introduction:

This chapter constitutes; background to the study, statement of the problem, research objectives and questions, significance of the study and conceptual framework.

1.1 Background to the study:

Hepatitis B viral (HBV) infection is a major public health problem worldwide and estimates show that about 30% of the world's population that is close to 2 billion people are infected with the virus, and about 350 million of them remaining chronically infected and therefore carriers of the virus causing global burden known to be a cause of more than one million deaths (Kane, 1996; WHO, 2007).

Hepatitis B is the world's most common liver infection caused by highly contagious virus (50- 100 times) more infectious than HIV and the most common ways of transmission are through unprotected sex, unsafe blood transfusion, unsafe use of needles, from mother to child at birth, close household contacts and between children in early in childhood (WHO, 2012).

Vaccines for HBV were introduced in 1982 and was integrated in the EPI, it was expected to give 90- 100% protection against the infection, but there is still a global challenge were more than 350 million are living with chronic Hepatitis B and approximately 600,000 HBV related deaths per year globally Dunford *et al* (2012); (WHO, 2012) with the most unrelenting health problem found in Africa and developing areas of the globe Seo *et al.* (2008).

Sub- Saharan Africa is the second endemic area of HBV with about 500million carriers (liver international, 2005), with a prevalence that is 10 times more than the Western world associated with 4% and 5.8% of deaths in south Africa and Nigeria respectively, and the whole region sharing

about 25% of the total burden of Hepatitis B and chronic carriers of 65 million (Centre for viral research, Kenya, African Medical and Research Foundation)

North African countries including Egypt, Libya, Tunisia, Algeria, and morocco have an intermediate rate of HBV infection ranging from 2 to 8% according to CDC, whereas the current rate of the infection within the whole Sub- Saharan region ranges between 8 to 20% with the main transmission route being like that of Asia, that is early childhood transmission and contaminated medical equipment.

In Uganda, HBV infection is highly endemic, with national prevalence of about 10%(3.3million) according to WHO 2010, although the distribution of the virus varies from region to region with the northern Uganda having the highest prevalence, 21% in the North Western part of Uganda (MoH, 2012) and 25%in the North, 4% registered in South Western Uganda, Kampala rate varies between 6% to 7%, Kasese at 10%, although it is not yet clear why this variation occurs (Ocama, 2013).

HBV vaccine was introduced in Uganda in 2002 in accordance with WHO recommended strategy and was included as part of EPI, which involved the introduction of HBV sero-survey to be conducted among adults aged 15- 59 years and children under five years of age (WHO, 2002)

1.2 Statement of the Problem

The Annual Health Sector Performance Report 2011/2012 indicated that 235 cases of HBV were detected in the districts of Arua, Kitigum and Lira, with a regional prevalence of 21% (MoH, 2012). The Prevalence of HBV infection in the general population in Uganda is about 10% (WHO, 2012). Adjumani Hospital reported 90 cases of HBV in the last three years with eight deaths (Benon, 2014).

Moyo district reported 16 deaths since July 2012 to 2013 (Warom, 2013) and Out of the 193 people screened in 2013 in one of the private health facilities, 23 were found positive with the virus. In 2010, 14 people out of 20 cases reported in Moyo hospital died of the HBV infections (Warom, 2013).

Ideally, all adults at risk of acquiring the virus are supposed to be screened and vaccinated against HBV as it is about 95% effective due to the development of hard immunity, hence preventing the infection and its chronic consequences from occurring. (CDC, 2010; NICE, 2012; WHO, 2013).

Despite the introduction of Vaccines against HBV in Uganda in the year 2002 which was expected to give 90- 100% protection against the infection (WHO, 2012), injection safety measures put in place by the government and availability of screening programs in some private health facilities, the prevalence of the HBV infection continues to increase and if no action is taken, it may result to increased morbidity and mortality caused by liver cirrhosis or liver cancer Dun ford *et al*(2012); (WHO, 2012).

Therefore, this study seeks to determine factors influencing prevalence of Hepatitis B viral infection among adults aged (18 -45 years) in Moyo town council, Moyo district.

1.3 Research Objectives

1.3.1 General Objective

To determine factors influencing prevalence of Hepatitis B viral infection among adults aged (18 - 45 years) in Moyo town council, Moyo district.

1.3.2 Specific objectives

- i. To determine individual factors influencing prevalence of Hepatitis B viral infection among adults aged (18- 45 years) in Moyo town council, Moyo district.
- ii. To assess socio economic factors influencing prevalence of Hepatitis B viral infection among adults aged (18- 45 years) in Moyo town council, Moyo district.
- iii. To assess health facility factors influencing prevalence of Hepatitis B viral infection among adults aged (18- 45 years) in Moyo town council, Moyo district.

1.4 Research Questions

- i. What are the individual factors influencing prevalence of Hepatitis B viral infection among adults aged (18 -45 years) in Moyo town council, Moyo district?
- ii. What are the socio economic factors influencing prevalence of Hepatitis B viral infection among adults aged (18- 45 years) in Moyo town council, Moyo district?
- iii. What are the health facility factors influencing prevalence of Hepatitis B viral infection among adults aged (18- 45 years) in Moyo town council, Moyo district?

1.5 Significance of the study

The study seeks to determine factors responsible for high prevalence of Hepatitis B viral infection in Moyo district.

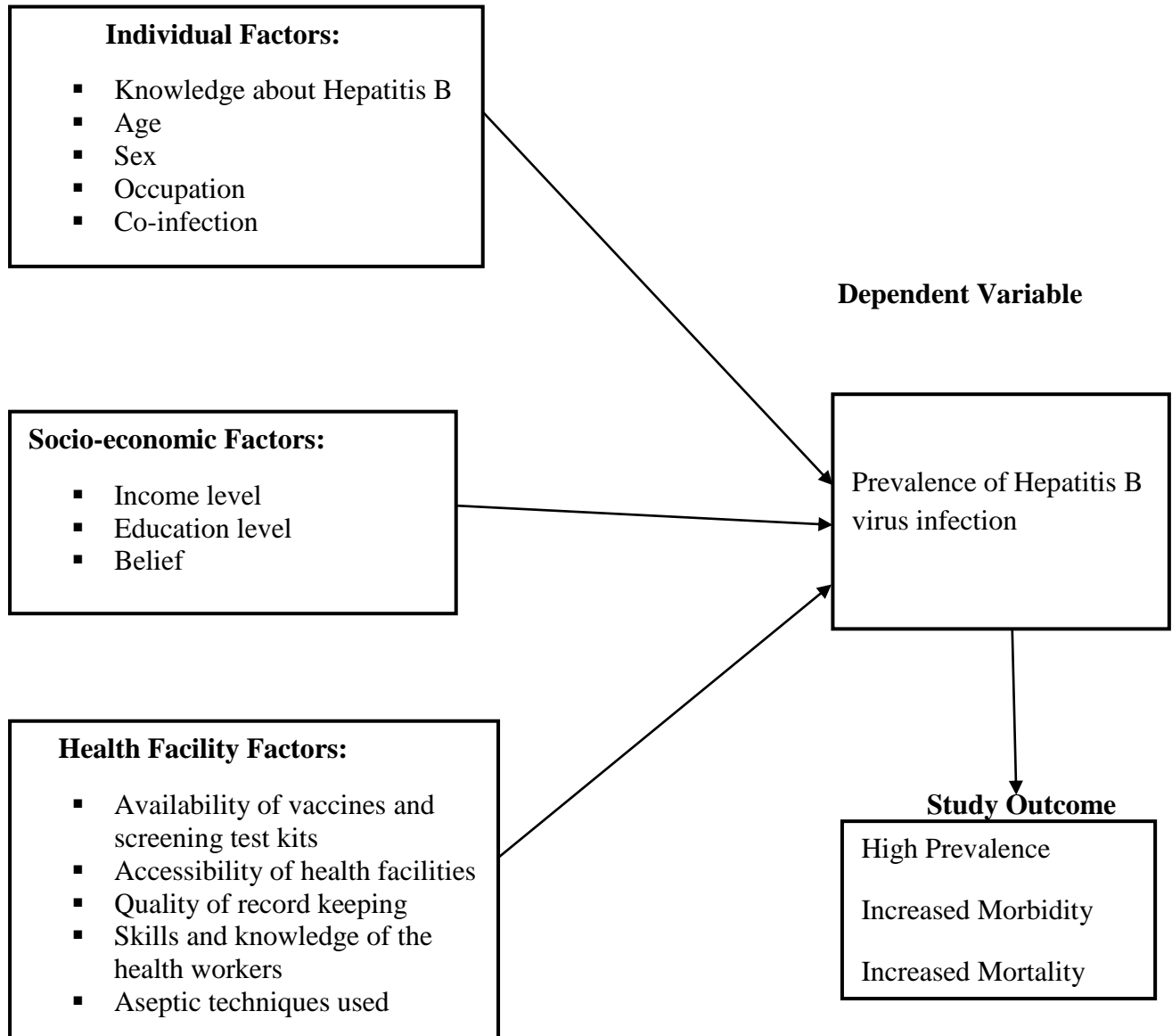
The study may also contribute to the provision of specific action plans to local government and the MoH to address the current problem of HBV infection in the West Nile region and Uganda at large.

The findings from this study may be used to inform policy formulation, health care workers and the general public on preventing Hepatitis B virus infection in Moyo district and the whole country.

This study may also serve as a basis for carrying out further research in areas where Hepatitis B viral infection prevalence is high, especially like that of the West Nile region.

1.6 CONCEPTUAL FRAMEWORK

Independent Variables



Prevalence of Hepatitis B virus infection is the dependent variable and factors influencing the prevalence of Hepatitis B virus infection, like individual factors, socio economic factors and health facility factors are the independent variables.

CHAPTER TWO: LITERATURE REVIEW

2.0: INTRODUCTION

In Chapter of this study, available and related literature on similar studies, reports, including resolutions from national and international bodies have been discussed to establish the existing gaps in the prevalence of Hepatitis B viral infection.

2.1: Prevalence of hepatitis B viral infection

More than 2 billion people worldwide are infected with the HBV, above 240 million chronic carriers and about 600,000 HBV related deaths occurring each year, including 4.5 million new cases of HBV infection each year (WHO, 2013).

Despite public recommendations for increased screening and reducing the cost of treating HBV infection and correlated end stage illnesses, each year an estimated 3000 people in United States die of hepatitis B related liver disease and about 43,000 people getting infected each year (CDC, 2010), including 1,000 infants who will acquire the infection at birth from HBV positive mothers (IOM, 2010).

About 30% of the cases of cirrhosis worldwide are fully attributed to chronic HBV Hu *et al*, (2011), as it is one of the most serious infections Fattovich *et al*. (2004); El- Serag, 2012), with close to 1.4 million chronically infected in the United States every year Weinbaum *et al*,(2009); Nguyen *et al*,(2012) as millions of them have been born in countries with intermediate to high prevalence of HBV (Mitchell, Armstron, Hu, Wasley and Painter, 2011).

According to the studies carried out in greater San Francisco Bay area where the majority of Asian-Americans stay, over 90% and 85% of men and women respectively suffered from primary liver cancers due to HBV Chag *et al*, (2007).

Nakamo *et al*, in 2001 revealed that the prevalence of HBV is high in the Asian countries, including China, Japan, Thailand, Korea and Indonesia with infection rate ranging between 5% to 10% in the general population, with the prevalence of China being up to 19 % Zhou *et al* (2000).

