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DIPLOMA PROGRAMMES

AWARENESS OF HEPATITIS B VIRUS INFECTION AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT SENASE HEALTH CENTER

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DECLARATION

We hereby declare that this submission is our own work towards the Diploma in Registered Midwifery and that, to the best of our knowledge, it contains no material previously published by another person nor material which has been accepted for the award of diploma of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

The study focused on determining the awareness of Hepatitis B virus infection among pregnant women who attend antenatal clinic (ANC) at Senase Health Center in the Senase community of the Berekum Municipality.

A cross-sectional design was used to collect in-depth information for the study. A total of 50 pregnant women were sampled for the study using convenient sampling technique. The data for the study was collected by interviewing respondents.

The study found that over half, 56% of the pregnant women had information about HBV vaccination. Half, 50% of the pregnant women had information on transmission routes of HBV. Less than half, 42% of the pregnant women had information on HVB prevention. Majority, 96% of the respondents mentioned that having unprotected sexual intercourse with an infected person as a cause of HBV infection. Almost all, 98% the respondents mentioned blood as a mode of transmission for HBV. Majority, 91.7% received information from health workers. In assessing the risk factors associated with HBV among the respondents. Majority, 82% of the pregnant women thought they need to be tested for hepatitis B. The study recommended that Ministry of Health in Ghana should make provisions for educating women in their reproduction age about hepatitis B virus. Ghana Health Service needs to scale up efforts on the testing regime of pregnant women to at least one-time during pregnancy to identify reactive mothers for immediate management and preparation towards birth. The study concluded that though the study participant demonstrated appreciable knowledge of HBV, they were highly informed about the risk factors of HBV, and high vaccination coverage was seen as a preventive measure for HBV. Majority viewed the hospital as the best place to seek for cure or management of HBV.

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ABBREVIATION

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
CHB	Chronic Hepatitis B
CHBV	Chronic Hepatitis B virus
DNA	Deoxyribonucleic Acid
EPI	Expanded Programme on Immunization
GES	Ghana Education Services
GSS	Ghana Statistical Service
HBeAg	Serum Hepatitis B Envelope Antigen
HBIG	Hepatitis B immune globulin
HBV	Hepatitis B virus
HCC	Hepatocellular Carcinoma
HIV	Human Immunodeficiency Virus
HSV-2	Herpes Simplex Virus Type 2
STDs	Sexually Transmitted Diseases

WHO World Health Organization

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CHAPTER ONE

INTRODUCTION

1.0 Background of the study

Hepatitis B virus (HBV) causes liver inflammation leading to Hepatitis B diseases such as liver cirrhosis and liver malignancy which can be a life-threatening disease to the infected person (Bittaye, et al., 2019). Very severe cases of hepatitis B virus may lead to the death of a person, making it a public health concern (World Health Organization, 2017). Majority of pregnant women are ignorant about Hepatitis B Virus (HBV) infection status. Consequently, they live with this complex disease without knowing. HBV infections are sometimes asymptomatic; meaning there is a possibility that people will be contagious without his or her knowledge (WHO, 2015). However, some group of people may exhibit a couple of critical symptoms like vomiting/nausea, fatigue, low appetite for food, jaundice or pain in the abdomen (Yakasai, Abubakar, Ayyuba, & Ibrahim, 2017). The transmission route of hepatitis B among the high-risk group in low endemic areas is through sexual contact whilst perinatal transmission route is among high endemic areas like Sub-Sahara Africa and Asia thus; during labour and delivery, due to the infant exposure to maternal blood and other body fluids (WHO, 2015). Pregnant women with chronic hepatitis B virus have more than 69% but less than 91% probability of transmitting the infection to neonates, however, the transmission among young children under five years is 20% - 60% (WHO, 2017). Most hepatitis B virus infections are acquired during the perinatal period and early childhood (Otta, Stevens, Groeger, & Wiersma, 2017). There is a soaring prevalence of hepatitis B infection among

women of reproductive age and about 65 million women can potentially transmit the disease to their newborn (WHO, 2017). A segment of the "HBsAg positive mothers and HBeAg positive" may perhaps be at an increased risk of transmitting HBV infection to their unborn babies (Yakasai, et al., 2017). These babies are at high risk (90%) of being chronic carriers of HBV infections leading to an increase in the population pool of the virus (Bartoloni & Zammarchi, 2018). The most effective mediation to avert mother to child spread of Hepatitis B is through early identification of HBV disease-ridden pregnant women and the screening of asymptomatic pregnant women to diagnosis the infection early enough and place them under the appropriate treatment (Awiah, 2018). Universal Hepatitis B Immunization Programmes that aims at pregnant women and children, with the first dose at birth, have been highly active in reducing the occurrence and prevalence of hepatitis B in many endemic countries. Countries in sub-Saharan Africa are at different phases of introducing hepatitis B vaccines into primary health care (WHO, 2015). In Ghana, the Universal Hepatitis Immunization Programme was introduced into the Expanded Programme on Immunization in 2002 and all pregnant women visiting the antenatal clinics are tested for hepatitis B virus irrespective of whether she has been tested and taken the vaccine previously or not (Ofor-Asenso & Agyemang, 2016). Those who have not received the vaccines are advised to go for it during ANC visit. HBsAg and HBeAg positive mothers are immediately placed on the tenofovir vaccine and providing the newborn hepatitis B birth dose and hepatitis B immune globulin within the first day of birth and completing the vaccine series (Awiah, 2018). Awareness of pregnant women on hepatitis B and the knowledge on how it can be prevented through testing and vaccination is important for the effective control of the disease (Troung, 2019). As perinatal transmission remains the most important route of spread of the disease, it is critical to launching strategic ANC programs to involve women within the reproductive age to check the mother-to-child spread of HBV. Such interventions would entail mothers

