

**KNOWLEDGE, PERCEPTION AND PRACTICES TOWARDS HEPATITIS B VIRUS
INFECTION AMONG IN-SCHOOL ADOLESCENTS IN IBADAN NORTHWEST
LOCAL GOVERNMENT AREA, IBADAN, OYO STATE**

BY

**Iyetade Oluwafunmilayo AYORINDE
B.Sc. BIOLOGY (UNIVERSITY OF ABUJA)
MATRIC. NO.: 209964**

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CERTIFICATION

I hereby certify that this study was carried out by Iyetade Oluwafunmilayo AYORINDE under my supervision in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria.

SUPERVISOR

Dr. MUSIBAU A. TITILOYE

B.Sc. (UNAAB); MPH (Ibadan); PhD (Ibadan) and Post-Doc (UKZN)

Senior Lecturer

Department of Health Promotion and Education,

Faculty of Public Health, College of Medicine,

University of Ibadan,

Ibadan, Nigeria

DEDICATION

I dedicate this research project to God Almighty that has shown excess love to me and my family and He has ordered my steps in life to this day and is the reason for the success of this project work.

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ABSTRACT

Hepatitis B is the world's most common liver infection, which is caused by a DNA-virus, the hepatitis B virus (HBV). There are more than 2 billion people World-wide, having evidence of recent or past HBV infection and 350 million are chronic carriers including Nigeria. Despite the prevalence of hepatitis B in Nigeria, little has been done to investigate the knowledge, perception and practices towards hepatitis B virus infection among in-school adolescents. This study was designed to assess knowledge, perception and practices towards hepatitis B virus infection among in-school adolescents in Ibadan Northwest Local Government Area, Ibadan, Oyo State, Nigeria.

This study was a descriptive cross-sectional survey using a 5 stage method to select twelve schools (12) which comprises 480 respondents. A semi-structured self-administered questionnaire comprising of socio-demographic characteristics, 20-point knowledge, 8-point perception and 17-point practice scale was used to elicit information related to respondents on HBV infection. Knowledge scores of 0-6, 7-13 and 14-20 were rated poor, fair and good knowledge respectively. Perception scores of 0-4 and >4 were rated negative and positive perception respectively. Practice scores of 0-8 and >8 were rated poor and good practice respectively. Data were analysed using descriptive statistics, Chi-square test/Fisher-exact with a level of significance set at $P < 0.05$.

Mean age was 13.8 ± 2.0 years, 39.8% were within 15-19 years, 56.3% of respondents were female, most (62.7%) of the respondents class were in Senior Secondary School. Majority (72.5%) were of Yoruba ethnic group while majority (66.3%), were Christians, 69.8% and 66.5% of the father and mother's respondents had tertiary education respectively while few (29.2%) of the father's occupation were civil servant and a bit more than half (51.3%) of the mother's occupations were traders. Few (25.4%) ever heard of HBV infection through various channels in which school was their major (37.7%) source of information. Out of those that have heard of HBV, the majority of the respondents correctly responded to many of the knowledge questions, 65.6%, 31.1% and 3.3% had good, fair and poor knowledge respectively with the mean knowledge score of 12.7 ± 2.8 . Also, the majority (62.3%) of the respondents had good perception and 37.7% had poor perception but 10.7% agreed that HBV is the reward of sin and 44.3% agreed that they are not at risk of getting HBV infection. Almost all (94.4%) of the

respondents had poor practices and only a few (5.6%) had good practices. Age, class, religion and father's occupation were statistically significant with the respondents' knowledge. The mother's occupations were statistically significant with the respondents' perception. Association between socio-demographic characteristics and practice was not statistically significant and the association between knowledge and practice was not statistically significant.

Practices towards Hepatitis B virus prevention were poor among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State. Public enlightenment, awareness, sensitization, training and advocacy need to be intensified.

Keywords: Hepatitis B Virus Infection, knowledge, perception, practices

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LIST OF ABBREVIATIONS

HBV	-	Hepatitis B Virus
HIV	-	Human Immunodeficiency Virus
IBNWLGA	-	Ibadan Northwest Local Government Area
WHO	-	World Health Organization
UNICEF	-	United Nations International Children's Emergency Fund
HBsAg	-	Hepatitis B surface antigen

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OPERATIONAL DEFINITION OF TERMS

Knowledge: Information, understanding, or skill gotten from education or experience.

Perception: Ability to understand or notice something or someone or One's own view about something

Practice: To do something again and again and this as to do with preventive measures taken against HBV infection.

Hepatitis B Virus infection: This is one of the acute forms of hepatitis which is a serious liver infection caused by the hepatitis B virus that is easily preventable by vaccine, spread by sexual contact or unsafe blood transfusion.

Hepatitis B infection: Is caused by Hepatitis B virus

In-School Adolescents: Any person between ages 10-19 which is in secondary school.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Hepatitis is a medical condition characterised by the inflammation of the liver and the presence of inflammatory cells in the tissue of the organ (WHO, 2002). A group of viruses known as the hepatitis viruses cause most cases of hepatitis worldwide; but it can be due to toxins (notably alcohol, certain medications and plants), other infections and autoimmune diseases (WHO, 2002). Although hepatitis can be the symptom of many illnesses, including autoimmune disease, it is most often caused by a viral infection (Iris, 2013).