The number of people with chronic hepatitis B have been on increase over the years, from 180,000(Foundation for Liver Research, 2004) to 326,000(Hepatitis B Foundation, 2007) as a result of migration to the United Kingdoms from areas of high prevalence.

According to the Indian National Association for the study of Liver Diseases, the average national prevalence rate of HBV is about 4.7%, with the lowest prevalence being 2.3% in large cohort of 20,000 blood donors in northern India and highest rate of about 5.7%.

It has also been noted that Asians have the highest proportion of HBV infected persons (The hepatitis B foundation, 2013), with Vietnam being an endemic area as in many other Asian counties Dunford *et al*, (2012).

About 8 – 25% of the Vietnamese are chronic carriers of hepatitis B which accounts for approximately 8.4 million individuals (Bui, 2002; Nguyen, McLaws and Dore, 2007), this resulted in HBV- related mortality of 23,300 people per year in Vietnam (Dunford, 2012).

Evolutionary Dynamics of HBsAg in two communities showed prevalence being 10- 40 % Forbi *et al*, (2010).

The prevalence of HBV in Gambia and Senegal was about 15% with age specific prevalence as high as 20% in 10 to 20years old (WHO).

In the Sudan, more than 5% of blood donors are chronically infected with HBV with 5- 7% having HBsAg Mahgoub *et al*, (2011).

According to center for viral research, Kenya African Medical and Research Foundation, the prevalence of HBV infections in Sub Saharan Africa is 10 times more than in the Western world, associated with 4% and 5.8% of deaths in South Africa and Nigeria respectively and the whole region sharing about 25% of the total burden of Hepatitis B and chronic carriers of 65 million.

The national prevalence in Uganda is about 10% (WHO, 2014), but the distribution of the HBV infection are different from every region, northern Uganda has the highest prevalence (25%), (19%) in the North West and(4%) South Western , the HBV infection within Kampala varies between 6% to 7% and Kasese at 10%, (Ocama, 2013).

The former health minister, Hon. Dr. Christine Ondo, noted that the country had registered an outbreak of HBV infections, Hepatitis E, Typhoid fever, Cholera and Rabies from different parts, with the most prevalent outbreak being that of HBV infection, reported from the districts of Kitgum and Lira and out of the 99 suspected patients in Kitgum. 18 had tested positive and three died, two admitted in kitgum hospital, while Lira had reported 8 patients confirmed with HBV infection of whom 4 had died (MoH, 2011).

In Uganda between 2007 and 2011, 6,004 tests of hepatitis B were performed among clients visiting our centre and a total of 364 people were found positive with the disease, indicating a prevalence of 6.06 % (Mild may, 2012).

Out of 166 people screened at a subsidized cost during Hepatitis B awareness and screening drive at the monitor publication offices in Namwogo- kampala on Friday 25th july 2014, 10 were found positive with the virus (Namagembe, 2014).

Arua Government prisons registered 78 cases of HBV infections and tests carried out in other parts of Arua district in the same month indicated that out of 633 people tested, 62 male and 53 females were found with HBV (Benon, 2014).

A report from screening tests carried out by St. Benedict Medical Centre combined with Red Cross in Moyo revealed that out of 193 residents screened, 23 were found with the HBV (Arubaku. 2013).

2.2 Individual factors

Knowledge on hepatitis B viral infection

A study to determine knowledge on HBV among 256 Vietnamese Americans revealed that only 22% knew that HBV can be spread through unprotected sex, only a third of the participants were aware that there is vaccine that protects individuals against HBV (Ma and Co- workers, 2007).

More investigations done in Australia to determine HBV knowledge among Vietnamese where 433 men were considered revealed that half of them thought that sharing food and drink with an infected person is a risk factor for being infected with the virus (Vu and Co- workers, 2012).

According to Nasim *et al* (2011) as regards to a survey conducted in Karachi to assess knowledge on viral hepatitis among college girls only 57% had information about the transmission of hepatitis B virus.

In another study conducted by Mengal *et al* (2011) among nursing school, Bolan medical complex hospital, and Quetta reported that only 37.2% of them were completely vaccinated.

Chaudhry *et al* (2011) report indicated that in Pakistan about 97.4% of barbers at Islamabad use new blade for every customer but only 38% of them had knowledge about the route of infection of HBV.

However, Asif *et al* (2011) reported that only 17.6% of the rural populations of Nowshera in Pakistan were aware of the fact that Hepatitis B is transmitted by virus, and Talpur *et al* (2011) stated that there is a significant lack of knowledge and poor attitude towards HBV in surgical patients at Nawabshah area.

The Asian Americans population lack knowledge and awareness of chronic HBV, Mitchell, Colvin and Beasley, (2010), indicated that nearly two-thirds of persons infected with HBV were unaware of their status.

Immunization rates remain low in many populations including in the United States (ALS, 2011; OMH, 2008), this was because doctors serving these populations lacked sufficient knowledge about the hepatitis B or the Asian American community to effectively mitigate the risks of the disease (OMH, 2008).

The prevalence of Hepatitis B is high, but up to 90% of those affected are estimated to be unaware of their condition Merkinaite *et al.* (2008).

Age

The prevalence of HBV infection among 1579 individuals that included infants, Children, teenagers, adults up to 40 years old living in Vietnam, revealed that the prevalence of HBV infection was highest among teenagers (20.5%), followed by adults (18.8%) and infants (12.5%) meaning that the current or previous infection increased with age (Hipgrave and co- workers, 2003).

According to Rey-Cuille *et al*, (2012), in Senegal and Cameroon the prevalence of HBV infection in Senegal is 17% among blood donors, 60% exposure among Children between 0-5 years old and 14%, among pregnant women as compared to Cameroon where prevalence of HBV is 12% among pygmies, 20% among Children of primary school age and 25% among Children over 4 years old.

(WHO, 2008) report showed that the likelihood of HBV infection becoming chronic depends on the age at which the person has been infected.

It is estimated that 90% of infants exposed during their first days of life will develop chronic HBV and about 30 to 50% of whom may be between one to four years of age (WHO, 2008).

Moreno-John and Perez-Stable, 2004 revealed that there is a difference between African-American adults, in both their use of health care as well as their immunization rates (Adult Immunization Consensus Panel, 2003).

In Panama, New Guinea, the Solomon Island, and Greenland among the specific native populations, such as Alaska Indians, HBV infection rates among infants were relatively low, but increased rapidly in older children Hollinger *et al*, (2004).

Occupation

Studies revealed that 8% of HBV positive cases are related to be among people who have jobs related to blood or serum (Memon 2002).

In accordance to (Memon, 2002), frequent routine exposure to blood or serum is a common denominator of healthcare occupational exposure to HBV, this implies that surgeons, dentists, oral surgeons, pathologists, operating room and emergency room staff, and clinical laboratory workers.

who handle blood are at high risk and real transmission to patients from HBs Ag positive health care workers had been documented Alam *et al*, (2007).

Co infection

Between 2- 4 million HIV-infected persons are estimated to have chronic HBV co-infection, about 5-10% of HIV infected individuals are exposed to HBV, studies carried out in Western Europe and United States indicated that CHB infection prevalence among HIV-infected persons may be ten times or higher than that of the general population and the infection occurs 6-14% in HIV-infected persons of Western Europe and the United states, 4-6% among heterosexuals, 9-17% among men who have sex with men and 7-10% among injection drug users (WGO, 2008).

Despite the fact that Hepatitis B is one of the most frequent infections associated with blood transmission, it was the HIV epidemic that alerted the general public to the importance of serological tests in blood banks (Glynn, 2002).

IOM reported that HBV infections are 3-5 times more frequent than HIV in the United States (2010), between 1999 and 2007, recorded deaths from HBV increase significantly to 15,106 whereas death from HIV declined to 12,734 by 2007.

Hu *et al*, (2011) stated that individuals with a higher HBV DNA viral load have been associated with a higher risk of cirrhosis and Hepatocellular Carcinoma.

The odds of HBV related deaths are increased subsequently by chronic liver disease, Hepatitis C co-infection, Asian Pacific Islander descent, HIV co-infection, and Alcohol-related conditions and most of these deaths from HBV and HCV occur in the middle age Ly *et al*, (2012).

2.3 Socio economic factors

Income level

Karim *et al*, (1991) noted that different parts of the world show different characteristics of the population as regards to the sanitary conditions, lifestyle, hygiene; risk and socio-economic factors are related to the large variations in the frequency and the prevalence of HBV infection.

According to Nwokediuko Sc. (2011) the critical problem in the management of CHB is the high cost of laboratory tests and drugs, drugs are also not readily available, it is very important to provide awareness campaigns, health education, proper screening of blood and blood products for transfusion, active screening, intensification of the existing childhood immunization, technical and financial assistance from wealthier nations, and implementation of the recommendations outlined in the Global Hepatitis Policy(2010).

According to a study carried out in a town of the state of Sao Paulo, Brazil, in which risk factors had been evaluated, the individuals from rural areas with worse social conditions were found to be at higher risk of HBV infection Passo *et al*, (1993).

In endemic regions, intra familial transmission of HBV has been shown to be an important route of the virus dissemination in households with low socio-economic status Karim *et al*, (1991), Passos *et al*, (1993).

Homeless people also have an increased evidence of exposure to hepatitis B with a prevalence of anti-HBc 9% in according to a study carried out in Dublin between 1999 and 2000 (O' Carroll, 2008).

The prevalence of Hepatitis was found to be lowest in countries with the highest standards of living, including Great Britain, Canada, United States, Scandinavia and other European countries (Glynn and Kleinman, 2002)

Although Asian and Pacific Islander Americans together account for only 5% of the total population of the United States, they still represent more than half of the 1.2 million – 1.5 million estimated cases of HBV in the country (ALC, 2011; OMH, 2008)

The ethnicity and country of origin indicated that 5- 15% of Asian and Pacific Islander American immigrants are chronically infected (ALS, 2011), these disparities are in line with HBV-related morbidity and mortality rates (USDHHS, 2011).

The Healthy People 2010 reported that there exist disparities, gender, income, educational attainment and access to health and health insurance (U.S Department of Health Services, 2000).

Africa continent is considered a region of high endemicity and owns the second greater number of people infected with chronic HBV, out of about 450 million who live in the continent and more than 5 million are chronic carriers with about 12.5 million of them eventually dying from hepatic illnesses induced by HBV, giving a mortality risk of 25% (Kiire 1996).

Mild may a medical service organization providing antiretroviral therapy(ART) and other healthcare services to people living positively in Uganda noted that screening of the hepatitis B virus (HBV) and hepatitis C virus (HCV) is not routinely performed in Africa, largely because of the high costs associated with performing these tests, and subsequent treatment for positive cases.

Lukwago (2013) explained that those who can afford should access the vaccines of HBV at 80,000 Shillings on open market pharmacies and private clinics in the country or even at Mulago Hospital.

Education level

The most common confounding factors noted among Asian Americans as a major obstacle in receiving care is lack of fluency in English, and not understanding medical terminology (Tran, 2009).

Cultural beliefs

Ma *et al*, (2007) explained that health promotion, prevention and identification of these health beliefs may be important as health related behaviors deviate significantly in relation to these beliefs.

It is important to note that many Asians were reluctant about having their blood drawn as a result the belief that it will deplete the body of the removed blood and the body will be unable to replenish itself (Tran, 2009).

Pacific Islanders believed that the ideal concept of health has four components; the spiritual, psychological, physical, and relationship with the family; therefore illness can be attributed to the loss of ‘manna’, defined as special power or life force and if an imbalance of manna occurs, it may require restoration of these relationships within oneself, extended family, ancestors, the environment or one’s spirituality (MHBPHC, 2012).