understand the essentials of HBV testing and vaccination when pregnant, the importance of appropriate infant hepatitis B vaccination, and for disease-ridden mothers the significance of the newborn getting hepatitis B birth dose and hepatitis B immune globulin within the first day of birth and finishing the vaccine series. However, a study conducted in Uganda indicates that a lot of Pregnant women and mothers lack knowledge concerning HBV transmission and its control measures irrespective of their age, educational level, job classification, household income, and previous exposure to HBV information and time and again do not see the importance of testing and vaccinating themselves against the disease (Bittaye, et al., 2019). In Ghana, available relevant research has demonstrated that information about HBV, which comprises of how the disease is spread and control measures; are woefully inadequate among pregnant women. In northern Ghana, relevant literature as shown in a study conducted in the Upper West Region with a focus to look at the knowledge of HBV among pregnant women stated inadequate level of knowledge and misunderstandings about the disease (Awiah, 2018). Concerning the above, a study carried out among pregnant women at antenatal clinics in the Kintampo North Municipal shows that about 61% of the respondents were unaware hepatitis B was a disease (Abdulai, Baiden, Adjei, & Owusu-Agyei, 2016). Studies have also that HBV vaccination has been very low among pregnant women (Adeyemi, Enabor, Ugwu, Bello, & Olayemi, 2017). Studies in Ghana have estimated HBV prevalence to be between 6.7% and 11% among blood donors, 6.4% among pregnant women 20 and 15.6% among children in the general population (Walani, Hokey, & Ahiaba, 2016). The inadequate level of information and its assimilation on HBV amongst women who are pregnant remains an unexploited prospect to teach pregnant women on the cascading problems associated with HBV complications on the pregnant women (mother) and the fetus. From the aforementioned, emphasizes should be placed on health promotion intervention to increase knowledge and vaccination of HBV among women of reproductive age that is why this study

seeks to determine the awareness of Hepatitis B virus infection among pregnant women in the Senase community of the Berekum Municipality.

1.1 Problem Statement

Hepatitis B Viral Infection (HBV) is one of the leading causes of illness and death in the globe, resulting in about 38-53% cases of chronic liver diseases and about six hundred and six thousand deaths every year (WHO, 2017). In Sub-Saharan Africa, the prevalence of HBV infection is 9 – 20% and in Ghana, it is 12.3% among the universal population and 13.1 % among pregnant women, this exceeds the (≥8%) threshold for high endemic countries (Ofori-Asenso & Agyeman, 2016). Mother to child transmission of hepatitis B is still the principal causal factor of becoming a chronic hepatitis B infection carrier, thus about 95% for infections acquired during the perinatal period compared with only 5% for those acquired during adulthood (WHO, 2017). Good knowledge of hepatitis B among pregnant women is the most effective way to improve testing and vaccination against this infection, however, there is low knowledge on hepatitis B among pregnant.

A study conducted among pregnant women in the Kintampo North Municipal in Ghana reported over 50% of the respondents were not aware of hepatitis B virus infection (Abdulai et al., 2016). Also, a study conducted among pregnant in Gushegu in the Northern Region of Ghana shows that only 47.5% of respondents have heard of HBV and only 2.5% of them received the vaccination before becoming pregnant (Zimtani, 2017). Two studies conducted among pregnant women in Nigeria also revealed that only 9.7% and 21.2% respectively received HBV vaccines (Adeyemi et al., 2017). To the best of the research team's knowledge, there has not been any study assessing pregnant women's knowledge and vaccination status

on hepatitis B virus infection at the Senase Health Center in the Senase community of the Berekum Municipality.

1.2 General objective

To determine the awareness of Hepatitis B virus infection among pregnant women who attend ANC at the Senase Health Center in the Senase community of the Berekum Municipality.

1.3 Specific objectives

The study sought to:

1. assess the knowledge level on Hepatitis B virus infection among pregnant women
2. assess the risk factors associated with Hepatitis B virus infection among women who are pregnant
3. assess the management and prevention of Hepatitis B virus infection among pregnant women

1.4 Operational definition

Knowledge: defined as an information an individual has about the subject at hand

Risk factor: refers to something that increases the chance of developing a disease

Vaccination: defined as the act of introducing a vaccine into the body to produce protection from a specific disease

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter contains review of relevant literature related to the research topic. The sources of information include books, journals, online articles and research reports. It is organized based on the specific objectives of the study.

2.1 Knowledge on Hepatitis B Virus Among Pregnant Women

The World Health Organization recognizes the inadequate information and awareness on HBV is one among the many factors affecting the efforts that recognized organization such as WHO has established to control the hazard related to hepatitis B virus infection worldwide (WHO, 2017). This inadequate knowledge persists among personnel who provide health service, social service authorities, the youth, the general public and sometimes those at the top of policy making (WHO, 2015). The inadequate information and awareness of hepatitis B tied with other related factors explain the little attention given to HBV screening in Asia (Van Der Veen, Vocten, Zwart, & Richardus, 2019). Hepatitis B has proven to be a public health issue because of the mortality rate associated with it. Poor knowledge of the virus among the at-risk population makes the infection a serious health issue that demands much public attention. People with adequate knowledge of the signs and symptoms of a disease condition means they can promptly look for medical care without any delays. In the same manner, individuals with good knowledge of the routes of HBV transmission, prevention and control

measures will take the right steps to protect themselves from the virus infection. Several research works have been studied to evaluate pregnant women's knowledge and awareness of Hepatitis B (Ocana, Casas, Buhigas, & Lledo, 2018).

In Ghana, a study conducted among two hundred and nine (209) women who were pregnant and a total of thirty-six doctors in a cross-sectional study intended at assessing the knowledge status of these respondents on HBV and readiness to roll out the to bring down the HBV rate of spread. The authors revealed that as high as 96% of women who are pregnant revealed that have had information on HBV infection before. Most of the study participant did not know that HBV infection tends to cause cancer. About 20% of the women doubted the possibility of HBV infection to be transferred from a mother to their babies. The study further revealed that; a majority of the study participants did not present appreciable knowledge on how HBV was transmitted from one person to another. However, for those who had appreciable knowledge on the subject matter (HBV infection), 55 per cent of the study participant were convinced that hepatitis B infection could be spread from a pregnant mother to her baby. Also, about 48% believed that unprotected sexual intercourse with an infected person was one other key way of spreading the disease. The study suggested that an enhancement in the teaching on hepatitis B virus infection in pregnancy during the antenatal care visit to be enforced at the same time talking about possible suitable cost for services, waste of time in accessing the services as well as periodic education courses for the health care delivery professionals (Cheng, et al., 2015).

Inadequate knowledge of HBV reported by Awiah (2018) in research to measure women's awareness of HBV infection spread and ways of preventing it. This study showed that most of the respondents were not knowing that pregnant women can transmit the disease to the unborn child (Awiah, 2018).