There are five main hepatitis viruses, referred to as types A, B, C, D and E (WHO, 2002). These five types are of greatest concern because of the burden of illness and death they cause and the potential for outbreaks and epidemic spread. In particular, types B and C lead to chronic liver disease in hundreds of millions of people and together are the most common cause of liver cirrhosis and cancer (WHO, 2012a). Hepatitis A and E are typically caused by the ingestion of contaminated food or water. Hepatitis B, C and D usually occur as a result of parental contact with infected body fluids. The common modes of transmission for these viruses include receipt of contaminated blood or blood products, invasive medical procedures using contaminated equipment and hepatitis B transmission from mother to baby at birth, from family member to child, and also by sexual contact.

Hepatitis B virus (HBV) is a species of the genus Orthohepadnavirus, which is likewise a part of the Hepadnaviridae family of viruses (Hunt, 2007). This virus causes the disease of hepatitis B infection (Hassan, Li, and El-Deeb, 2008). The HBV is a small DNA virus with unusual features similar to retroviruses. Hepatitis B (also known as 'serum' hepatitis) is an acute systemic infection with major pathology in the liver caused by (HBV) hepatitis B virus (Ray, 2003). Hepatitis B Virus (HBV) is the most common cause of serious liver function in the world. Moreover, an estimated 400 million people are chronic carriers of hepatitis B.

Hepatitis may occur with limited or no symptoms but often leads to jaundice, anorexia (poor appetite) and malaise. Hepatitis B virus is highly contagious and relatively easy to transmit from

one infected individual to another, by blood to blood contact, during delivery, unprotected sex, by occupational contact with blood in a health care setting, and by sharing needles, and has relatively higher prevalence in the tropics (Finlayson, Hayes, and Simpson, 1999). Despite the availability of a safe and effective vaccine against Hepatitis B infection for over two decades now, the overall burden of the disease remains enormous with over two billion people infected worldwide and approximately one million deaths occur annually from hepatitis B Virus related illness (Lavenchy, 2004).

This disease has caused epidemics in parts of Asia and Africa, and it is endemic in China (Williams, 2006) with about a third of the world's population, more than 2 billion people have been infected with hepatitis B Virus (WHO, 2002). Hepatitis B is acute when it lasts less than six months and chronic when it persists longer. Hepatitis B virus is easily spread by direct contact with the blood or fluids of an infected person. Sometimes, people who are infected with the hepatitis B virus never recover fully from the infection. They carry the virus and can infect others for the rest of their lives (Ryder and Beckingham, 2001).

It is estimated that more than 350 million individuals are currently developing lifelong viral persistence and have a significant risk of progressive liver cirrhosis and primary hepatocellular carcinoma (HCC) with high morbidity and mortality (Ganem and Prince, 2004). About two-thirds of patients with acute HBV infection has a mild, asymptomatic and subclinical illness that usually goes undetected (McMahon, Alward, Hall, Heyward, Bender and Francis, 1985). Approximately one-third of adults with acute HBV infection develop clinical symptoms and signs of hepatitis, which range from mild constitutional symptoms of fatigue and nausea to more marked symptoms and jaundice, and rarely to acute liver failure.

Although most infected persons clear the hepatitis B virus out of their systems completely in a few months, in some people, especially infants and children, the hepatitis B virus can cause chronic lifelong liver infection. Chronic infection can lead to liver cirrhosis, liver cancer, and death. Others become ill with these symptoms including loss of appetite, tiredness, pain in muscles, joints, or stomach, diarrhea or vomiting, jaundice (yellowing of the skin and sclera of the eyes).

1.2 Statement of Problems

Hepatitis B Virus (HBV) infection is a life-threatening liver infection caused by the Hepatitis B virus. It is a major global health problem. It can cause chronic infection and puts people at high risk of death from cirrhosis and liver cancer (WHO, 2019). Hepatitis B is an important occupational hazard for health workers. The burden of this disease is enormous with over two billion people accounting one-third of the world population been infected. According to WHO, an estimated 257 million people are living with HBV infection and approximately 887 000 persons die each year from hepatitis B infection (WHO, 2018). The prevalence of hepatitis B virus infection varies from 0.1 percent to 2 percent in low prevalence areas, from 3 percent to 5 percent in intermediate prevalence areas and from 10 percent to 20 percent in high prevalence areas (Kowdley, Wang, and Welch, 2012). The prevalence of chronic hepatitis B virus infection also varies greatly by geographical region and can be categorized as high, intermediate and low endemicity worldwide and Nigeria has been classified as an HBV endemic zone (Forbi, Gabadi, Alabi, Iperepolu, Pam, Entonu, and Agwale, 2007).

Despite the public health importance of HBV and its threat to global health due to its high morbidity and mortality, it is yet to attract the attention of health authorities, public makers and the general public in Nigeria unlike the situation with HIV/AIDS, tuberculosis and malaria. Public enlightenment programmes and other health education activities on HBV infection are extremely limited.

Secondary school students constitute a larger segment of any population that is prone to infectious diseases if they lack precursory knowledge about these diseases, therefore they need to understand the good practices that can save them from these life-threatening infections especially the deadly ones like Hepatitis B. Therefore, this study will explore on the knowledge, perception and practices towards Hepatitis B Virus infection among In-School Adolescents.

1.3 Justification of the Study

Hepatitis B Virus is the common cause of chronic liver diseases worldwide, including cirrhosis and cancer. Not much is known of the HBV infections unlike HIV by the general public in Nigeria. Certain groups who are sexually active or who have frequent contacts with blood or blood products have a high rate of HBV infections. Studies have shown that adolescents and

young adults are said to be sexually active (Okafor and Obi, 2005, Zhang, Gao, Dong, Tan and Wu, 2002). Research also confirms that many young people engage in risky sexual activities including early debut to sexual activities, sex with many partners, low and inconsistent use of condoms (Amazigo, Silva, Kaufman and Obikeze, 1998, Olaseha and Alao, 1993). Also, previous studies in Nigeria have focused on medical and dental students and theatre and laboratory workers, health workers, but few studies have been done among in-school adolescents to assess their knowledge, perception and practices towards HBV infection in Nigeria.