In Malaysia, almost up five hundred million US dollar was being spent annually on traditional medicine (WHO, 1998).

2.4 Health facility factors

Accessibility of health facilities

Most sub-Saharan African countries including Asia are affected by shortage of health personnel that has led to poor management of healthcare facilities and clients or patients, showing a significant

correlation between the availability of good numbers of health workers and better health outcome (WHO, 2007).

In (2011) Hepat Mon revealed that there is lack of personnel in health facilities indicating doctor to population ratio in Nigeria as 3 per 10,000 compared to that of United States of America which stands at 26 per 10,000 , about 13,272 physicians trained in sub Saharan Africa are practicing in Australia, Canada, United Kingdom and the United States of America.

The HSSP III, 2010/11- 2014/2015 revealed that there is a shortage of health workers and skill imbalance within healthcare in Uganda as it is the case in other developing African countries and the situation is worse in the rural health facilities compared to that of urban areas.

DHS (1995), reported that more health workers are concentrated in the urban areas despite the rural population being higher than the urban population which is 15% over 80% doctors and 60% found in urban health facilities, this implies limited access to quality health care services by the population

The limited public transport in rural areas has a tremendous impact on the utilization of public health facilities (National Council for Children, 1994) and in urban areas the transport fare is expensive for the general population to afford Kirumira *et al*, (1993).

Moyo district has only one district hospital with 176 beds, 2 health centre (IV) , 4 private/ NGO dispensaries, 8 clinics, 14 Government dispensaries or Health centre(III) and 2 private HC III with a Doctor patient ratio 1: 118,000 below the recommended 1: 2500 (DHO Moyo, 2013).

Availability of vaccines and screening test kits

Another research carried out by WHO 2006 indicated that without sufficient medical supplies, adequately trained and supported health workers with good concern for patients, there is a significant risk of not attaining the health related Millennium Development Goals (MDGs).

A study conducted on users' satisfaction and understanding of clients need in (2008), revealed that clients were satisfied by physical access of the health services (66%), hours of services (71%), availability and affordability of services including all the health providers' skills and competencies among others.

According to the study carried out by (PATH, 2012), vaccine had been distributed across the country in Vietnam, but there was still challenge of storage, yet vaccine is supposed to be stored in a cool temperature between 2°C and 8°C which is difficult in the northern hard- to -reach areas and some women choose to give birth at home denying a chance for the baby to receive the first birth-day vaccine within 24 hours.

The fact that Hepatitis B is a silent infection causing no symptoms until there is severe damage to the liver, there is an urgent need for universal access to immunization, screening, diagnosis and antiviral therapy (Keiji, 2013).

There are inadequate vaccines in the district for carrying out vaccination of Hepatitis B among adults with no screening tests apart from private health facilities which are also expensive (DHO Moyo, 2013).

Aseptic techniques used

In (2004) Blackwell Publishing Ltd in its Journal of Viral Hepatitis noted that other sources of the HBV infection is associated with contaminated surgical instruments and donor organs.

In two nursing homes in Flanders, Belgium, four cases of acute hepatitis B infection recently detected have been linked to the multiple uses of blood capillary sampling ('finger stick') devices on diabetic patients. In addition, three outbreaks of hepatitis B in care homes for elderly residents, linked to poor infection control procedures during blood glucose monitoring and the incidences of hepatitis B transmission linked to blood glucose monitoring in care homes have been reported since the early 1990s (Euro surveillance, 2005).

Quality of record keeping

There is no global surveillance and reporting system standards for HHV infection, this contributes to lack of awareness and attention to viral hepatitis (Rantala and Van de Laar. 2008).

According to the World Hepatitis Alliance (WHA) Africa has few high-quality registers and majority of them only record cases in cities, where as hepatitis B prevalence is often highest in rural areas(WHA, 2010).

Knowledge of the health care providers

Institute of Medicine stated that recommendations must be emphasized on lack of provider awareness of at risk populations as an impediment to national efforts to successful control of HBV (Mitchell, Colvin and Beasley, 2010).

Jung et al, (2010) noted that health providers remain unaware of the treatments of HBV infection and do not treat their HBV – infected patients or refer them for treatment.

Another study conducted by Jung *et al*, (2010) estimated that about 84% of patients with HBV who were insured did not receive HBV treatment because health care workers did not initiate them.

Daley *et al*, (2009) conducted a survey of physician practices and found out that only 31% of the participating physicians reported routine assessment and vaccination of all adult patients for hepatitis B, the survey also found out that about one quarter of primary care providers' rate of identification and vaccination of HBV in high risk individuals is very low.

The knowledge of health care providers were also tested on the updated CDC HBV guidelines and it showed that nearly 60% of the providers accurately followed the CDC guidelines and 40% did not realize that heterosexual sex is the common route of primary infection among U. S born adults Foster *et al*, (2011).

Ma *et al*, (2007) commented the need for healthcare providers to understand the common routes of HBV transmission among Asian Americans, this includes vertical transmission during Childhood by chronic infected mothers to the newborn and horizontal transmission during childhood by chronically infected persons living in Asia or immigrating from endemic countries, including other recommendations for healthcare providers like health promotion of HBV education and the disease of HBV stigmatization Ma *et al*, (2007).

Investigations done among 250 health professionals at the China national conference professionals showed that knowledge and education was insufficient among the health care professionals where a third of the respondents did not know that chronic HBV infection is commonly asymptomatic or that it can lead to cancer of the liver, liver cirrhosis and premature death Chao *et al*, (2010).

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This Chapter consists of the following sub- sections; study population ,study design, sources of data, sample size determination, sampling procedures, study variables, data collection techniques, data collection tools, data processing and analysis, quality control and ethical considerations, limitations of the study and plans for the dissemination of the report.

3.1 Study Population

The study population includes all adults (18 -45 years) in Moyo town council, Moyo district.

This group was selected because they are probably more sexually active and involved in other risky lifestyles, working in different sectors and businesses making them possible targets for the virus.

3.2 Study Design

A cross-sectional study design was used to determine factors influencing prevalence of HBV infection among adults (18- 45 years) in Moyo Town council, Moyo district. This study required identification of a defined population at a particular point in time and current events were recorded.

Both quantitative and qualitative data collection techniques were used. Quantitative method was used to establish if there is an association between the independent and dependent variables and qualitative method used to provide an in-depth description of the experiences of the respondents.

3.3 Sources of Data

The sources of information were both primary and secondary data.

Primary data was collected directly from the respondents or the population under study.

Secondary data was collected from the district health office, Moyo hospital records, and from the review of other literatures as explained in chapter two.

3.4 Sample size calculation

The sample size was determined by an assumption that 50% of the adults (18-45 years), a case study of Moyo town council sub-county in Moyo district were knowledgeable about the factors influencing the prevalence of HBV infection, with 5% marginal error and 95% CI and a non-response rate of 10%. Based on this assumption, the actual sample size for the study was determined using the formula for single population proportion developed by

$$\text{Cochran (1963:75) i.e. } n_0 = \frac{Z^2 pq}{e^2}$$

Where n_0 = sample size, Z^2 = z value corresponding to a 95% level of significance which is 1.96

P = expected proportion of the factors influencing the prevalence of HBV infection among adults (18- 45 years) = 50% = 0.5

$q = (1-p) = (1-0.5) = 0.5$ and d or e is the desired level of precision or the margin error/ absolute precision = 5%

Non response rate = 10%

Therefore, from the above formula, the sample size would be;

$$n_0 = \frac{1.96^2 \times 0.5 \times 0.5}{0.05 \times 0.5} \quad \mathbf{n_0 = 384}$$

3.4 Sampling Procedure

Multi-stage sampling technique was used to obtain participants for the study. The population in Moyo Town Council was divided into primary and secondary sampling units, parishes and villages were primary and secondary sampling units respectively. Under each stage, the units for the study were selected using random sampling procedure.

Systematic sampling procedure was used to obtain the households from the selected villages, this was possible with the help of research assistants who have more knowledge of the study area, the house holds that participated in the study were picked by making numbers of households from 1 to 3, then every second household on the list was selected through the systematic random sampling approach, and in each of the selected households, those adults who fulfilled the inclusion criteria were selected and interviewed.

3.5 Study variables

3.5.1 Dependent variable

Prevalence of Hepatitis B virus infection, respondents were requested to mention the type of STIs they had ever had and the number of those who said that they were positive with HBV after obtaining laboratory results were then noted.

3.5.2 Independent Variables

Individual factors influencing prevalence of Hepatitis B virus infection, units of measurement included knowledge about HBV, age, sex, occupation and co-infection.

Socio economic factors influencing prevalence of Hepatitis B virus infection, units of measurement included income level, education level and cultural beliefs of the respondents.

Health facility factors influencing prevalence of Hepatitis B virus infection, units of measurement were availability of vaccines and screening test kits, accessibility of health facilities, quality of record keeping, skills and knowledge of health workers on HBV and aseptic techniques used in the health facilities.

3.6 Data collection techniques

Data was collected through the use of structured questionnaires and Key Informant Interviews.

3.7 Data collection tools

Researcher administered questionnaires were used to collect data from respondents on factors influencing prevalence of Hepatitis B in Moyo district.

Key Informants Guides were used to obtain information from the Key informants who were officials from the district health office, ward in charges and departments within Moyo hospital and MTC Health office.

3.8 Plan for data analysis

The collected data was sorted manually and questionnaires were numbered from the first to the last. The data was then summarized on data entry sheet and the processed data was analyzed using SPSS version 16.0 software. Data was presented in a narrative summary, tables and pie-chart. Data on specific objectives were analyzed to establish the association between the independent and dependent variables.

3.9 Quality control issues

Pre-testing to ensure quality, validity and reliability, using data collection tools by the researchers in Moyo town council sub-county, Moyo district, and adjustments were made in reference to the responses obtained during the pre- testing process.

Translation of the Data collection tools into the local language by Research assistants who speak both English and Madi, at least senior four and senior six leavers were selected.

Training of Research Assistants on how to create rapport with respondents, trained on data collection procedures and reassurance of respondents.

This was to ensure correctness of recorded data and the consistency of the research assistants.

Correction of missing data was done within a day and where corrective measures were not application; such questionnaires were removed from the study.

3.10 Selection criteria

This study considered all adults (18-45 years) in Moyo Town council, Moyo district.

3.11 Inclusion Criteria

All adults aged (18-45 years) who were residents of Moyo Town council, Moyo district.

All adults aged (18-45 years) who met the inclusion criteria and had stayed in Moyo district for the last one year.

Adults aged (18- 45 years) who had consented to participate in the research activity.

3.13 Exclusion criteria

Insane adults aged (18-45 years) who met the inclusion criteria.

All those below 18 years of age within Moyo district

Those in the inclusion criteria but did not consent to participate in the study.

3.14 Limitations of the study

Recall bias; some of the respondents were unable to remember if they had finished their doses of the HBV vaccines or not.

Some of the respondents also did not know if their children had been immunised against HBV or not.

3.15 Plan for dissemination

A copy of the research report shall be submitted to IHSU management, a second copy to IHSU Library

Another copy of the research report shall be submitted to the District Health Office, Moyo District.

3.16 Ethical issues

Consent were obtained from the respondents, the aim and method of carrying out the research study were clearly explained to them and assured of their safety.

Confidentiality of the respondents was assured; this included non-inclusion of names, and other health related issues concerning the client or respondent.