In South-Western Nigeria, a descriptive cross-sectional study design conducted amongst three hundred and fifty-three women who were pregnant across about ten (10) health delivery centres in the region in a comparative valuation of hepatitis B reactive and non-reactive pregnant women concerning the level of knowledge on hepatitis B virus infection on and its spread among the population (transmission). It was observed by the study that, a greater percentage of women who were HBV reactive believed that hepatitis B virus infection was more easily transmitted from one person to another than HIV does as compared to 46% (being the minority of the study participants) of their counterparts who were non-reactive to HBV infection. Furthermore, more than 90% of both reactive and non-reactive HBV women believed that HBV was a vaccine-preventable disease and more than 70% believed it could be transmitted via blood. The study established a statistically weighted association between the level of knowledge on HBV and unprotected sex. Pregnant women reported to be HBV negative had higher knowledge of the sexual spread of the virus infections (Atiola, et al., 2018).

A study was carried in three (3) antenatal care services centers at Ibadan. The study recruited six hundred and forty-three women who were pregnant employing the cross-sectional design with the chief objective of determining the level of knowledge of hepatitis B virus infection and explore the scope of testing and vaccination among women visiting antenatal care centers at several healthcare delivery facilities. The research revealed that majority of the pregnant women had poor knowledge of the hepatitis B virus infection (Adeyemi et al., 2017).

In Cameroon, research work conducted among one hundred and seventy-six study participants (pregnant women) to determine the rate of HBsAg and the level of information they have on HBV infection in pregnancy. The research reveals a very weak understanding of the infection among these pregnant women. More than half of the participants have never any

information on HBV infection and more than 80% of these participants could not tell if hepatitis B infection was caused by a virus infection. The study participants also had inadequate knowledge that the disease could be prevented by receiving the HBV vaccine. Only about 17% of the study participates had a better understanding of Hepatitis B and this was associated with the participants educational level (Frambo, Atashili, Fon, & Ndumbe, 2014).

Research was conducted to examine the prevalence of HBsAg, knowledge status and the risk factors connected with HBV among women who were pregnant, prevention and spread in the Limbe Health District (LHD) and Muyuka Health District (MHD). The research showed that women who were pregnant in the LHD had sufficient knowledge on HBV but stick to bad practices while those in the MHD, women who were pregnant were observed to have poor knowledge on HBV infection as well as adopts negative practices towards the spread of and control of HBV infection (Eyong, et al., 2019).

Research conducted in seven antenatal care units in Honiara, the Solomon Islands to weigh the knowledge, attitude and practice as proofs for active hepatitis B virus infection awareness rising and promotion program. The study showed that pregnant women had very weak (poor) knowledge. This was said to cover the lack of appreciations on the fundamentals of infection control and the control of the spread of HBV (Giri, Panda, & Sahoo, 2016).

In Vietnam, a survey carried out to assess the KAP among three hundred and eighty women who were pregnant and breastfeeding mothers regarding the prevention and HBV immunization. A total of 18 questions were used to assess the knowledge level of the study participants. 70.3% of study participants stated that they have received information about hepatitis B virus d at the time of pregnancy, only 10.8 per cent of the study participants

answered all questions correctly concerning hepatitis B virus infection spread and preventive measures. Respondents knew that hepatitis B infection could be transferred from one person to another via perinatal (84.2%), unprotected sexual intercourse (75.3%), and transfusion with HBV infected blood (85.8%). Nevertheless, they were mutual that misunderstandings hepatitis B virus could be spread via coughing and sneezing was (41.8%), polluted water (45.8%), and sharing a meal with infected persons (52.4%) (Hang Pharm, et al., 2019).

2.2 Risk Factors Associated with HBV Infection

A lot of studies have shown that ear piercing, tattooing of the body and scarification are connected to hepatitis B infection in pregnancy (Abongwa, Kenneth, & Bamenda, 2016). Research conducted among women attending antenatal care services showed that making perforations on the nose for beautification and all other purposes was a significant predictor of the hepatitis B virus infection (Umare, Seyoum, Gobena, & Haile Mariyam, 2016). An unmatched case-control study conducted among pregnant women found that ear and nose piercing, scarification of the body and tattooing of the body, was statistically significant with Hepatitis B infection (Mwaningange, 2018).

Available literature suggests that the main route for the spread of HIV/AIDS and HBV infection among pregnant women is a blood transfusion from a reactive or positive donor's blood used for transfusions the is next to after multiple sexual contacts, predominantly in Sub Saharan Africa (Atiola, et al., 2018). In some Africa countries such as Cameroon, a study has shown that the hepatitis B virus infection rate was at 12.1% among donors of blood in various hospitals' blood banks (Noubiap, Joko, Nansseu, Tene, & Siaka, 2018).

Research conducted in southwestern Nigeria to study the epidemiology of Hepatitis B infection among three hundred and fifty-three (353) women who are pregnant in ten (10)

health centers demonstrated a positively strong correlation between hepatitis B infections via blood transfusion in the last three months. These findings further present a strong case that blood transfusion is a strong route for the spread of hepatitis B virus infection among women who are pregnant (Atiola, et al., 2018).

In another Africa country (Ethiopia), a study aimed at determining the extent of serum HBsAg and the causal factors associated with HBV infections was carried out among three hundred and thirty-eight (338) women who are pregnant as well as had a previous record of blood transfusion, having a history of several sexual cohorts and having a history tonsillectomy were the major risk factors linked to hepatitis B virus infection (Gedefaw, Waltengus, & Akililu, 2019).

Often the major channel for the spread of hepatitis B virus infection and sexually transmitted diseases (STDs) are very common (Bittaye, et al., 2019). The primary direction to the spread of STDs is unprotected sexual interaction which consists of sexing without condoms as well as having various sexual cronies which encompass multiple sexual partners. The understanding regarding STDs such as HIV/AIDs and others have shown that these infections compromised the ability of the body to fight other infections such as HBV infection (Unemo, et al., 2017).

A research work conducted in the Volta Region of Ghana to assess the seroprevalence of hepatitis (HBV&HCV) and their causal factors in pregnancy during ANC attendance in Battor Catholic Hospital revealed that of the numerous predisposing factors analyzed, engaging in sex with many other persons was the only significant factor in the attainment of hepatitis B virus infection (Tetteh, 2016).