Therefore, this study is appropriate for in-school adolescents due to the fact that the population of adolescents comprises more of those at risk and it is logical and of great importance to pay special attention to the health needs of this population. Thus the objective of the study is to investigate the knowledge, perception and practice measures taken among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State. This study has the potential for generating baseline information on the level of knowledge, perception and practice measures taken by students regarding the prevention of hepatitis B virus infection. This information will be useful to the Ministry of health and School Authorities in determining what information is to be passed to the public, students and also for the purpose of drawing up educational programmes regarding hepatitis B virus infections especially among in-school adolescents.

1.4 Research Questions

1. What is the knowledge of Hepatitis B Virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State?
2. What are the perceptions of in-school adolescents in Ibadan Northwest Local Government Area of Oyo State towards Hepatitis B Virus infection?
3. What are the practices towards Hepatitis B Virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State?

1.5 Objectives of the study

1.5.1 Broad Objective

The broad objective of this study is to investigate knowledge, perception and practices towards Hepatitis B Virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State.

1.5.2 The Specific objectives are to

1. Assess the knowledge of Hepatitis B Virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State.
2. Assess the perception of in-school adolescents in Ibadan Northwest Local Government Area of Oyo State towards Hepatitis B Virus Infection.
3. Identify the practices towards Hepatitis B Virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State.

1.6 Research Hypotheses

The following Null hypotheses were tested:

- i. There is no significant association between socio-demographic characteristics of respondents and their knowledge of Hepatitis B virus infection.
- ii. There is no significant association between socio-demographic characteristics of respondents and their perception of Hepatitis B Virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State.
- iii. There is no significant association between socio-demographic characteristics of respondents and practice towards Hepatitis B Virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State.
- iv. There is no significant association between knowledge and practices towards hepatitis B virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State.

1.7 Variables

Independent Variable

1. Socio-demographic characteristics

Dependent Variables

1. Knowledge of Hepatitis B virus
2. Perception of Hepatitis B virus
3. Practices towards Hepatitis B virus

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CHAPTER TWO

LITERATURE REVIEW

2.1 Epidemiology and Burden of Hepatitis B Virus

Hepatitis B is a highly infectious disease that inflames the liver and eventually leads to complications such as liver damage, liver cancer and cirrhosis. The disease has both acute and chronic phases, with the acute phase being a new infection. After six months of persistence, the acute phase often results in chronic infection, which lasts a lifetime (WHO, 2016). Hepatitis B virus (HBV) was discovered in 1965, and the vaccine against the disease was discovered in 1965, by Dr. Baruch Blumberg and his colleagues (Zanetti, Voeten, De Zwart, and Richardus, 2005). The disease is an important public health problem with 240 million people chronically infected (defined as hepatitis B surface antigen-positive for at least six months) globally and more than 686,000 people dying every year due to complications, the early discovery of the vaccine notwithstanding (Aniaku, Amedonu, and Fusheini, 2019). Sub-Saharan Africa and East Asia have the highest prevalence with 5–10% of the adult population chronically infected (WHO, 2016). It is more infectious than HIV/AIDS contributing to its persistent prevalence in the country (Block, Alter, London, and Bray, 2016).

Hepatitis B is a major public health problem around the world, eating up the major portion of health resources. The increasing prevalence is a constant threat to our community as it is an important cause of liver cirrhosis and hepatocellular carcinoma, resulting in significant morbidity and mortality (Ghahramani, Mohammad, Beigi, and Mohammed, Salehi, 2006; Razi, Rehman, Nas, Gafoor, and Khan, 2010; Taylor et al., 2005). Hepatitis B infection is prevalent worldwide, with a probable 2 billion people affected, of whom more than 350 million are chronic carriers. About 700,000 die each year from HBV linked liver ailment or hepatocellular carcinoma (Bibl, Alaei, and Negro, 2010). The prevalence of HBV fluctuates greatly in different areas of the world. Approximately three-quarters of chronic carriers of hepatitis B live in Asia (Haider and Haider, 2008). The occurrence of HBV infection is 5-10% in Southeast Asia and 1% in North Europe and America. The incidence in India is 3-4%. Hepatitis B and C are both endemic in our country and the predictable frequency of hepatitis B antigen among healthy adults in a study

done locally was 2.4% (ranging from 1.4-11.0%). The frequency is even greater in high-risk groups (Razi et al., 2010).

Hepatitis B infection is a serious blood-borne disease, caused by the HBV which attacks the liver (Smelzer and Bare, 2003). Hepatitis B Virus is a DNA virus that is transmitted by percutaneous injuries or per mucosal exposure to infectious blood products or other body fluids (Lewis, Heitkemper, and Dirksen, 2000). The World Health Organization, (2008) stated that HBV is 50 to 100 times more infectious than HIV. It can survive outside the body for at least 7 days. All HBV infections do not have symptoms, which means that people who are contagious are at risk without knowing it (Weinbaum, Mast, and Ward, 2009; WHO, 2012b). However, many people may experience symptoms such as jaundice, fatigue, loss of appetite, nausea, and abdominal pain. In nearly all adults, 90% of the infection heals and they become healthy. But there is a risk of 90% and 30%–50% in infants and young children, respectively, which can lead to chronic infection (WHO, 2012a). This provides an increased risk that they will suffer from liver cirrhosis or liver cancer in later life, if not medically managed (Chao, Chang, and So, 2010; WHO, 2012).