Respect for respondents was assured and there was clear indication of full autonomy by the respondents to participate in the research, including full respect for their personal views and that all data obtained will be anonymous and only used for the purpose for which is intended.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0: INTRODUCTION

This chapter consists of presentation of data as per the research objectives and questions. In this study 384 respondents were interviewed and they consisted of adults (18- 45years) years of age. The data was analyzed using SPSS, computer software used for statistical analysis for cross tabulation and bivariate analysis of significant variables. The responses obtained were representative of the respondents in the study area.

4.1: Socio-demographic Characteristics:

In this study 384 respondents aged 18- 45 years participated, with almost an equal number of participants in all the age groups. Respondents between 18- 23 years were the highest in number 97(25.3%) followed by the age group 24- 35 with 93(24.2%), 30- 35(22.4%) and 40-45(20.1%), whereas age group 36-39 had the least number of respondents 31(8.1%). Females respondents 200(52.1%) were slightly higher than male respondents 184(47.9%). Married people had the highest number of respondents 179(46.6%) followed by those who are single 140(36.5%) with the least being Widowers 2(0.9%). In regards to education level, the majority of respondents had reached at least secondary level, 140(36.5%) secondary, tertiary 112(29.2%), the least being 27 (7.0%) were those who had never gone to school. Regarding employment status of the respondents, the majority of those who participated in this study were adults who were engaged in subsistence farming, business and construction work 276 (71.9%) followed by health care workers 58(15.1%).

Table 1: Socio-demographic characteristics of respondents

Variable	No. (384)	Percentage (%=100)
Age group		
18-23	97	25.3
24-29	93	24.2
30-35	86	22.4
36-39	31	8.1
40-45	77	20.1
Total	384	100
Gender		
Male	184	47.9
Female	200	52.1
Total	384	100
Marital Status		
Married	179	46.6
Cohabiting	26	7.0
Single	140	36.5
Divorced	25	6.5
Widow	11	2.9
Widower	2	0.9
Total	384	100
Level of Education		
None	27	7.0
Primary	105	27.3
Secondary	140	36.5
Tertiary	112	29.2
Total	384	100
Employment Status		
Health care work	58	15.1
Teaching/ Instructing	27	7.1
Barber Solon	23	6.1
Others Specify	276	71.9
Total	384	100

4.2: Association between socio-demographic factors and prevalence of HBV infection:

The majority of respondents were married 179(46.6%), followed by those who were single 140(36.5%) and the least being widowers 2(0.5%) and there was no statistical significant relationship between age, gender, marital status and the prevalence of HBV infection ($p > 0.05$).

Out of 384 respondents, 140(36.5%) had reached secondary education level and tertiary 112(29.2%) had reached tertiary with least number of respondents who did not attend any school in their life time 27(7.0%) and the results indicated a statistical significant relationship between education level and the prevalence of HBV infection ($\chi^2=9.096$, $p= 0.028$)

Table 2: A Cross Tabulation showing association between socio-demographic factors and prevalence of HBV infection

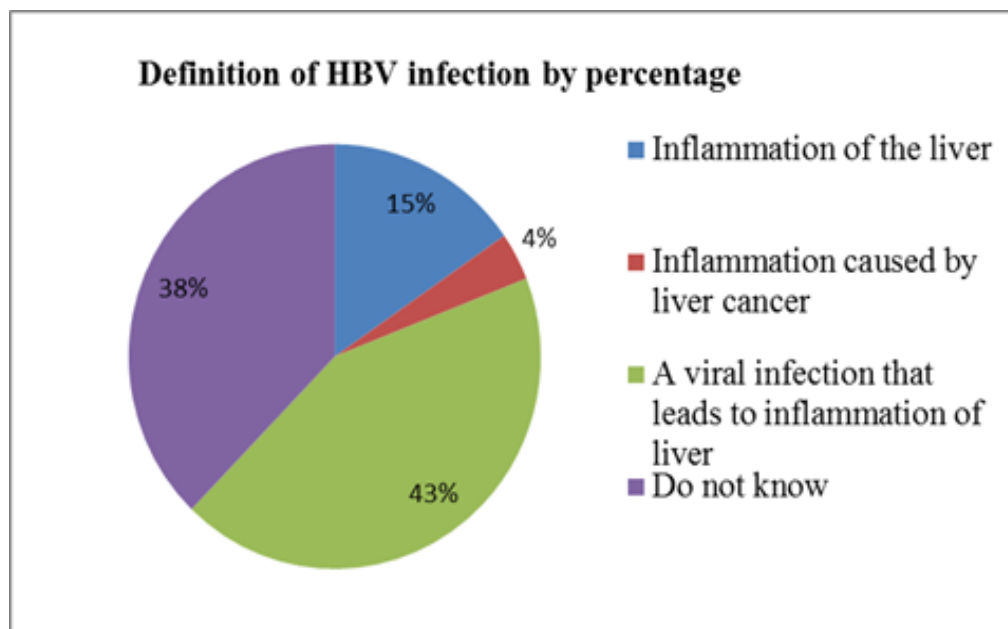
Variable	No (355)/%	Yes (29)/%	Total (384)/%	Chai- Square (χ^2)	p-value
Age group				4.156	0.385
18-23	93(24.2)	4(1.0)	97(25.3)		
24-29	87(22.7)	6(1.6)	93(24.2)		
30-35	76(19.8)	10(2.6)	86(22.4)		
36-39	29(7.6)	2(0.5)	31(8.1)		
40-45	70(18.2)	7(1.8)	77(20.1)		
Gender				1.492	0.474
Male	167(43.5)	17(4.4)	184(47.9)		
Female	187(48.7)	12 (3.1)	199(51.8)		
Marital Status				7.846	0.165
Married	166 (43.2)	13(3.4)	179(46.6)		
Cohabiting	26(6.8)	1(0.3)	27(7.0)		
Single	131(34.1)	9(2.3)	140(36.5)		
Divorced	22(5.7)	3(0.8)	25(6.5)		
Widow	8(2.1)	3(0.8)	11(2.9)		
Widower	2(0.5)	0(0.00)	2(0.5)		
Education level				9.096	0.028*
None	26(6.8)	1(0.3)	27(7.0)		
Primary	101(26.3)	4(1.0)	105(27.3)		
Secondary	122(31.8)	18(4.7)	140(36.5)		
Tertiary	106(27.6)	6(1.6)	112(29.2)		
Employment status				6.585	0.160
Health Care Worker	57(14.8)	1(0.3)	58(15.1)		
Teaching/ Instructing	24(6.2)	3(0.8)	27(7.0)		
Barber	19(4.9)	4(1.0)	23(6.0)		
Others	254(66.1)	21(5.5)	275(71.6)		

4.3: Individual factors influencing prevalence of HBV infection:

4.3.1: Definition of HBV infection

Knowledge of respondents were tested by asking them to define HBV infection, 43% of them gave the right definition, while 57% cumulative of those who said HBV infection is the inflammation of the liver 15% inflammation caused by liver cancer 4% and those said they did not know 38% were un able to give the right definition of HBV infection as shown in figure 1.

Figure 1: Showing definition of HBV infection by percent:



4.3.2: Prevalence of hepatitis B viral infection:

In this study, out of the 384 respondents interviewed, 29 (7.6%, 95%CI: 5.1-10.7) had reported that they have Hepatitis B viral infection.

About 10 – 15% of the population in the district is infected of HBV, although majority of the population was not yet screened and vaccinated and some of the reasons could be lack of knowledge about the virus, lifestyle of the people, income level of the people and lack of vaccines... (K I....1)

Table 3: prevalence of hepatitis B viral infection in Moyo district:

Variables	Frequency	Percentage(95% CI)
Prevalence of Hepatitis B viral infection		
Yes	29	7.6 (5.1- 10.7)
No	355	92.4 (89.3- 94.9)
Total	384	100.00

4.3.3: Association between individual factors and prevalence of Hepatitis B Infection:

As per whether respondents had heard about HBV, the majority 338(88.0%) of them said that they had heard about HBV, only 46(12.0%) of the respondents did not hear about HBV.

Out of the 384 respondents, 166(43.2%) of them knew what HBV infection is, 145(37.8%) of them had no idea about HBV, 59(15.4%) and 14(3.6%) respectively gave incorrect answers. These results however indicated significant statistical relationship between knowledge about the definition of HBV infection and its prevalence ($\chi^2= 10.311$, $p=0.016$). 135(35.2%) of the respondents thought HBV infection can be inherited through genes, 117(30.5%) and the remaining number of the respondents were not aware whether HBV infection can be inherited or not

132(34.4) ($\chi^2= 19.546$, $p= <0.001$). 166(43.2%) of the respondents were aware that HBV infection is not airborne, 142(37.0%) thought it is airborne while 76(19.8%) of the respondents did not know whether it is airborne or not.

However, the majority 237(61.7%) of respondents said that HBV infection can be got through having sexual intercourse with a person infected with the virus, 64(16.7%) of them believed it cannot be sexually transmitted and 83(21.6%) of the respondents did not know whether HBV infection can be transmitted through sexual intercourse or not.

Whether HBV infection can be got through sharing utensils, like cups and spoons, more than half 224(58.3%) of the respondents said one can get infected through sharing utensils, only 100(26.0%) of them were aware that HBV infection is not got through sharing utensils and 60(15.6%) declared that they did not know the means of transmission.

In relation to number of sexual partners, 143(37.2%) of the respondents interviewed said they had had one sexual partner, and respondents who had or are having three to four sexual partners had the highest number 8(2.1%) of people infected with virus. However, results indicated significant statistical relationship between those who were aware of the definition of HBV infection ($\chi^2= 10.311$, $p= 0.019$), whether HBV infection is inherited through genes ($\chi^2=19.546$, $p= <0.001$), or whether it's airborne ($\chi^2= 5.960$, $p= 0.033$), having knowledge about whether HBV infection can be transmitted through sexual intercourse ($\chi^2=8.169$, $p= 0.017$), through sharing utensils ($\chi^2=7.348$, $p= 0.025$), then number of sexual partners ($\chi^2=11.252$, $p= 0.021$) and the prevalence of HBV infection among adults aged 18- 45 years.

Table 4: Cross Tabulation showing association between individual factors and prevalence of Hepatitis B among adults (18-45 years)

Variable	No(355)/%	Yes(29)/%	Total(384)/%	Chai-Square(χ^2)	P-value
Have you ever heard about HBV?				0.955	0.620
Yes	311(81.0)	27(7.0)	388(88.0)		
No	44(11.5)	2(0.5)	46(12.0)		
What is HBV infection?				10.311	0.019*
Inflammation of the liver	49(12.8)	10(2.6)	59(15.4)		
Inflammation caused by liver cancer	12(3.1)	2(0.5)	14(3.6)		
A viral infection that leads to the inflammation of the liver	157(40.9)	9(2.3)	166(43.2)		
Do not know	137(35.7)	8(2.1)	145(37.8)		
Do people inherit HBV?				19.546	<0.001*
Yes	106(27.6)	11(2.9)	117(30.5)		
No	121(31.5)	14(3.6)	135(35.2)		
Do not know	128(33.3)	4(1.1)	132(34.4)		
Is HBV airborne?				5.960	0.051
Yes	131(34.1)	11(2.9)	142(37.0)		
No	149(38.8)	17(4.4)	166(43.2)		
Do not know	75(19.5)	1(0.3)	76(19.8)		
Is HBV got through sexual intercourse?				8.169	0.017*
Yes	225(58.6)	12(3.1)	237(61.7)		
No	54(14.1)	10(2.6)	64(16.7)		
Do not know	76(19.8)	7(1.8)	83(21.6)		
Is HBV through sharing utensils?				7.348	0.025*
Yes	214(55.7)	10(2.6)	224(58.3)		
No	88(22.9)	12(3.1)	100(26.0)		
Do not know	53(13.8)	7(1.8)	60(15.6)		
Number of sexual partners				11.252	0.024*
One	137(35.7)	6(1.6)	143(37.2)		
Two	80(20.8)	3(0.8)	83(21.6)		
Three	52(13.5)	8(2.1)	60(15.6)		
Four	46(12.0)	8(2.1)	54(14.1)		
Five	40(10.4)	4(1.0)	44(11.5)		

4.4: Association between socio-economic factors and prevalence of HBV infection:

Out of the 384 respondents, 126(32.8%) of them revealed earning less than 2500/- per day, with the least number of respondents 39(10.4%) earning 7500/- and there is significant statistical relationship between earnings per day ($\chi^2= 19.162$, 0.001) and the prevalence of HBV infection.