In another study conducted in Nigeria, the main predisposing variables recognized were the advanced number of sex mates since sexual debut, multiple sexual partners and previous sexually transmitted infection (Obi, Onah, & Ezugwu, 2016).

In another African country (Ethiopia), research carried out among women who were pregnant and accessing the health services at the antenatal care (ANC) clinic for a regular checkup during pregnancy revealed women with many sexual cronies had sixteen (16) times chances of getting the hepatitis B virus infection than those without many sex partners (Umare, et al., 2016).

A study to assess the rate of spread and the risk factors link with HBV infection amongst one hundred and twenty-four women who were pregnant which included seventy-four HIV positive participants as well as fifty negative HIV participants were including 74 HIV-infected were recruited for the study. The research at the end disclosed that the rate of hepatitis B virus infection among the women who were positive for HIV participants was higher as compared to their counterparts who were negative for t HIV (thus 14.9% versus 10%) (Ntiamoah, 2016). A case-control study on Hepatitis B risk factors also showed that STI's were strongly correlated to Hepatitis B infection (Mwaningange, 2018).

The environment of the hospital presents a conducive atmosphere for the spread of numerous diseases (Ogundele, 2018). The medium to the spread of HBV infection nevertheless is basically via fluids which are very paramount in the hospital setting (Lesi, 2016). Patients and their relatives who are seeking care for other ailments shares "washrooms, utensils and other spaces". This makes the spread of hepatitis B virus in the hospital area very easy. Notwithstanding above, health care professionals who are reactive for HBV infection could also transmit it to the patient by way of giving treatment, negligence or accidental behaviors

during a blood transfusion, use of sharp objectives could also become a medium in which the hepatitis B virus can be transmitted (Ibitoye, 2016).

In a research work conducted in a hospital setting, it was reported that pregnant women who were admitted into the hospital were at a greater risk of contracting nosocomial hepatitis B infection (Nazzal & Sobuh, 2017). Other possible factors or behaviors that can serve as a suitable medium for the spread of hepatitis B virus infection consist of the following; “severe immune-suppression secondary to the other diseases, prolonged hospital admission, repeated venipuncture and an increased need for invasive procedures” (Eyong, et al., 2019).

2.3 Management and Prevention of Hepatitis B Virus Infection Among Pregnant Women

The ideal standard with regards to the treatment of HBV is to prevent the progression of the infection to advance stage such as liver cirrhosis, failure of liver or hepatocellular (liver cells) carcinoma (HCC) (Abdulai, et al, 2016). In general, the treatment regime and management modalities of HBV are usually very limited due to the cascading effects of the available treatment on the foetus (Awiah, 2018). The following medications; Lamivudine, Telbivudine and Tenofovir are the best choice of treatment for HBV in pregnancy. Though the drugs listed above are safe in pregnancy, Telbivudine and Lamivudine not recommended treatment options for breastfeeding mothers due to a higher concentration of drugs in breast milk (Awiah, 2018).

According to literature, there exist three (3) main components in the management of hepatitis B virus infection. The component consists of intersecting HBV spread, treating individuals who have the disease and controlling the deaths connected to HBV infection such as HCC (Bartoloni & Zammarchi, 2018). Essentially, reducing the impact of HBV infection

encompasses three phases, that is; primary method of HBV prevention (vaccines and post-exposure prophylaxis), a secondary method of HBV prevention and spread (once the individual is infected) and finally a tertiary method of HBV prevention; thus; preventing the medical consequences of long-lasting Hepatitis B infection by administering the patient with anti-viral drugs (Cheng, et al., 2015).

Primary Prevention Measures

The Primary preventive is targeted at curbing the infection (in this case, the HBV infection) from affecting anyone (Zimtani, 2017). This is achieved by dropping or removing exposures and habits that are seen to give rise to a person's likelihood of contracting the disease. With Hepatitis B, increasing the patient's resistance to HBV infection is crucial to primary prevention. The spread of hepatitis B virus infection can be excellently controlled by way of immunization with any appropriate hepatitis B vaccine. Since the year 1982, the hepatitis B vaccine was developed and is proven to have about 95% efficacy in avoiding the infection and the growth of chronic disease caused by the hepatitis B virus infection (WHO, 2015) For low- and middle-income countries (LMIC), worldwide vaccination policy for the children is the most effective way to prevent the spread of hepatitis B virus infection (Frambo, Atashili, Fon, & Ndumbe, 2014). The prevalence of HBV infection in pregnancy is still high (1 in 8) which rationalizes the formation of a national HBV screening program for all women in antenatal clinics in all parts of Ghana (Ibitoye, 2016). The testing for hepatitis B virus infection one of the recommended routine test for all women who attend antenatal care clinic in Ghana (Awiah, 2018). Abdulai et al, (2016) upon completion of their research work recommended that all pregnant women tested negative for Hepatitis B must be vaccinated against the infection which should be a National policy.

It has been established that the inadequate level of information and awareness available on hepatitis B virus infection with demographic variables like little education and poor socioeconomic conditions results in few people going for Hep B screening leading to a lack of action toward Hep B testing and the provision of vaccines (Van Der Veen, Vocten, Zwart, & Richardus, 2019).

Secondary Preventive Measures

This usually occurs in the initial phases of the processes leading to the disease. The paramount target in this phase of preventive measures is to curb the transmission of hepatitis B virus infection. The events would usually include detecting the disease at the early stage, testing or screening and appropriate medical remedy and treatment (Cheng, et al., 2015).

In the whole world wide, blood transfusion of an infected donor's blood to the recipient is the chief cause of hepatitis B virus (Lesi, 2016). Ghana has a policy on blood donation which makes it mandatory for all donated blood to be screened for infections like Hepatitis C, HIV 1&2 Hepatitis B and syphilis (Mwaningange, 2018). Studies have shown that there is the need to adhere strictly to the policy as communicated by the national blood commission likes screening all donors before the bleed for possible transfusion and among others to avert the dangers of infecting others via blood transfusion (Nazzal & Sobuh, 2017). One other channel in which the hepatitis B virus infection spread is via the vertical spread (transmission) reactive or positive mother to their babies (Ofor-Asenso & Agyemang, 2016). Curbing the perinatal spread of hepatitis B virus infection depends strictly on the appropriate time for administration of post-exposure therapy (prophylaxis), Most importantly among babies whose mothers are reactive to the hepatitis B virus infection (Tetteh, 2016). The dangers of the spread of hepatitis B virus declines when there exist periodic perinatal hepatitis B virus

testing or screening, immune prophylaxis (hepatitis B Immunoglobulin) for babies born to reactive hep B mothers and hepatitis vaccine given both to the high-risk mother and the newborn (Ogundele, 2018). It has been demonstrated that the "passive-active post-experience prophylaxis with hepatitis B Immunoglobulin and HBV vaccine; vaccinated in two phases is 85 to 95% potent in controlling vertical spread compared to 70 to 95% of taken hepatitis B vaccine alone. It is ideal for a newly born baby to be given these vaccines within the first day of birth (Tetteh, 2016).