Hepatitis B Virus prevalence is highest in sub-Saharan Africa and East Asia, where 5-20% of the adult population is infected (WHO, 2015). In Africa, up to 15 to 60% of the general population are positive for at least one of the serological markers of HBV infection. Hepatitis B Virus causes a spectrum of ranging from inactive chronic carrier status to progressive chronic hepatitis that leads to end-stage cirrhosis and primary liver cancer (Tao et al., 2014). Chronic HBV infection is defined by the prevalence of HBsAg carriage and it is a risk factor for disease progression in infected individuals (WHO, 2015). Countries with HBsAg prevalence above 8% are said to be HBV endemic (WHO, 2011). Sub-Saharan Africa has the highest endemicity for chronic HBV infection with varying prevalence of the infection occurring within diverse groups exposed through occupational hazard or behavior (WHO, 2011; 2015). In countries in this region, weak public health infrastructures and poor surveillance systems are critical factors hampering the control of HBV infection (Forbi et al., 2015; Olusola, Gometi, Ogunsemowo, Olaleye, and Odaibo, 2017). Hepatitis B Virus infection is endemic in Nigeria and is an important cause of morbidity and mortality despite the availability of vaccines in the country (Musa, Samailaa, Femi, Borodo, and Bussell, 2015).

The perinatal transmission has been said to be the major route of HBV transmission in areas of high endemicity, although sparse data support this claim in sub-Saharan Africa (Keane, Funk, and Shimakawa, 2016). Another known route of HBV transmission is the sexual route (Memon et al., 2012; Noori, Gol-Mohamadi, Sarbazi, Safae, and Farsar, 2013). Hepatitis B is also spread by needlestick injury, tattooing, piercing and exposure to infected blood and body fluids, such as saliva and, menstrual, vaginal, and seminal fluids (WHO, 2019). The human immunodeficiency virus (HIV) and hepatitis B virus are transmitted in similar ways, and it is not uncommon for an individual to have both infections. People with HIV who acquire hepatitis B are more likely to become chronically infected with hepatitis B than people who do not have HIV. The reason for this is thought to be that HIV suppresses the immune system and impairs the ability of the body to eliminate the hepatitis B virus. Some nucleoside/nucleotide analogues (a class of antiretroviral drugs) are used to treat both HIV and hepatitis B, although dosages may vary in the two different infections. Stopping one of these agents when the HIV regimen is adjusted may cause hepatitis to flare (Nettelman and Mortada, 2016).

Nigeria is the most populous African country and approximately 23% of her population are adolescents, making her the country with the largest number of adolescents in Africa (UNICEF, 2011). However, immunization schedule in Nigeria is presently restricted to early childhood but adolescent immunization can no longer be ignored because delaying its implementation will result in loss of the achievements of childhood immunization. The Nigerian adolescents will have to battle with enormous morbidities and mortalities in the future because of the break-in their protection and it will require a lot of economic resources to alleviate some of the results of this neglect in the future. Presently, there are many Nigerian adolescents who were never immunized in infancy or did not complete the routine childhood immunization schedule due to the drop in childhood immunization rate in the nineties (Oladokun, Adedokun, and Lawoyin 2010). There have however been some gradual improvements in immunization uptake in the last few years in Nigeria (Ushie, Fayehun, and Ugal 2014), though there are still some operational challenges about vaccine availability. The relevant vaccines in adolescence include Hepatitis B, Diphtheria, Pertussis, Tetanus (all the three combined as DPT), Human Papilloma Virus (HPV), Varicella, Measles, Mumps and Rubella (MMR) vaccines. Some of these vaccines like DPT have been taken earlier in infancy but booster doses are required because the initial protection they confer begins to wane by adolescence. Nigeria is a hyper-endemic region for Hepatitis B

infection with an estimated 18 million people living with the infection (Akinyinka, Falade, Ogunbiyi and Johnson, 2001). The devastating result of hepatitis B infection includes mortality from fulminate acute infection, becoming a chronic carrier who can infect others and also develop cirrhosis or hepatocellular carcinoma. The younger a child is at the time of infection with hepatitis B, the higher the chance of having HBeAg which indicates active carrier state (Akinyinka et al, 2001). The prevalence of HBeAg carrier rate reported from studies in Nigeria is between 3.3-19.2% with a higher rate in the age group 0-20 years (Akinyinka et al, 2001; Ndububa, Ojo, Adeodu, Adetiloye, Olasode and Famurewa 2001).

Universal hepatitis B immunisation at birth and in infancy is the key strategy for global elimination of HBV infection and has been highly effective in reducing new vertical infections. Complete vaccination against hepatitis B is achieved by administration of a three-dose regimen, with the second and third doses being given one and six months after the initial dose. A vaccine against hepatitis B has been available since 1982 (WHO, 2001, 2009). Hepatitis B vaccine is 95.0% effective in preventing infection and its chronic consequences; it was the first vaccine against a major human cancer (WHO, 2001). The recombinant vaccines by Pablo DT Valenzuela in 1986 replace the earlier vaccine (WHO, 2009). In Nigeria, the vaccine was introduced into the National Program on Immunization (NPI) in 2004.