Meanwhile more than three quarters of the respondents 301(78.4%) share rooms for sleeping compared to only 83(21.6%) of those who did not share. 118(30.7%) of the respondents sleep two in a room, followed by those who sleep three in a room 113(29.4%) and 85(22.1%) others which refers to those who sleep more than five people in a room.

There is significant statistical relationship between sharing room for sleeping ($\chi^2= 24.624$, $p= <0.001$) and the prevalence of HBV infection.

As per the frequency of medical check-up, the majority of the respondents 305(79.4%) reported going for medical check-up only if they were sick.

Respondents who said that they support immunization were 374(97.4%), although the highest number of the respondents 312(81.2%) in the study reported not being vaccinated against HBV infection with only 72(18.8%) of them who were vaccinated and the results revealed that there is statistical significant relation between those who support vaccination ($\chi^2= 28.374$, $p= <0.001$) and the prevalence of HBV infection.

Out of the 384 respondents, 267(69.5%) revealed the reason for not having been vaccinated against HBV infection as being; vaccines were expensive, while 97(25.3%) said that vaccines were not available.

In relation to use of condoms for protection against STIs and unwanted pregnancies, 213(55.5%) of the respondents said they would use condoms to protect themselves and 169(44.0%) said they would not use, 230(59.9%) said they would not use condoms because they are not available the time they need them, 81(21.1%) of the respondents attributed the non-use of condoms to the fact that condoms prevent them from enjoying sex and there is statistical significant relationship between reasons for not using ($\chi^2= 12.657, p= 0.007$) and the prevalence of HBV infection.

We have generally had a challenge in community awareness about HBV because some of the health workers have not even been vaccinated me inclusive, yet the community expects us to vaccinate them coupled, with the fact that some healthcare workers are not even knowledgeable about the HBV infection...(K I...2)

Table 5: Cross Tabulation showing association between socio-economic factors and prevalence of Hepatitis B Infection

Variable	No (%)	Yes (%)	Total (%)	Chai-Square(χ^2)	P-value
How much do you earn per day?				19.162	0.001*
Less than 2500/-	107(27.9)	19(4.9)	126(32.8)		
2500/-	73(19.0)	2(0.5)	75(19.5)		
5000/-	61(15.9)	5(1.3)	66(17.2)		
7500/-	36(9.4)	3(0.8)	39(10.4)		
Others	78(20.3)	0(0.0)	78(20.3)		
Do you share room for sleeping?				24.628	<0.001*
Yes	280(72.9)	21(5.5)	301(78.4)		
No	75(19.5)	8(2.1)	83(21.6)		
How many of you sleep in the same room?				7.108	0.130
2 People	109(28.4)	9(2.3)	118(30.7)		
3 People	103(26.8)	10(2.6)	113(29.4)		
4 People	47(12.2)	1(0.3)	48(12.5)		
5 People	16(4.2)	4(1.0)	20(5.2)		
Others	80(20.8)	5(1.3)	85(22.1)		
How often do you go for medical check-up?				1.749	0.626
Every 3 months	41(10.7)	4(1.0)	45(11.7)		
Every six months	16(4.2)	2(0.5)	18(4.7)		
Annually	16(4.2)	0(0.0)	16(4.2)		
Only if I am sick	282(73.4)	23(6.0)	305(79.4)		
Do you support vaccination?				28.374	<0.001*
Yes	349(90.9)	25(6.5)	374(97.4)		
No	6(1.6)	2(0.5)	8(2.1)		
Do not know	0(0.0)	2(0.5)	2(0.5)		
If yes, have you ever been vaccinated against HBV infection as an adult?				0.456	0.759
Yes	68(17.7)	4(1.1)	72(18.8)		
No	287(74.7)	25(6.5)	312(81.2)		
If no, what could be the reason for not being vaccinated?				5.456	0.141
It's expensive	249(64.8)	18(4.7)	267(69.5)		
Vaccines not available	86(22.4)	11(2.9)	97(25.3)		
Not very important	20(5.2)	0(0.0)	20(5.2)		
Would you use condoms to protect yourself from STIs and unwanted pregnancy?				6.317	0.097
Yes	203(52.9)	10(2.6)	213(55.5)		
No	150(39.0)	19(5.0)	169(44.0)		
Others	2(0.5)	0(0.0)	2(0.5)		
If no, what is the reason for not using?				12.657	0.005*
Not available	218(56.8)	12(3.1)	230(59.9)		
My culture does not support	69(17.9)	4(1.1)	73(19.0)		
Can't enjoy sex	68(17.7)	13(3.4)	81(21.1)		

4.5: Association between health facility factors and prevalence of Hepatitis B infection:

The distance between home and health facility for majority of the respondents were between less than one km and 1-2 km, with 143(37.2%) having a distance of less than 1 km and 159(41.4%) respondents residing between 1-2km from a health facility. An equal number of respondents 159(41.4%) each believed there are vaccines of HBV for infant immunization and the same number 159(41.2%) of respondents are not aware of the existence of the above vaccines. 183(47.7%) of the respondent noted that vaccines for adults are only in private health facilities.

Screening equipment are available according to the majority of the respondents 282(73.4%), with 35(9.1%) who said there no screening equipment and 67(17.5%) respondents revealed that they do not know the existence of the screening equipment and there is statistical significant relation between whether health facilities have equipment for screening ($\chi^2= 8.675$, $p= 0.034$), whether respondents have been screened ($\chi^2= 24.404$, $p= <0.001$) and the prevalence of HBV infection.

The reason for not being screened according to majority of the respondents 295(76.8%) is that they are expensive, followed those 57(14.8%) who attributed it to fear of being found positive and 32(8.4%) said it is not necessary, though there is no significant statistical relationship between reason for being screened and the prevalence of HBV infection.

Vaccines are not available in government health facilities, except in some private ones and are expensive for community members, many health workers had also either been screened or did not finish there dose.... (K I...3 MTC).

I am not sure of the safety of the existing vaccines which are available in the private health facilities and therefore I am not yet also vaccinated... (K I...4).

Table 6: Cross Tabulation showing association between health facility factors and prevalence of Hepatitis B infection among adults (18-45 years)

Variable	No (%)	Yes (%)	Total (%)	Chai-Square (χ^2)	P-value
What is the distance between your home and to the health facility?				6.828	0.145
<1 km	135(35.2)	8(2.1)	143(37.2)		
1-2km	149(38.8)	10(1.8)	159(41.4)		
3-4km	55(14.3)	7(1.8)	62(6.1)		
>4km	12(3.1)	3(0.8)	15(3.9)		
>5km	4(1.0)	1(0.3)	5(1.3)		
Are vaccines available for infant immunization against HBV infection at the health facilities?				2.695	0.610
Yes	149(38.8)	10(2.6)	159(41.4)		
No	58(15.1)	8(2.1)	66(17.2)		
Do not know	148(38.5)	11(2.9)	159(41.4)		
What about vaccines for adults against HBV?				7.409	0.116
Available in all health facilities	24(6.2)	0(0.0)	24(6.2)		
Available in some health facilities	35(9.2)	7(1.8)	42(10.9)		
Not available	45(11.7)	4(1.0)	49(12.8)		
Do not know	81(21.1)	5(1.3)	86(22.4)		
Only available in private health facilities	170(44.3)	13(3.4)	183(47.7)		
Do health facilities have equipment for screening?				8.675	0.034*
Yes	254(66.1)	28(7.3)	282(73.4)		
No	35(9.1)	0(0.0)	35(9.1)		
Do not know	66(17.2)	1(0.3)	67(17.5)		
If yes, have been screened for HBV infection?				24.404	<0.001*
Yes	86(22.4)	29(7.6)	115(30.0)		
No	269(70.0)	0(0.0)	269(70.0)		
If no, what could be the reason for not being screened for HBV infection?				1.003	0.800
It's expensive	271(70.5)	24(6.3)	295(76.8)		
Fear of being found positive with the virus	54(14.1)	3(0.8)	57(14.8)		
It's not necessary	30(7.8)	2(0.5)	32(8.4)		

4.6: Logistic regression findings for significant variables at bivariate analysis:

There were ten statistically significant variables associated with the prevalence of HBV infection as measured by above 2x2 cross tabulations and the strength of association were examined by logistic regression analysis under bivariate, results indicated as follows;

Respondents who ended in secondary education level were two times more likely to be infected of HBV compared to those who did not go to school and ended at primary level of education and is a statistical significant association between those who ended in secondary education and the prevalence of HBV infection (uOR=2.607, 95%CI: 0.998- 6.807, p= 0.050).

There is significant association between those who said HBV infection is not airborne and are more likely to get infected of HBV compared to the respondents who thought HBV infection is airborne (uOR= 8.557, 95% CI: 1.117- 65.532, p= 0.039)

Respondents who reported that HBV infection is got through sharing utensils are less likely to be infected of HBV (uOR= 0.354, 95%CI: 0.129- 0.973, p=0.044)

In relation to reasons for not using condom, respondents who admitted that condom use prevents them from enjoying sex (uOR= 0.303, 95% CI= 0.094- 0.977, p= 0.046) are more likely to get infected of HBV compared to those who noted that condoms are not available (uOR= 0.239, 95% CI: 0.098- 0.584, p= 0.002).

Most of the people infected are those who ended at secondary level and in tertiary institutions...(K I...5)

The Majority of the residents in Moyo district may not be aware of the transmission routes of HBV infection, therefore do not see the need for the use of condoms to prevent them from HBV infection (K I...6)

Table7: Logistic regression findings for significant variables at bivariate analysis:

Variables	No (%)	Yes (%)	uOR (95%CI)	P- Value
Education level				
None	26(6.8)	1(0.3)	0.679(0.078- 5.8892)	0.0726
Primary	101(26.3)	4(1.0)	0.70(0.192- 2.552)	0.0589
Secondary	122(31.8)	18(4.7)	2.607(0.998- 6.807)	0.050*
Is HBV infection air born?				
Yes	131(34.1)	11(2.9)	6.298(0.797- 49.744)	0.081
No	149(38.8)	17(4.4)	8.557(1.117- 65.532)	0.039*
Is HBV infection got through sharing utensils?				
Yes	214(35.7)	10(2.6)	0.354(0.129- 0.973)	0.044*
No	88(22.9)	12(3.1)	1.032(0.383- 2.786)	0.950
Reason for not using Condom				
Not available	218(56.8)	12(3.1)	0.239(0.098- 0.584)	0.002*
My culture does not support	68(17.7)	4(1.1)	0.747(0.194-2.875)	0.672
Can't enjoy sex	68(17.7)	13(3.4)	0.303(0.094- 0.977)	0.046*

***<0.05**

CHAPTER FIVE: DISCUSSION

5.0: Introduction

In this chapter findings in relation to the research objectives are discussed and expounded on the factors influencing prevalence of HBV infection. Discussions were arranged in accordance with the objectives of the study.