Engaging sex that is protected, use of sterile equipment for activities like tattooing of the body, piercing of the body (especially the nose and ear piercing), barbering, tribal marks etc. These are all secondary control measures which when implemented could effectively prevent the spread of Hepatitis B virus infection (Lesi, 2016).

Tertiary Preventive Measures

This comes at the later phase of the virus progression. The aim is to minimize the risk associated with the infection or reverse the effects. When a person contracts HBV, the agenda is to provide the patient with a treatment to avert the progression of the disease to liver cirrhosis stage, liver failure, or hepatocellular carcinoma (HCC) (Awiah, 2018). The approved drugs for the treatment of hepatitis B in pregnancy are; Lamivudine, Telbivudine and Tenofovir. Tenofovir other than the two drugs is safer to be taken during breastfeeding because it has a lower concentration in breast milk (Frambo, et al., 2014). Dietary control of the infection involves taking a low-sodium, high protein diet and fluid restriction are necessary for cases of decompensated cirrhosis (Bartoloni & Zammarchi, 2018). Liver

transplant is the Last Option in cases of fulminant hepatic failure and for individuals at the end-stage hepatitis B liver (Ibitoye, 2016).

CHAPTER THREE

MATERIALS AND METHODS

3.0 Introduction

This chapter talks about the study area and population, the study design, sampling techniques, data collection method and instrument, data analysis techniques, ethical considerations, and limitations encountered during the study.

3.1 Study area

The study was conducted at the Senase Health Center in the Senase community located in the Berekum Municipality. The distance from Berekum to Senase is one kilometer by road. Berekum is a town in the Bono Region of Ghana. The town is known for the Methodist Secondary Technical School which is a second cycle institution. The native language of the Berekum people is Bono Twi. The municipality comprises of Christians, Muslims and

Traditionalists. The population is largely made of Akans. It is a youthful population. Farming is predominant among the people of Berekum.

3.2 The study population

The study population was pregnant women within the Senase community in the Berekum Municipality. The accessible population was pregnant women attending ANC at Senase Health Center.

3.3 Study design

A descriptive cross-sectional design was adopted for the study because of its cost effectiveness. It does not require a lot of time, captures a specific point in time and the data can be used for various types of research.

3.4 Sampling technique and size

A convenience sampling technique was used to select participants for the study because it is extremely speedy, easy, and cost-effective sampling method. Participant recruitment was voluntary. The study population which were pregnant women in Senase were approached about participating in this study. A total of 50 participants were used for the study because the research team wanted to limit contact with large number of people in the community as a result of the on-going pandemic thus COVID-19.

3.5 Data collection methods and instruments

Data gathering was done through direct personal interview. Questions from the interview guide were posed to respondents to answer within a time frame of 20 minutes. Women with language barrier had their questions translated to their dialect for better understanding.

3.6 Data analysis techniques

Microsoft excel was used to analyze the data in this study. This data analysis software was used because it is an extremely powerful tool for manipulating and deciphering research data. Descriptive statistics in the form of frequency distribution tables, pie charts and bar graph were used to describe the study variables.

3.7 Ethical consideration

An introductory letter from the Nursing and Midwifery Training College was sent to the management of Senase Health Center before conducting the study. Participants were informed of the benefits, risks, purpose, and procedure of the study and their right to withdraw from the study at any point without penalty. Moreover, participants were fairly selected, no form of harm and discomfort was done. The research team ensured no form of research misconduct transpired throughout the period of the study.

3.8 Limitation of the Study

The study was limited by inadequate financial resources. The study was conducted with a sample size of 50 which made it difficult to generalize the findings.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

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

4.1 Demographic Profile of Respondents

Table 1: Respondents demographic profile

Variables	**Categories**	**Frequency (n)**	**Percentage (%)**
Age	20-24 years	13	26
	25-29 years	17	34
	30-34 years	16	32
	35 years and above	4	8
Marital status	Single	0	0
	Married	41	82
	Widowed	2	4
	Separated/divorced	7	14
Level of education	No formal education	8	16

	Primary education	26	52
	Secondary education	12	24
	Tertiary education	4	8
Occupational status	Farming	12	24
	Small trade business	8	16
	Profession	6	12
	Housewife	20	40
	Other	4	8
Parity	Para One	30	60
	Para Two	8	16
	Para Three	3	6
	Those who are pregnant but not yet delivered	9	18

The study recruited 50 pregnant women from the selected hospital for the quantitative study. In trying to find out their ages as at their last birthday, most of the respondents 34% were within the ages of 25 to 29 years followed by 32% of the pregnant women were within 30 to 34 years, 26% were within 20 to 24 years and 8% of the pregnant women were 35 years and above. In trying to know the marital status of the respondents, almost all 82% of the respondents were married, 14% of them being either divorced or separated and 4% of the pregnant women were widows. In assessing the level of education of the study participants, most of the pregnant women 52% have been up to primary level education, 24% ended at senior high school, 16% of them had no formal education and 8% have had some level of tertiary education. In trying to find out the occupation of the respondents, most of the women

40% were housewives, 24% of the women were farmers, 16% were engaged in small business, 12% had a professional job (a teacher and a nurse), and 8% engage in other forms of jobs. Regarding parity, most of the respondents 60% indicated one parity followed by two 16%, three 6% and none 18%.