2.2 Knowledge of Hepatitis B Virus Infection

Being aware and having knowledge of HBV can go a long way to prepare individuals to understand practices that can protect them from contracting HBV infection. In a study conducted by Nagpal and Hegde, (2015) it was reported that 97.7% of students had heard of hepatitis B disease and 88.7% of students knew that hepatitis B is transmitted through the virus. The majority of students (73.7%) knew that hepatitis B can be transmitted through tattoo and acupuncture needles, 77.2% of the students knew that hepatitis manifests as jaundice. A total of 11.1% and 14.6% of students had a history of hepatitis B in their past and in their families, respectively. Despite this fact, 91.4% of students recommended vaccination against hepatitis B among their family member and 6.8% did not recommend the same. Only 64% of students were vaccinated against hepatitis B. A total of 63.8% of students knew about the appropriate intervals of hepatitis B vaccination, 75.5% of students knew about the potential risk of HBV transmission. To the question regarding the post-exposure treatment of HBV infection, only 28.4% of students

knew what possible steps to be taken if they get accidentally exposed to HBV, 58.8% of students knew about the precautionary measures that should be taken in routine practice to prevent transmission of HBV infection.

A study carried out in a conflict region in Northeastern Nigeria to determine hepatitis B vaccine knowledge and self-reported vaccination status among healthcare workers, out of the 182 respondents, 74% were males, majority (96.07%) of respondents correctly identified that hepatitis B disease is caused by a virus, 94.35% of respondents said HBV causes liver disease, 94.94% of respondents said HBV is transmitted through blood, needle prick, sexual activity and 94.4% presents clinically with yellowness of the eyes, weakness of the body, and dark urine. Most of the respondents (89.5%) correctly identified that there is an effective vaccine for the virus and 46.70% of the respondents were vaccinated against hepatitis B and 82.97% had good knowledge of HBV (Farouq, Garbia, Bashir, Abdulaziz, Sepu and Abdulrazaq 2020).

In a study conducted by Okoh and Okoh, (2019), to evaluate Hepatitis B Virus Infection and Prevention among Graduating Dental Nursing Students in Southern Nigeria, majority of them were females (80.6%), almost all the dental nursing students (94.4%) were aware of HBV. When asked if they have done the screening for HBV, only about 12.5% have been screened, 76.4% of the students have not been vaccinated against HBV. Jaundice was recognized as one of the common symptoms by 90.3% of the students. When asked about the mode of transmission of HBV, 90.3% of them were aware that HBV can be transmitted through contaminated blood and blood products; 88.9% knew it could be transmitted through unsterilized syringes, needle, and surgical instruments; 77.8% and 73.6% were aware of transmission from mother to child and through unsafe sex respectively. About 94% knew about vaccine availability. The mean knowledge score was 12.4 ± 2.1 . Fifty-four (75.0%) of the dental nursing students had adequate knowledge of HB, while 25.0% had poor knowledge. Comparison of knowledge of HBV translating to the practice of prevention against the infection using One-Way Anova, the result was found to be statistically not significant.

In another study carried out in Abakaliki, South Eastern Nigeria to determine the risk factors for hepatitis B surface antigenaemia among secondary school students, in this study, the ages of the students ranged from 9 to 23 years, with a mean age of 15.6 ± 2.3 years, one hundred and twenty-three respondents (46.24%) were males while 53.76% were females, 78.95% of the

respondents had never received blood transfusion, 7.14% had received blood transfusion, one hundred and forty-four (54.14%) of the respondents share objects (like hair clippers, nail cutters, razor blades, etc.) with others while 45.86% of the respondents did not share objects, 14.28% of the respondents reported that they were sexually active, of the 38 sexually active respondents, 60.53% had unprotected sex; 39.47% of the respondents used some form of protection. History of blood transfusion, sharing of sharp objects like hair clippers, razor blades and nail cutters did not contribute significantly to HBV transmission (Omeje, Ibekwe, Ojukwu, Una and Ibe, 2017).

A study conducted by Thaver and Kamal, (2010), to investigate Impact of information sources on the knowledge of adolescents about hepatitis B, the mean age was 16.2 ± 1.3 years; 57% males and 43% females. The majority (98.0%) of the adolescents had heard about Hepatitis B but only half had comprehensive knowledge about it. Overall 98% students claimed to know something about Hepatitis B. But only 52% of all had comprehensive and correct knowledge about symptoms, causes and measures of prevention of Hepatitis B, their major sources of knowledge were parents (57%) and television (56%) followed by newspapers and books (31%), doctors (30%) teachers and peers (29%). All the students who were not vaccinated or were unsure about their status were willing to get vaccinated and seek further treatment if required.

A study conducted by Ghouri, Aslam, Iqbal, and Shah, (2015) on knowledge and awareness of Hepatitis B among students of public university reported the majority of the students (95%) had heard about hepatitis but only two-thirds agreed that hepatitis B is a contagious disease and it affects the liver. A large number of them (74%) were aware that a blood test is the only way to know for sure if someone has hepatitis. Regarding the mode of transmission, the majority of the respondents (78.0%) knew that blood transfusion and reuse of syringes were important sources of transmitting these infections. The majority (62.0%) didn't consider sexual contact as a source of transmission. Sharing room with a hepatitis B infected person was acceptable to only 30.0% of respondents and a reasonable number of students (32.0%) thought hepatitis B could spread through cough and sneeze of a patient. Visit a barber (66.0%) and dental or surgical procedures (48.0%) were stated to be the major source of infection. Half of the students knew that HBV infection is a preventable disease and a vaccine is available against it. Wearing gloves (32.0%) and safe disposal of hospital waste (68.0%) were recognized by the students to be the methods to protect against these infections.