5.1: Socio- demographic factors influencing the prevalence of HBV infection:

In this study, the majority of the respondents 256(66.67%) were between age group 18- 35, this may be due to the fact that the study was conducted during holy days when students were mostly at homes, with majority of them 179(46.6) reported that they were married and there was relation between age, gender, marital status and employment status according this study.

According to the logistic bivariate analysis, those respondents who attained secondary education level were more likely to be infected of HBV (u OR= 2.607, 95% CI= 0.998, p= 0.050), which is in agreement with the study carried out on the prevalence of HBV in a cohort of study in Bangui, Central African Republic by Komas *et at.*(2010).

This can be attributed to the fact that in secondary schools most of the students in the district get involved in risky life styles, like premarital sex, alcoholism, clubbing and also very close conducts especially those in boarding sections coupled with the fact that most of the students reach secondary school education when they are in adolescent period exposing them to the above risky behaviours including peer influence that exposes them to sexually transmitted diseases.

This is however contrary to the study carried out by Mohamed *et al*, (2012) and a study conducted among Asian- Americans by Tran, 2009 which showed that lack of fluency in English and not understanding medical terminology was correlated to the prevalence of HBV infection.

5.2: Individual factors influencing the prevalence of HBV infection.

5.2.1: Prevalence of HBV infection

The research findings revealed that only 115 (30%) of the respondents who participated in the study were screened for HBV infection, 29(7.6%) of the total respondents were found positive with the virus while 86(22.4%) were not having HBV infection.

Respondents who had reported having HBV were requested to show their laboratory results to confirm if they had been screened as mentioned and had collected laboratory results and the number included were for those who were able to prove being tested and results clearly indicated on the researcher administered questionnaires.

This reveals the proportion of adults who might have been infected of the virus within the area of study which is about 21% of the population in the North West (MoH, 2012) as the virus is highly contentious 50-100 times more infectious than HIV (WHO, 2012).

It has been noted that, globally about 2 billion people are infected of the virus with a global burden known to causing death of 1 million people annually (WHO, 2007), yet Hepatitis B. remains among the highly neglected diseases in the world including Uganda and in particular Moyo district.

The exact number of adults in the district infected with the virus is not known because government health facilities lack the screening equipment, except Moyo hospital which tries to screen

sometimes yet the number of the people screened were not representative of the population in the district.

The health information system within the district does not accommodate records from private health facilities (K I.7), this is in line with WHO (2007), explanation that sub Saharan Africa has the second largest number of carriers of HBV after Asia and the region is considered to be highly endemic but the exact burden of HBV infection is difficult to assess because of inaccurate records and under- reporting.

This can also be linked to the study carried out by the World Hepatitis Alliance (WHA) which noted that in Africa there is poor quality of registry most of which are not even available in rural areas and only found in cities (WHA, 2010).

5.2.2: Knowledge about HBV infection:

Out of the 384 respondents who participated in the study, the majority 338(88.0%) said that they had ever heard about HBV and 46(12.0%) of them admitted that they had never heard about Hepatitis B viral infection, although only 166(43.2%) of them knew the definition of HBV infection.

The study also revealed that, 166(43.2%) of the respondents who participated in the study were knowledgeable on HBV not being airborne (uOR= 8.557, 95% CI= 1.117- 65.535, p= 0.039), 135(35.2%) respondents knew that HBV infection cannot be inherited through genes, and only 100(26.0%) of the total respondents in the study were aware that HBV infection is not got through sharing utensils like plates.

Whether HBV infection can be inherited, only 135(35.2%) of the respondents were aware that HBV infection is not inherited, 117(30.5%) said HBV is inherited through genes and 132(34.4%) of the revealed that they were not aware whether HBV infection is inherited or not.

This was in line with another study conducted in Australia were out of 433 men, half of them said that HBV infection is got through sharing food and drink with an infected person (Vu and Co-workers, 2012).

In another study conducted in Pakistan among Barbers where only 38% of them were knowledgeable about the transmission routes of HBV infection.

However, in regards to whether HBV is got through having unprotected sexual intercourse with an infected person, the majority of the respondents 237(61.7%) were aware, with 147(38.3%) of them being un aware, this was contrary with a study carried out among 256 Vietnamese-Americans to assess their knowledge on whether HBV can be spread through unprotected sex where only 22% of them were aware (Ma and Co- workers. 2007).

This indicates that there is knowledge deficiency among the respondents who participated in the study. It may be due to the fact that there is lack of community awareness about the transmission routes and prevention of HBV infection.

If the community is knowledgeable about HBV, a good proportion of the population would be able to seek vaccination and take control measures like having protected sex, screening for HBV, lack of knowledge is considered a serious problem since it exposes one to the transmission of the virus (WHO, 2012).

Knowledge of the health care providers on HBV infection, routes of transmission, prevention and treatment could also lead to low levels of awareness among the community members, this also is in line with a study conducted by United States Department of Health and Human Services in (2011), that health care providers need to be educated and made aware of the prevention opportunities, care and treatment available for HBV infection.

5.3: Socio-economic factors influencing the prevalence of HBV infection:

In this study, 126(32.8%) of respondents reported earning less than 2500/- per day and there was significant statistical relationship at chi-square level analysis, showing that those earning less than 2500/-per day were more likely to be infected of HBV compared to those who were earning between five thousand shillings and above.

The majority of the respondents 301(78.4%) were sharing rooms for sleeping and the majority 305(79.4%) out of 384 said that they could only go for medical check-up when they were sick. The study also revealed that 312(81.2%) of the respondents were not vaccinated giving reasons that vaccines were expensive 267(69.5%), vaccines not available 97(25.3%) and not very important 20(5.2%).

This confirms the study carried out by *Karim et al*, (1999) which concluded that those living in crowded rooms were more prone to getting HBV, including those who had no homes (Dublin, 2000).

Another study conducted elsewhere also indicated that there was high laboratory tests and high cost of drugs (Kowsar M.P.Co, 2011).

There is high cost for screening and vaccination that is why few members of the community have been vaccinated (K I...8).

This may be due to the fact that most of the residents in the district are poor, earning less than 2500/- per day, putting the health of the people at stake.

Condom use as one of the ways of protecting one's self from contracting HBV infection is statistically significant but some respondents gave reasons that condoms are not available, their culture does not support and they cannot enjoy sex while using condom.

Non- use of condom as indicated was due to the fact that some cultural and religious values within the community do not allow condom use meaning such a group are exposed to the virus as one can get infected with virus through having un protected sex with the person already infected with the virus(WHO, 2012).

The result indicated that those who gave a reason for non- use as preventing them from enjoying sex were more likely to get infected with the HBV followed by those who said condoms were not available. These may be due to the fact that most of the respondents affected were those who had reached secondary education therefore they were at the age of discovering new things , similarly they also fear to be found with condoms and those involved in alcoholism and clubbing find themselves in sexual activities without condoms.

In sub Saharan Africa, many people become sexually active at adolescent stage and yet no sex education given to them either at home or in schools as it seem an abomination to talk about sex Komasa *et al*, (2010).

Uganda and Moyo in particular is not exceptional and these makes many get involve in unprotected sex early in life and do not see the need to protect themselves later on.

The same study conducted among young adults in Bangui revealed that high prevalence was related to the fact that there was no utilization of condoms among the group under study Kommas *et al*, (2010)

5.4: Health facility factors influencing the prevalence of HBV infection.

According to the study findings the majority 302(78.65) of respondents reported living between less than one to 2 kilometres away from a health facility.

Out of the 384 respondents, 159(41.4%) said that vaccines for available for infant immunization against HBV were available and the remaining cumulative number 225(58.6%) were not aware that vaccines for infants were available

Out 183(47.7%) of the respondents revealed that vaccines for adults against HBV were available only in private health facilities while 24(6.2%) said that vaccines for adults were available in all health facilities, 49(12.8%) and 86(22.4%) said that vaccines were not available and did not know whether vaccines respectively.

Out of 384 respondents, 269(70%) mentioned that they had not been vaccinated against HBV while 295(76.8%) said that vaccines were expensive and therefore could not afford.

This was in line with a study which revealed that a small number of healthcare workers were vaccinated against HBV despite the potential exposure to the virus Ziraba *et al*, (2010). Another study conducted by WHO showed that there is a correlation between the availability of adequate health workers and better health outcome (WHO, 2007).

“Some health workers are not knowledgeable about HBV infection since there was no specific training given to health workers in district on HBV” (K I...9)

The healthcare performance in Uganda is among the worst, ranked 186th out of 191 nations WHO revealed (Sisay, 2009).

“Staff members especially Clinicians were very few and do not regularly come for their duty forcing some Nursing officers to doing word round, change drugs for patients depending on the need and discharge where necessary” (K I...10)

The fact that most of the respondents who had participated in the study were not vaccinated may be due to high costs as indicated in private health facilities and in availability of the vaccines in government health facilities and safety of the vaccines that is, the private health facilities may not meet the standard since there were no specific guidelines given for all these medical centres or clinics in the district that were carrying out screening and vaccination, this is in relation to the fact that one of *“the health inspectors commented that he is not sure of the safety of the vaccines especially for HBV which are available in some private health facilities”*.

The majority 225(58.6%) of the respondents were not aware that vaccines for infants against HBV were available, they might relate to the current prevalence of HBV infection in the district because this vaccine was introduced in Uganda in 2002 according to WHO and it is supposed to offer 95% protection (CDC, 2010)

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

6.0: Introduction:

In this chapter findings of the study are summarized in two fundamental sub- headings: conclusion and recommendations, derived from results of the study.

6.1: Conclusion:

6.1.1: Individual Factors influencing the prevalence of HBV infection

- i. 29 respondents out of the 115 who had been screened for HBV were found to be positive with virus.
- ii. Majority of the respondents in the study were not knowledgeable about HBV infection, especially its transmission routes, signs and symptoms, prevention.
- iii. Respondents who said they cannot enjoy sex when using condom were significantly related to the prevalence of HBV infection.
- iv. Those who had at least three sexual partners were more prone to being infected with HBV compared to those who had one sexual partner.

6.1.2: Socio- economic factors influencing prevalence of HBV infection

- v. Education level was statistically significant in relation to prevalence of HBV infection, 1/7 of the respondents who had reached secondary school education were likely to be infected with HBV.
- vi. Out of 384 respondents, 126 (32.8%) were earning less than 2500/- per day and this was statistically significant at chi- Square level.

vii. The greatest number of respondents 305(79.4%) revealed going for medical check-up only if they were sick.

viii. The majority of respondents 312(69.5%) who participated in the study were not vaccinated hence no immunity against HBV infection.

6.1.3: Health facility factors influencing prevalence of HBV infection

ix. More respondents 269(70.0%) revealed that they had not been screened for HBV infection because the screening tests were expensive 295 (76.8%).

x. Cumulatively 225(58.6%) of the respondents were not informed about the availability of vaccines of HBV for infants.

xi. Vaccines against HBV for adults were available in only private health facilities and were expensive.

6.2: Recommendation:

6.2.1: Individual factors

i. There is need for community sensitization through local radios, community outreaches, churches and mosques about the transmission routes and prevention of HBV in the district.

6.2.2: Socio- economic factors

ii. Specific health education to students on behaviour change using ABC model, health education on dangers of alcoholism and premarital sex.