4.2 Knowledge on Hepatitis B Virus Among Pregnant Women

In trying to know the knowledge level of Hepatitis B virus, the highest information they knew about HBV was causes of HBV 60%. Over 56% of the pregnant women had information about HBV vaccination. Half 50% of the pregnant women had information on transmission routes of HBV. Less than half 42% of the pregnant women had information on HVB prevention as indicated on the table below;

Categories	**Frequency (n)**	**Percentage (%)**
Causes of HBV	30	60
Transmission route	25	50
HBV vaccination	28	56
HBV prevention	21	42

In trying to know the causes of HBV among the respondents, majority 96% of the respondents mentioned that having unprotected sexual intercourse with an infected person as

a cause of HBV infection. Most of the respondents mentioned sharing sharps with the infected 70% and infected mother to child transmission as a cause of HBV infection. Little over half 52% of the respondents mentioned that blood transfusion as a cause of HBV infection. As indicated on the table below;

Categories	**Frequency (n)**	**Percentage (%)**
Unprotected sexual intercourse with the infected	48	45
Mother to child transmission	32	30
Sharing sharps with the infected	35	15
Blood transfusion	26	10

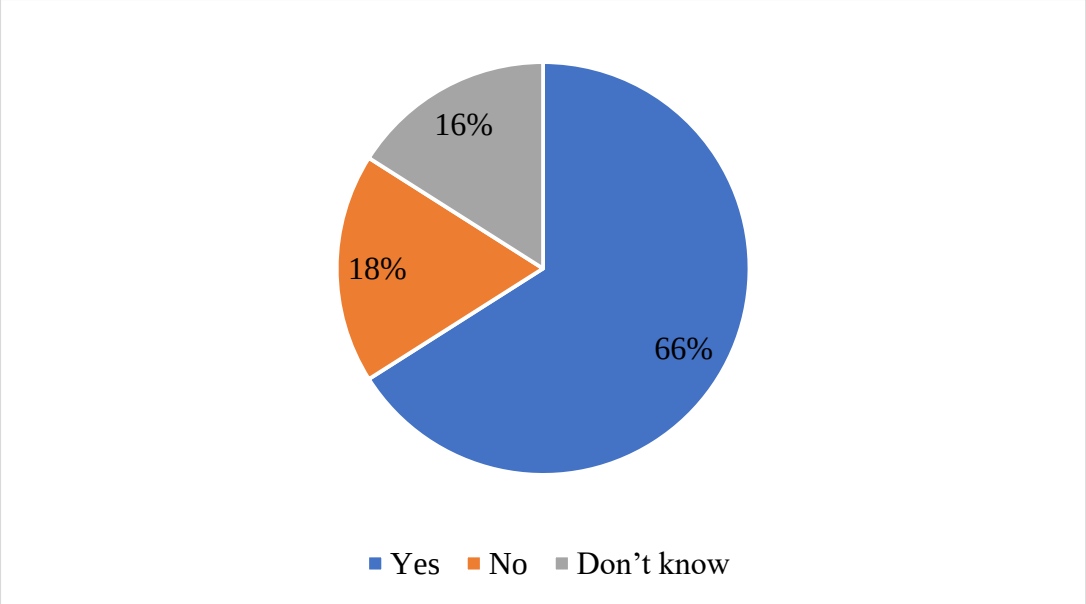
In soliciting for ideas on the mode of transmission, responses participants gave regarding mode of transmission of HBV, Almost all 98% the respondents mentioned mixture of blood as a mode of transmission for HBV. Majority 88% of the respondents wrote body fluids such as semen and saliva to be the mode of transmission for HBV.

As indicated on the table below;

Categories	**Frequency (n)**	**Percentage (%)**
Mixture of Blood	49	65
Body fluids	44	35

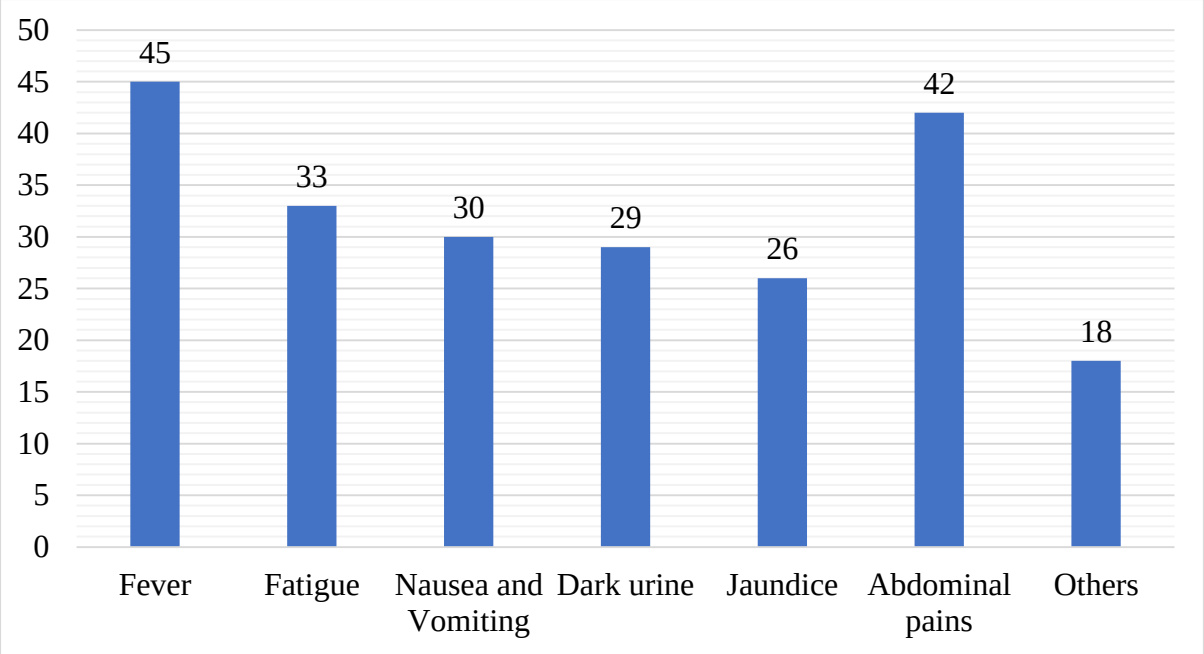
Most, 66% of the respondents indicated they have been vaccinated against HBV, few 18% said they have not and only 16% of them indicated they didn't know their vaccination status.