Aniaku, Amedonu and Fusheini (2019) conducted a study on the Assessment of Knowledge, Attitude and Vaccination Status of Hepatitis B among Nursing Students in Ho, Ghana and it was reported that 97.8% of participants had heard about hepatitis B. The majority of participants (78.2%) knew that the disease is caused by a virus. Participants also reported that hepatitis B can be transmitted through a number of ways, 65.6% said it can be transmitted through sex and 79.6% through blood transfusion. Also, 69.8% were aware the disease can be gotten through needle stick injuries, and 57.8% said through childbirth. Furthermore, 76.3% knew the disease is more infectious than HIV/AIDS, and 51.4% said it was curable. About 70.4% reported the hepatitis B virus causes liver inflammation, and as low as 46.9% reported jaundice to be a symptom of the disease. The overall mean knowledge score of participants is 29.6 ± 6.98 . Also, Hassan, Awosan, Nasir, Tunau, Burodo, Yakubu and Oche (2016) conducted a study to assess the knowledge, risk perception and hepatitis B vaccination status of health workers in Usmanu Danfodiyo University Teaching Hospital, Sokoto, majority of the respondents (78.2%) demonstrated good knowledge of HBV infection, 82.3% considered the virus to be deadly than HIV, 93.5% respondents perceived themselves to be more at risk of HBV infection and 40.3% have ever been vaccinated against HBV infection.

Alhowaish, Alhowaish, Alanazi, Alshammari, Alshammari, Alshamari, Alshammari, Almutairi and Algarni (2017) conducted a study on the knowledge, attitudes and practices toward prevention of hepatitis B virus infection among medical students at Northern Border University, Arar, Kingdom of Saudi Arabi reported 81% of them knew that carriers could transmit infection, 89.5% of them knew that it could not be spread by casual contact, 80% by contact with open wound, 96.5% by contaminated blood and body fluids, 92.5% by unsterilized syringe, needle and surgical instruments and 79.5% by unsafe sex. In total, 86.5% of students knew that a vaccine could prevent HBV infection, 55% knew that it could be cured, 75.5% of students knew that HBV caused liver cancer. In all, there was a high overall knowledge regarding HBV, its mode of transmission and its prevention. According to Iddrisu, (2017) in assessing the knowledge, attitude and perception of hepatitis B viral infection among young adults in Sagnarigu District of the Northern Region, reported that the knowledge of HBV infection among the respondents revealed high knowledge among them, as majority (67.5%) scored within the range of 8-12, 89.0% of the respondents said they have ever heard of HBV infection before, 34.0% of respondents mentioned mass media as the sources of their knowledge while 32.0%, 19.0% and

15.0% of the respondents identified the School, health facilities and their friends respectively. Thirty-eight percent (38.0%) of the respondents did not know whether HBV infection can be inherited from parents or not while 30.0% were of the view that HBV infection can be inherited, 39.0% of the respondents said people cannot get HBV infection from the air while 26.0% of the respondents said they do not know whether it can be gotten from air or not, 17.0% could not tell whether HBV can be transmitted through sexual relationship or not whilst 71.0% said people can get HBV infection through sexual intercourse, 45.0% of the respondents said people can get HBV infection during birth while 30% subjects not being able to tell. Findings also showed that most (70.5%) of the respondents knew the signs of HBV to include; fever, weakness, jaundice (yellowish coloration of the eyes) and right side abdominal pains with 26.0% stating they do not know the signs and symptoms of HBV.

The study revealed that the majority (75.0%) of the subjects said people can get HBV by sharing a toothbrush with an infected person, while 14.0% said they do not know whether people can get HBV infection by sharing a toothbrush with an infected person or not. The majority 75.0% said “YES” to the statement that HBV causes liver cancer and 14.0% said they do not know whether HBV infection causes liver cancer or not. It was also observed in the study that, 68.0% subjects said a person infected with HBV infection who looks healthy can still spread the infection to others, while 20.0% said they do not know whether if someone is infected with hepatitis B infection and looks or feel healthy, that person can still spread the hepatitis B Virus or not. It was revealed that 58.0% of respondents said the hepatitis B virus is more deadly than HIV and 24.0% of respondents said they do not know (Iddrisu, 2017).

Awareness of the knowledge and perception of adolescents will go a long way in the prevention of hepatitis B virus infection. According to a study conducted by Badr, Mounir, and Mahdy, (1999) on the measurement of Knowledge, Attitude and Practice concerning hepatitis B among secondary school students in Alexandria, the students had an average level of knowledge (55.2%) about hepatitis B and 50.4% were not vaccinated against the disease. Also study conducted in Cote d'Ivoire by Lohouès-Kouacou et al., (2013) on hepatitis B knowledge among secondary school students reported that 76.6% had heard of HBV, mass media (62%) was there main source of information, 29.0%, 40.0%, and 41.0% of the students, respectively, were aware

that acupuncture, body piercing, and tattooing are high-risk practices and only 35.7% of the students knew that there was an effective vaccine.