- iii. There is need for the district leaders, teachers and parents to set laws that may prevent students from getting involved in clubbing and alcoholism.
- iv. There is need for the district to lobby funds from the government, Non- governmental organizations and well-wishers in support for screening and vaccination of HBV which may also help reduce the cost of screening and vaccination for the low income earners so that they can benefit from the vaccination services.

6.2.3: Health facility factors

- v. Training of all health workers to gain adequate knowledge of HBV infection in order to provide rightful information for the community members on HBV infection.
- vi. Mass Screening and vaccination of all health workers, and the general community in order to reduce the current prevalence of HBV in the district.
- vii. Implementing infant immunization against HBV as scheduled by WHO and community awareness about the existence of infants vaccines for HBV, explaining to them why it is very important.
- viii. There is need to establish a proper medical information system in the district that takes in account all private health facilities so that necessary information about HBV may be known including information about other diseases.
- ix. There is need for the ministry of health through the parliament to set up guidelines for HBV that would help in proper management of the HBV.

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APPENDIX A: CONSENT FORM

Introduction:

My name is Lulu Patrick Madrama, a Student of International Health Sciences University, Institute of Health Policy and Management; I am carrying out a research as part of requirement for the award of Bachelor of Science in Public Health.

The purpose of this research is to determine factors influencing the prevalence of Hepatitis B viral infection among adults aged 18- 45 years in Moyo district, I am kindly requesting for your responses towards answering this questionnaire as required without declaring your identity.

This interview will take between 15 to 25 minutes in a confidential setting

Confidentiality; information about you will not be revealed to anyone and the information got will only be used for the purpose of the study, only individuals involved in the data collection will have access to the data collected with no personal names indicated.

Right to withdrawal; it is by choice to participate in this study and you may decide to withdraw from the study whenever you wish and no penalty will be put on you for refusal to continue in the interview.

Benefits: Information that you provide is very important as it would help in determining factors influencing the prevalence of Hepatitis B among adults aged 18 to 45years old in Moyo district. Findings from here could also be communicated to policy makers and other stakeholders hence may help improve the situation on the ground

Village.....Parish.....Sign.....Date.....

QUESTIONNAIRE TO COLLECT DATA ON FACTORS INFLUENCING THE PREVALENCE OF HEPATITIS B VIRAL INFECTION AMONG ADULTS IN MOYO DISTRICT

SECTION A: SOCIO- DEMOGRAPHIC DATA:

1. Age (Years)
a. 18- 23 b. 24 C.30- 35 d. 36- 39 e. 40- 45
2. Gender a. Male b. Female

3. Marital status a. Married b. Cohabiting c. Single d. Divorced e. Widow

f. Widower.

4. Level of education attained
a. None b. Primary c. Secondary d. Tertiary
5. What is the nature of your employment? a. Health care work b. Teaching/
instructing c. Barba salon d. Others Spacify.....

SECTION B: INDIVIDUAL FACTORS

6. Have you ever heard about Hepatitis B viral infection? A. Yes b. No

7. If yes, what is Hepatitis B? a. Inflammation of the liver b. Inflammation caused by liver cancer

c. A viral infection that leads to the inflammation of the liver. d. Do not know

8. Do people inherit Hepatitis B through genes? a. Yes b. No c. Do not Know

9. Is Hepatitis B air born? a. Ye b. No c. Do not know

10. Is Hepatitis B got through sexual relationship? a. Yes b. No

11. Do people get infected of HBV by sharing utensils (spoons or bowls) for food?

a. Yes b. No c. Do not know

12. Have you ever had any Sexually Transmitted Infection? a. Yes b. No

c. Do not know

13. If yes, what was the infection? a. Syphilis b. Gonorrhea c. Hepatitis B
 d. Do not know e. Others, Specify.....
14. If yes, have you ever been treated of the STIs? a. Yes b. No
15. How many sexual partner/partners do you have /ever had? a. One b. two c. three
 d. Four e. Others Specify

SECTION C: SOCIO- ECONOMIC FACTORS

16. How much do you earn per day? a. Less than 2500/- b. 2500/- c. 5000/-
 d. 7500/- e. Others Specify
17. Do you share a room for sleeping? a. Yes b. No
18. How many of you sleep in the same room? a. 2 people b. 3People c. 4 d. 5
 e. Others Specify.....
19. How often do you go for Medical checkup? a. Every 3 months b. Every six Months
 c. Annually d. Only if I am sick
20. Do you support Immunization/ Vaccination? a. Yes b. No c. Do not know
21. If yes, have you ever been vaccinated against HBV as an adult? a. Yes b. No
22. If no, what are some of the reasons for not being vaccinated?
 a. Expensive b. vaccines not available c. Not very important
23. Would you use of condoms to protect yourself from STIs and unwanted pregnancies?
 a. Yes b. No c. others Specify
24. If no, what is the reason for the not using?
 a. Not available b. my culture does not support c. Can't enjoy sex

SECTION D: HEALTH FACILITY FACTORS

25. What is the distance between your home and to the health facility a. < 1 Kilometer
b. 1- 2 Kilometers c.3- 4 Kilometers d. > 4 Kilometers e. greater than
5km
26. Are vaccines available for infant immunization against HBV at the Health facilities?
a. Yes b. No c. Do not know
27. What about Vaccines for adults against HBV? a. Available in all Health facilities
b. Available in some health facilities c . Not available d. Do not know
e. Only available in private health facilities.
28. Do the health facilities have equipments for screening HBV? a. Yes B. No
c. Do not know
29. If yes, have you been screened for HBV infection? a. Yes b. No
30. If no, what could some of the reasons for not being screened for HBV infection?
a. It is expensive b. Fear being found positive with the virus c. it is not necessary

Thank You for your response

**APPENDIX C: TRANSLATED CONSENT AND QUESTIONNAIRE IN MADI
DRILE A: TA ADI RU AI DRIARU RII**

Idoka:

Ma ru ni Lulu Patrick Madrama I, Sukuru bara International Health Sciences University ni ewo ta inijo ru egbwe dri ri iga ungele worokoba tisi, Institute of Health Policy and Management dri.

Ma ta vu ocu leti tema rii si laza bani logo ukodi au ungele Hepatitis B viral ni ovi igoga joa ri idri, ndrolea ba kinya rika 18- 45 Moyo District a ri a lofo ga.

Disi ma anyi ai anya ran i hwejo leti lazi zile rii aijo risi, lazi dii ka saa du koca dakika 15 tia lofo 25 to ri iga ra.

Lazi di uzia musi dru; ta nya jole rii oya efure angwe ba zi ni nile ku, tete madi uzidia ri e.

Uri ba ku; Lazi dii ai rega uri ba ku vua lagbwa sa ohweru ni ku jo nyi baba lazi di ai jo i kusa i, jo iri ai le rasa, nyilera nyebea ra saw a.

Loso; ofu nya hwele riya konyi ni kolu nja tani jo ovu laza Hepatitis B dri igoga job a amba lofo kinya rika 18- 45 Moyo district a rii lofo i, vua ta esule ta vu ocule di iga rii adi hwea ba Cara dri rib a ti dri, ingo amba ziti sa tro ausini lidu eji jo lofoga wa .

Ei..... Parisi..... Dri tika..... Imba Odu.....

DRILE B: LAZI

No.....

**LAZI UZI LE TAVU OCUJO OVI LAZA HEPATITIS B NI IGOGA JOA DRU BA AMBA
RII LOFO MOYO DISTRICTI A RI DRI RI I.**

EWO A: LEJO EHWI TA NZEDI NYI DRI I:

1. Kinya
 - a. 18- 23
 - b. 24- 29
 - c. 30- 35
 - d. 36- 39
 - e. 40- 45
2. Mgbwi- Mgbwi ewo ladu driga
 - a. Ago
 - b. Izi
3. Ovi Ladu dri
 - a. Ladu a
 - b. Ladu a ki bobo dru
 - c. Adite
 - d. Anzuirura
 - e. Awizi
 - f.
4. Ovi lini esule ri drii
 - a. Iyo
 - b. Peremari
 - c. Sinia
 - d. Sinia Vu
5. Ovi nya ebu dri ingoni?
 - a. Ebu ewo ruegbwe dri ga
 - b. Ta inika
 - c. Ba dribi ideka
 - d. Ebu ziti tema rii.....

EWO B: TA NYI KODI AU RII:

6. Nyeri ta laza ugwele Hepatitis B. dri idri raya?
 - a. O’o meri ra
 - b. Meri kuru
7. Jo nyeri ra rii, Laza Hepatitis B dri dii laza ingoni rii?
 - a. Logo a pika i
 - b. Logo a pika lupi-lupi si I
 - c. Logo a pika obu zi a bakaa si
 - d. Aniku
8. Baka laza Hepatitis B dri dii esu a si wa a jo ba nyitika ri bati iru a a i?
 - a. Oo
 - b. Kpwe
 - c. Aniku
9. Adi laza Hepatitis B dri dii esua eria si waa?
 - a.Oo
 - b. Kpwe
 - c. Aniku

10. Adi laza Hepatitis B dri dii esua ewa ovi ago tia olujo uku tro risi wa a?
 a. Oo b. Kpwe c. Aniku
11. Ba ka laza dii eu leti torobo ebule lonyani ri drisi wa a?
 a. Oo b. Kpwe c. Aniku
12. Nyesu laza esule ovi olujo ago ti dri ukutro rii gbu a? a. Oo b. Kuru c. Aniku
13. Jo oo ri laza na adu? a. Kabaruje b. Nyuku c. Hepatitis B. d. aniku
 e. Laza zit i tema ri i.....
14. Jo oo ri, nyesu erua ra laza di ija jo i? a. Oo b. Kuru
15. Nya lidri ni ga nyolu ra rii ago kusa uku si tro? a. Alu b. Eri c. Ina d. Isu e. Ziti tema

EWOC: OVI OLUJO VUA TA ESUJO RII:

16. Odu alu anyi siti esu si? a. Oca elifu 2500 ku b. Tete elifu 2500 c. Tete elifu 5000
 d. Tete elifu 7500 e. Ziti tema ri i.....
17. Anyi kare dejo rii amu amu a? a. Oo b. Ku
18. Anyide jo alua ba si? a. Ba eru b. Ba ina c. Ba isu d. Ba tou
 e. Ziti tema ri i.....
19. Ovi nya acijo erua jo a pima ga rii ingo ni? a. Imba nacindru vu b. Imba azia cidru vu
 c. Kinya alua vu alu d. Kesua ma avu

20. Nyi erua goga dri laza gbwi-gbwi drolea baciri okodi ao ri a ogu ni ode a?

- a. Oo b. Ku c. Aniku

21. Jo oo ri osonyi erua goga dri laza Hepatitis B igoga jo rii si ra amba dru i? a.Oo b.Kuru

22. Jo osonyi kuru iri ran a aduta? a.Laje na okpo b. Erua goga dri dii iyo c. So ka a konyi ni ga.

23. Nyi cokobo ebu nyi igoga ausi nyesu laza ku vua ba sa koko dru ru a a ku sir a?

- a. Oo b. Ku c. Ziti tema rii.....

24. Jo nyebu ku ri, ran a aduta? a. Cokobo di iyo si b. Abi ebeni oleku si

- c. Koba mama itiri cuwi ku saa ama alujo ewo ago tidri izi tro ri iga i.