The pie chart below shows the information of the respondents on their vaccination status;



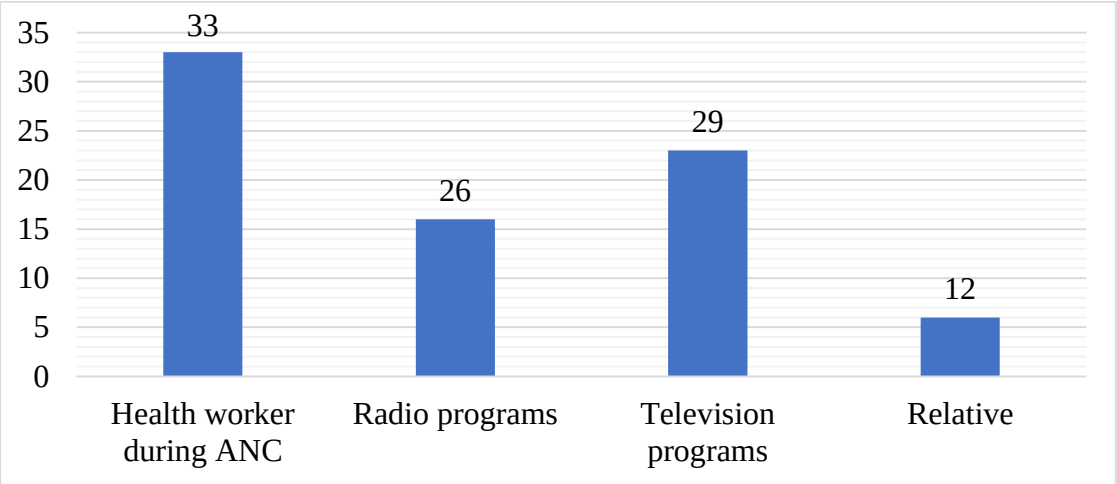
Symptoms of Hepatitis B

In soliciting for ideas on the signs and symptoms of HBV, where respondents were allowed to make multiple choices, the results shows that 90% of the respondents stated fever as signs and symptoms of HBV, followed by abdominal pain 84%, fatigue 66%, nausea and vomiting 60%, dark urine 58% and jaundice 52%. Other signs and symptoms stated by respondents were loss of appetite 32% and joint pains 20%. Figure 1.0 shows the above information;



Source of information on hepatitis B

In assessing for the sources of information on hepatitis B among respondents during pregnancy, majority 33% received information from health workers during ANC followed by watching television programs 29%, 26% of the pregnant women received information from radio programs and only 12% had information on hepatitis B from relatives. The figure below shows the above information;



Hepatitis B Risk Factors Among Pregnant Women

In assessing the risk factors associated with HBV among pregnant women, where multiple choice section was allowed, high number of pregnant women indicated that unprotected sex 92% and having sex with multiple sex partners 88% as factors that can lead to one contracting HBV, another reasonable number indicated that unsterilized instruments like needles and blades 78%, blood transfusion 70%, and piercing and tattooing 66% as factors that can lead to one contracting HBV, the respondents saw that coming into contact with infected persons 56%, having immune suppressive condition 54% and husband having another wife/wives 52% can result in one contracting HBV**.**

As indicated on the table below;

Variables	**Frequency (n)**	**Percentage (%)**
unprotected sex	46	92
having sex with multiple sex partners	44	88
piercing and tattooing	33	66
blood transfusion	35	70
unsterilized instruments like needles and blades	39	78
coming into contact with infected persons	28	56
husband having another wife/wives	26	52
having immune suppressive condition	27	54

Management and Prevention of Hepatitis B Virus Infection Among Pregnant Women

In answering one of the research questions on management and prevention, the following was the outcome; most of the respondents 82% of the pregnant women thought they need to be tested for hepatitis B, 80% of the pregnant women indicated they had ever tested for hepatitis

B during their pregnancy or any of their pregnancy, majority 80% of the respondents indicated hospital as the place where Hepatitis B can be cured or managed followed by herbalist 56%, home 24% and prayer camp 10%, majority 84% of the respondents indicated that vaccination is able prevent one from getting Hepatitis B infection.

As indicated on the table below;

Variables	**Categories**	**Frequency (n)**	**Percentage (%)**
As a pregnant woman, do you think you need to be tested for Hepatitis B?	Yes	41	82
	No	3	6
	Don't know	6	12
Have you ever tested for hepatitis B during this pregnancy or any of your pregnancy?	Yes	40	80
	No	4	24
	Don't remember	6	12
Indicate the places where Hepatitis B can be cured or managed	Hospital	40	80
	Herbalists	28	56
	At home	12	24
	Prayer camp	5	10
	Other (specify)	0	0
Can vaccination prevent one from getting Hepatitis B infection	Yes	42	84
	No	2	4
	Don't know	6	12

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS

5.0 Introduction

This chapter discusses pertinent results from the study with new insights and comparisons made with studies conducted in other jurisdictions. The discussion is done based on the objectives of the study

5.1 Discussions

5.1.1 Knowledge on Hepatitis B Virus Infection Among Pregnant Women

According to WHO (2016), inadequate information and awareness on infectious diseases such as Hepatitis B remain one among many factors affecting efforts by recognized institutions such as the WHO control over the hazards associated with Hepatitis B infection worldwide. Similarly, a higher percentage of knowledge was reported as 96% of pregnant women in the study had information on HBV infection (Cheng et al., 2015). Correspondingly, Awiah (2018) reported that education and testing for hepatitis B virus infection are some of the recommended routines for pregnant women attending antenatal care clinic in Ghana.

In this current study, the respondents had some level of knowledge about HBV. The highest information they knew about HBV was causes of HBV (60%). Half (50%) of the pregnant women had information on transmission routes of HBV. Less than half (42%) of the pregnant women had information on HVB prevention. These findings shows that pregnant women know something about HBV.

The current study found that, over half 56% of the pregnant women had information about HBV vaccination.

A high percentage of pregnant women in this study knew about the signs and symptoms of HBV such as fever, abdominal pain, fatigue, nausea and vomiting, loss of appetite, dark urine, joint pains and jaundice in that order as the signs and symptoms of the infection.

Majority, 96% of the respondents mentioned that having unprotected sexual intercourse with an infected person as a cause of HBV infection. Most of the respondents mentioned sharing sharps with the infected 70% and infected mother to child transmission as a causes of HBV infection. Over half, 52% of the respondents mentioned that blood transfusion as a cause of HBV infection.