According to a study conducted by Boakye (2017) on assessing the knowledge, attitude and perception of hepatitis B virus infection among senior high students in Dunkwa-on-offin, Ghana reported that majority of the students answered 7 out of 11 questions on knowledge correctly; this indicates a high level of knowledge among the students. Findings from the study revealed that the majority of the students (92%) had heard of HBV infection. The major source of information about HBV infection was Media (77%). However, only 35.5% knew HBV could cause liver cancer. Only 20% knew HBV could be transmitted from sexual intercourse. Less than half of the respondents (41%) knew correctly that HBV could be transmitted during childbirth. A majority of the respondents (81.1%) were also right that people could get HBV by eating food that has been pre-chewed by an infected person, and 70% knew that HBV could be transmitted by sharing a toothbrush with an infected person. Most of them (75%) knew infected person can have signs or symptoms like jaundice, body weakness, right-sided abdominal pains, fever and loss of appetite. The majority of respondents (84%) knew that even asymptomatic HBV infected persons could transmit the disease. A study conducted by Faiza, (2017) on the assessment of knowledge and attitude of hepatitis B among secondary school and college students in Bangladesh found that 89.5% of students have heard about Hepatitis B but only 12.4% of students mentioned the liver as the affected organ. Educational institute was identified as the major (58.4%) source of knowledge. During assessing the knowledge of the mode of transmission, 38.4% mentioned blood transfusion as a route of transmission of Hepatitis B, 32.1% mentioned needles and sharps while only 28.4% said that the disease can be transmitted through unprotected sex. The level of knowledge and awareness regarding the mode of transmission is low.

According to a study conducted by Abo, Al,Salama, Abdo and Elseidy (2015) on knowledge and attitudes regarding hepatitis viruses among secondary school students in Menoufia Governorate, 78.0% and 75.0% of the students had fair knowledge and attitude, respectively, regarding viral hepatitis, the students had low score (32.0%) for knowledge about HBV transmission modes (32.0%) indicated poor knowledge, 42.0% of them knew about the availability of the vaccine, the same percentage of students knew that HBV may cause liver cancer, 39.0% of the students knew

that hepatitis B was transmitted by tattooing and ear and nose piercing. nearly half of the students (50%) knew that hepatitis B is caused by a virus, 55.0% of the students were knowledgeable about reused blades of barbers and HBV transmission. In a study conducted by Batholomew, (2011) on Knowledge, Attitude and Practice concerning hepatitis B among adolescents in the upper west region of Ghana, 59.0% participants knew about the availability of the vaccine for HBV, 53.9% of the adolescents in their study knew that hepatitis B was transmitted by tattooing and ear and nose piercing, 62.0% of the adolescents were aware of HBV is a viral disease, 50.0% of the adolescents in the study were knowledgeable about reused blades of barbers and HBV transmission.

2.3 Perception of Hepatitis B Virus Infection

Understanding the perception of students regarding hepatitis B infection is crucial for the development of appropriate information and services for this population group and a good perception of hepatitis B virus infection will help an individual not to be susceptible to the infection. According to Davies, Fielding, Noble, and Okpo, (2019) on the perception of hepatitis B among university students in Aberdeen, North- East Scotland, conducted interviews and the study revealed that the students acknowledged HBV as a serious disease but they have a very low perceived risk of contracting HBV. Alhowaish et al., (2017) reported that 23.0% of students said they had no concern of being infected with HBV (poor perception) and 86.5% agreed that HBV vaccine was safe and effective (good perception).

A study carried out by Boakye (2015), which assessed the knowledge, attitude and perception of hepatitis B virus infection among senior high students in Dunkwa-on-offin, Ghana, showed that the majority of the students perceived that there is an efficient treatment for HBV infection (68.0%). Some respondents also perceived that exercising regularly and eating healthy food could prevent Hepatitis B Virus infection (50.0%). Few perceived that infected persons should be isolated away from the people to prevent spread (29.5%) (Boarkye, 2015) and Faiza (2017) recorded a misconception regarding the mode of transmission which includes mosquito bite (15.8%) and sharing a toilet with an infected person (15.5%). Iddrisu (2017) reported that the perception of people about HBV infection has always received mixed feelings. From their results, it was observed that 49.5% said there is an efficient treatment for hepatitis B virus infection whilst 26.5% could not tell whether there is an efficient treatment for hepatitis B virus

infection or not. Findings also revealed that 54.8% said persons infected with the HBV should be isolated from other people to prevent them from infecting others, whilst 12.5% could not tell whether persons infected with HBV infection should be isolated from other people or not. It was also observed in the study that, majority of the respondents 46.0% said regular exercise and eating healthy food can prevent hepatitis B virus infection whilst 24.0% could not tell whether regular exercise and eating healthy food can prevent hepatitis B virus infection or not. Also, 20.0% said they were not at risk of getting HBV infection whilst 2.8% said they do not believe in the HBV infection vaccine. In a study conducted among health workers' knowledge, attitude and practice towards Hepatitis B infection in Northern Nigeria by Bello, Cook, and Musa, (2016) stated that more than 84.0% of the nurses and attendants felt they were at risk of HB infection by virtue of their work. The majority of the Health care workers (HCW) felt they need to be protected from HB infection and most knew their HB status. About 85.0% of the HCWs considered it necessary to receive the HB vaccine. The majority of the respondents had received the HB vaccine but fewer than 30.0% had completed the vaccination schedule.