EWOD: KARE RU EGBWE DRI I:

25. Kare nya olujo ri a lolu ni eruajo dri tro ingoti?

- a.Oca kilomita 1 kuru b. kilomita 1 kuri 2 c. Kilomita 3 kuri 4
d. Kilomita 4 e. Onde kilomita 5 a dri ni ra

26. Erua goga dri laza Hepatitis B dri ri baciri ni erua jo a si a a? a. Oo b. Iyo c. Aniku

27. Ki ba amba dri laza di igoga war ii le a a?

- a. Erua jo kpwoa a a b.Erujo zitia iyo c. Iyo d. Aniku
d. Tete erujo gameti drii ku ri a

28. Erua jo diti iya drilahwa ebule pima idejo HBV dri ni rii a a?

- a. Oo b. Iyo c. Aniku

29. Jo oo rii, ipima nyira a laza HBV ni jo di nyiru a a si i?

- a. Oo b. Kuru c. Aniku

30. Jo kuru ri, ran a adu ta? a.Laje na okpo b. Mori nosi adi ma esu au tro

- c. Ru ipima ka a konyi na ga

Anzo okpo si nya ra hwele ri si i.

APPENDIX D: KEY INFORMANT INTERVIEW GUIDE

No.....

This Key Informant Interview Guide seeks to help find out factors influencing the prevalence of Hepatitis B infection among adults (18 – 45 years) in Moyo District.

Date..... Name of the Researcher/ Assistant.....

- 1. Parish of the Key Informant..... Village
- 2. Profession/Role (a) Health worker (b) Religious leader (d) others Specify.....
- 3. Gender: (a) Male (b) Female

Section A: HBV Knowledge and prevalence:

- 4. What is HBV?.....
- 5. What are the signs and symptoms of HBV Infection?
 - (i).....
 - (ii).....
- 6. How does someone get HBV infection?.....
- 7. Are there some ways HBV infection could be prevented? (a) Yes (b) No
 - (b) Do not know
- 8. If yes, how is HBV infection prevented?.....
- 9. What is the estimated population infected with HBV in your community?.....
- 10. What could be some of the reasons for such a prevalence of HBV infection in the district?
.....
- 11. What are some of the key things that have so far been done in your community/district

to reduce the Prevalence of HBV infection?.....

12. Is the community knowledgeable about HBV infection? (a) Yes (b) no
© Half of the population is Knowledgeable (d) Three quarters of the population
(e) Do not know
13. What could be done to increase the level of awareness and knowledge about the virus?
.....

Section C: Health Facility Factors

14. Does your Community have access to screening tests against HBV? a. Yes b. No
c. Do not know d. Only in private Health facilities
15. Are Vaccines for HBV available in the Health facilities? a. Yes b. No c. Do not know
16. If yes, are the community members aware about the availability of the Vaccines?
a. Yes b. No c. Half of the community members are aware d. Do not know
17. Are the vaccines affordable for the community members?
a. Yes b. No
18. Have the Health workers been trained on how to care for people infected with HBV?
a. Yes b. No c. Some of them d. Do not know
19. If yes, how often do they give health education to community members about HBV?
a. Once in a year b. Have never done it at community level c. Do not know
20. What are the challenges in accessing services for HBV in your community?
a. Health workers are not knowledgeable b. No vaccines in government Health facilities
c. Community members are not aware about the dangers of HBV
d. high costs required for treatment

21. How would you rate cleanliness of the health facilities?

- a. 25%
- b. 35%
- c. 50%
- d. 60%
- e.80% and above

22. What is infection control?.....

23. What precautions are taken by health workers to control the infection of HBV in Health facilities?

- a. Thorough blood screening
- b. All adults in the district are vaccinated against HBV
- c. Distribution of Condoms
- d. Disinfection/ sterilization of all surgical equipment

- i. Only (a) above is done
- ii. Only b
- iii. Only c
- iv. d
- v. All the above
- vi. None of the above is done in all health facilities

24. Is everyone able to access sterilized surgical equipment while in Surgical words or in theatre?

- a. Yes
- b. No
- c. sometimes
- d. Do not know

25. What are the Challenges faced by health facilities as regards to control of HBV infection in the district?

26. Do health facilities have records of people infected with the HBV?

- a. Yes
- b. No
- c. Do not know

27. What are the challenges involved in record keeping by health workers?

.....
.....

Thank You for the response

APPENDIX E: LETTER OF INTRODUCTION.



*Maked
17/7/2014*

*THI
Please issue
with this student
and help him
carry the research
to who it may concern*

Office of the Dean, Institute of Health Policy & Management

Kampala, 12th June 2014

The District Health Officer
Moyo District
P.O Box 1, Moyo

*This is to request that you please let
Lulu be registered since to enable her
Carry her research*

Dear Sir/ Madam,

Re: Assistance for Research

*Milo
Asst D
14/7/2014*

Greetings from International Health Sciences University.

This is to introduce to you **Lulu Patrick Madrama, Reg. No. 2011-BSCPH-FT-008** who is a student of our University. As part of the requirements for the award of a Bachelors Degree of Public Health of our University, the student is required to carry out field research for the submission of a Research Project

Lulu would like to carry out research on issues related to: **Factors Influencing the Prevalence of Hepatitis B Infection among Adults; A Case study of Moyo Town Council, Moyo District**

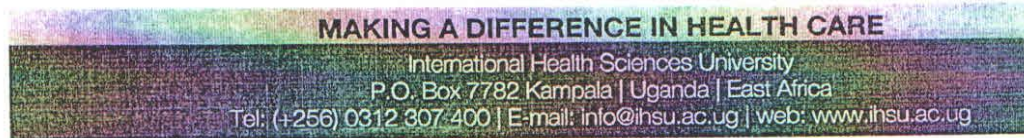
I therefore request you to render the student such assistance as may be necessary for his research

I, and indeed the entire University are thanking you in anticipation for the assistance you will render to the student

Sincerely Yours,

Prof. David Ndungutse Majwejwe
Dean, Institute of Health Policy & Management

*②
Walter
Please handle
them*



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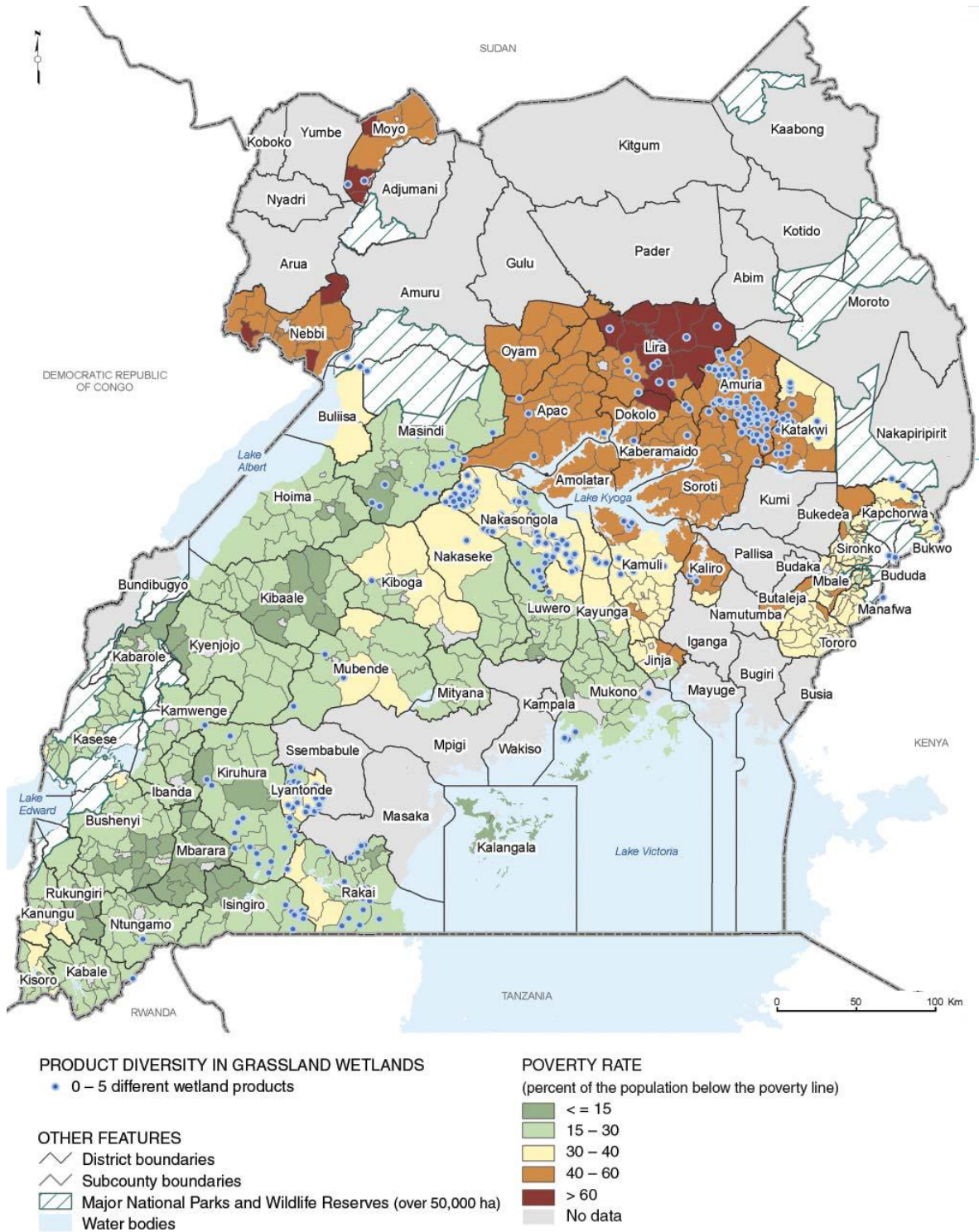
APPENDIX F: ESTIMATED BUDGET

S/No	Items	Quantity	Unit cost(UGX)	Total cost (UGX)
01	Printing and binding of the proposal	1 Copy	35,000/-	35,000/-
02	Printing questionnaires for pre-testing	40 Copies	800/-	32,000/-
03	Transport to and from Moyo for pre- testing	1person	100,000/-	100,000/-
04	Printing questionnaires for data collection	400	800/-	320,000/-
03	Transport to and from Moyo	1 Person	100,000/-	100,000/-
04	Transport within Moyo	5 People	40,000/-	200,000/-
05	Communication during the Research			60,000/-
06	Incentives for Research Assistances	4 People	50,000/-	20,000/-
07	Lunch for Research Assistances	4 People	20,000/-	80,000/-
08	Accommodation in Moyo	18 days	10,000/-	180,000/-
09	Printing, photocopying and binding preliminary Research Report	1 copy	40,000/-	40,000/-
10	Printing, Photocopying and binding final copy	3 Copies	40,000/-	120,000/-
10	Internet surfing			80,000/-
	Total			1,332, 000/-

APPENDIX G: WORK PLAN

S/NO.	Activities	TIME FRAME								Person responsible
		March	April	May	June	July	Aug	Sept	Nov	
01	Topic Approval									IHPM Faculty office
03	Literature Search and writing of the proposal									Researcher
04	Approval of Proposal by Supervisor/IHSU Faculty office									Supervisor and IHPM Faculty office
05	Approval by DHO									Office of the DHO
06	Training Research assistants									Researcher
07	Pre-testing questionnaires									Researcher and Research assistants
08	Data Collection									Researcher and Research assistants
09	Data entry, analysis, interpretation, discussion and submission of first draft.									Researcher
11	Submitting final copy									Researcher
12	Dissemination of results									Researcher

APPENDIX H: MAP OF UGANDA



APPENDIX I: MAP OF MOYO DISTRICT