In the current study, majority of the pregnant women indicated that hepatitis B can be prevented through vaccination.

Consequently, majority of the women in this study mentioned health workers as their main source of information on Hepatitis B. This however differed from another cross-sectional study conducted in Ghana among pregnant women where Radio was reported to be the main

source of information on Hepatitis B (Abdulai et al., 2016). It must be stated that in this current study, media (TV/Radio) was the next source of information for pregnant women.

5.1.2 Hepatitis B Risk Factors Among Pregnant Women

Risk factors associated with HBV infection in literature include the history of blood transfusion, having multiple sexual partners, a history of tonsillectomy (Gedefaw et al., 2019). A lot of studies have shown that ear piercing, tattooing of the body and scarification are connected to hepatitis B infection in pregnancy (Abongwa, et al. 2016).

Similarly, In this current study, majority of respondents indicated that unprotected sex (92%), blood transfusion (70%) and having sex with multiple sex partners (88%) as factors that can lead to one contracting HBV. Over half of the respondents saw that husband having another wife/wives (52%) can result in one contracting HBV. Equally, in the current study most of the respondents indicated piercing and tattooing (66%) as a factor that can lead to one contracting HBV.

5.1.3 Management and Prevention of Hepatitis B Virus Infection Among Pregnant Women

The Hepatitis B virus vaccine is known to be 95% effective in preventing infection and hepatitis B complications (WHO, 2015). The testing for hepatitis B virus infection is one of the recommended routine test for all women who are pregnant and attending antenatal care clinic in Ghana (Awiah, 2018). Similarly, Frambo et al. (2014) in their study opined that vaccination is the safest way of preventing mother to child transmission of HBV

Majority of respondents in this study were aware Hepatitis B was vaccine-preventable. They saw the need for HBV testing despite majority of the participant had never been tested before for HBV infection.

In the current study majority (84%) of the respondents indicated that vaccination is able prevent one from getting Hepatitis B infection.

5.2 Conclusion

In conclusion, though the study participant demonstrated appreciable knowledge of HBV, they were highly informed about the risk factors of HBV, and high vaccination coverage was seen as a preventive measure for HBV. Majority viewed the hospital as the best place to seek for cure or management of HBV.

5.3 Recommendation

Based on the analysis of data obtained from the field, the following conclusions were drawn.

1. Nurses and midwives in Senase should continue to educate women in their reproduction age about hepatitis B virus in order for them to get more insight about the infection.
2. Such research could be carried out at other parts of the region.
3. The Ministry of Health (MOH) and Non-governmental organizations (NGOs) should make hepatitis B virus screening and testing free for all pregnant women attending antenatal care clinic (ANC) .

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APPENDICES

QUESTIONNAIRE

Dear Respondent,

We are students from the Holy Family Nursing and Midwifery Training College, Berekum, conducting research on the topic ‘‘**Awareness of Hepatitis B virus Infection Among Pregnant Women Attending ANC at Senase Health Center’’**. Kindly answer the under listed questions by ticking (√**)** the appropriate box or write in the spaces provided. Any information provided is confidential. No opinion is considered wrong. You can choose to withdraw your participation at any time. It will take you approximately 20 minutes to answer the questionnaire.

Thank you

Please Tick [√] The Appropriate Box Where Applicable.

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. Indicate your age in years at last birthday: ……
2. What is your marital status?
   a. Single []
   b. Married []
   c. Widowed []
   d. Separated/divorced []
3. What is your level of education?
   a. No formal education []
   b. Primary education []
   c. Secondary education []
   d. Tertiary []

4. What is your occupational status?

   a. Farming []

   b. Business []

   c. Professional []

   d. Housewife []

   e. Others (specify)……

5. Parity…….

SECTION B: KNOWLEDGE ON HEPATITIS B VIRUS AMONG PREGNANT WOMEN

6. What information about HBV do you know?

   ……

   ……..……..

7. Indicate the causes HBV

   ……

   …….

8. What is the mode of transmission of HBV……..?

9. What are some of the signs and symptoms of HBV? (multiple selection allowed)

   a. Fever []

   b. Fatigue []

   c. Nausea and Vomiting []

   d. Dark urine []

   e. Jaundice []

   f. Abdominal pains []

   g. Others (specify)…….

10. Where did you receive information about HBV infection (multiple selection allowed)

a. Health worker during ANC visit []

b. Radio programs []

c. Television programs []

d. Relatives []

e. Others (specify)…….

SECTION C: HEPATITIS B RISK FACTORS AMONG PREGNANT WOMEN

11. How does one contract HBV? (multiple selection allowed)

a. unprotected sex []

b. having sex with multiple sex partners []

c. piercing and tattooing []

d. blood transfusion []

e. unsterilized instruments like needles and blades []

f. coming into contact with infected persons []

g. husband having another wife/wives []

h. having immune suppressive condition []

SECTION D: MANAGEMENT/PREVENTION OF HEPATITIS B AMONG PREGNANT WOMEN

12. As a pregnant woman, do you think you need to be tested for Hepatitis B?

a. Yes []

b. No []

c. Don't know []

13. Have you ever tested for hepatitis B during this pregnancy or any of your pregnancy?

a. Yes []

b. No []

c. Don't remember []

14. Indicate the places where Hepatitis B can be cured or managed

a. Hospital []

b. Herbalists []

c. At home []

d. Prayer camp []

e. Others (specify): …….

15. Can vaccination prevent one from getting Hepatitis B infection

a. Yes []

b. No []

c. Don't know []

16. Indicate the ways through which HBV can be prevented……..

……?

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Your Ref. .....

Date .....November 21, 2022

The In-Charge
Senase Health Center
Senase

PERMISSION TO CONDUCT RESEARCH

I wish to introduce to you the under listed names of final year students of the College:

1. **Fordjour Akyerekowaa Marian**
2. **Josephine Amankwah Oppong**
3. **Essibu Yartey Mary**

As part of the pre-requisite for the award of Diploma in Midwifery, they are to conduct a research study, hence the data collection on **"Awareness of Hepatitis B virus infection among pregnant women attending ANC at Senase Health Center".**

I would be grateful if you could assist them with any material or help they may need to accomplish this task.

Thank you.

Yours faithfully

.....
Ms. Martha Kyeremaa
Supervisor

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

For: Principal