2.4 Practices Relating to Hepatitis B Virus Infection

According to Alhowaish et al. (2017), only 56.5% of students had screened for HBV infection and 69.5% have received an HBV vaccine. Also, Boarkye (2017) showed that most of the respondents (64.0%) believed that healthy people need vaccination against HBV, and 70.5% of them thought that people of their own age need vaccination. More than half of the respondents (53.0%) indicated that they were willing to be tested for Hepatitis B Virus infection. However, only 4.0% had ever been vaccinated against the disease. The majority of them (88.0%) had never received a Hepatitis B Virus infection before. The level of vaccination of the students was 52.4% and ways of preventing Hepatitis B infection were knowledge and education (53.42%) and blood test before marriage (42.6%) (Faiza, 2017). Abo, Al, Salama, Abdo, and Elseidy (2015) reported that only 31% had fair practices for self-protection and vaccination. Iddrisu (2017) reported that most of the respondents (78.0%) believed that healthy people need vaccination against HBV. The majority of those interviewed (234) (58.5%) indicated that they have not taken the HBV vaccine before while 12 (3.0%) said they do not know whether they have taken the HBV infection vaccine before. It was also revealed from the study that, 350 (87.5%) said they were

willing to take the vaccine, whilst 10 (2.5%) respondents said they do not know whether they will go for the HBV vaccine or not (Abo et al., 2015).

According to Shalaby et al. (2010), the practice of barbers during shaving showed that changing the blade for each client was the practice of 291 barbers (94.5%); 93.2% of urban and 95.9% of rural ones. Disinfection of used instruments was practised by 76.9% and washing hands by 63.0% of them. Wearing protective clothes, especially gloves, was practised by 52.8% of urban barbers and only 9.6% of rural ones also the shaving practices of the clients revealed that the practice of urban clients was better than that of rural ones regarding verification of the status of used instruments before shaving, bringing their own instruments and asking the barber to wash his hands before shaving. The practice of rural clients was better regarding refusing shaving with used instruments and asking the barber to disinfect used instruments.

According to the study of Bello, Cook, and Musa (2016) on health workers' practices towards hepatitis B infection, on average, 76.7% of the health care workers (HCWs) stated that they wore gloves when carrying out a procedure on patients. Only 15.2% of the respondents wear glasses when carrying out procedures on patients. More than 97.1% of the participants claimed to be disposing of sharps properly after a procedure. There are a number of practices that may favour the occurrences of HBV infection; these will be reviewed with special reference to adolescents. It is worth mentioning that adolescence is considered a phase in which individuals are relatively healthy. During this period, however, there is a high vulnerability to severe health-related challenges such as measles, acquired immunodeficiency syndrome (AIDS) and HBV infection (Araujo, Sa, Silva, and Coasta, 2010).

Adolescents who do not have a fixed partner are more likely to develop a Sexually Transmitted Infection because they are inclined to relationships with multiple partners, increasing the chances of exposure (Guimaraes et al., 2015). Concerning the risk behavior for Hepatitis B and unhealthy habits, it was noticed that a considerable number of students use drugs, mainly alcohol. It should be mentioned that the consumption of alcoholic beverages is one of the main risk factors to harm the health in the world. In addition to altering brain development, especially in adolescents, it influences cognitive, emotional, and social development (PENSE, 2012).

The use of these substances has been characterized as an important risk factor for Hepatitis B, especially when using is associated with the exercise of sexuality since when the use of these substances precede the sexual relationships can make the users more exposed to the ecstasy infection and decreased reasoning that drugs cause in the body. Thus, it increases the probability of adopting risk behaviors, such as multiplicity of sexual partners and feelings of invulnerability, hindering the correct use of preventive measures against STIs, in this case, the use of condoms (Araujo, Carvalho, and Monteiro, 2015).

A study conducted in Goiânia found a positive association between alcohol use and other drugs with the prevalence of sexual intercourse in the adolescent population. According to the authors, alcohol consumption is directly related to first sexual intercourse and to sexual risk behaviors at this stage, such as multiple partners and casual sexual intercourse. Also, the practice of sex without a condom was evidenced mainly in adolescents who used alcohol (Sasaki, Leles, Malta, Sardinha, and Freire, 2015).

2.5 Conceptual Framework and Its Application to the Study

PRECEDE Model

The PRECEDE framework developed by Dr. Lawrence Green and Marshall Kreuter (1970) was adopted to guide the design of the study. It offers a framework for identifying behavioural antecedent factors and appropriate intervention strategies. The PRECEDE is an acronym that stands for Predisposing, Reinforcing and Enabling Constructs in Educational Environmental Diagnosis and Evaluation. According to the PRECEDE framework, just as a medical diagnosis is needed to design a treatment plan, educational diagnosis (i.e. diagnosis of antecedent factors) is needed to guide the design of a health promotion intervention.

According to the model, the determinants of behaviour can be categorized into the following broad typologies: Predisposing factors, Reinforcing Factors and Enabling factors.

Predisposing Factors motivate or provide a reason for the behaviour. They refer to issues that are cognitive in nature. These factors include knowledge, perception, attitudes, cultural beliefs, norms, values, predispositions and readiness to change. The predisposing factors for this study

are those related to knowledge of hepatitis B virus (HBV) infection, perception of HBV infection.

Enabling Factors to enable persons to act on their predispositions which include available resources (time, money, skills, etc), programmes and services required to enable behaviour change. Enabling factors for this study would be related to access to vaccine, acceptability, and affordability.

Reinforcing Factors are factors that encourage the repetition or persistence of behaviours by providing continuing rewards or incentives. They come after the behaviour has been initiated. It refers to the influence of significant others such as friends, family, peers etc. Reinforcing factors include supportive policies, assistance and service, social support, praise, reassurance and symptom relief from parents, peers, teachers, media and other significant others. These factors can either influence behaviours positively or negatively. The reinforcing factors for this study are the use of peers, use of print and electronic media (fliers, handbill, board and internet), parents, family doctors and friends and supportive policy. Antecedent factors investigated in this study include knowledge, perception, and practices that constitute predisposing factors of the PRECEDE model.

The application of the PRECEDE framework in this study is shown in Fig.2.1

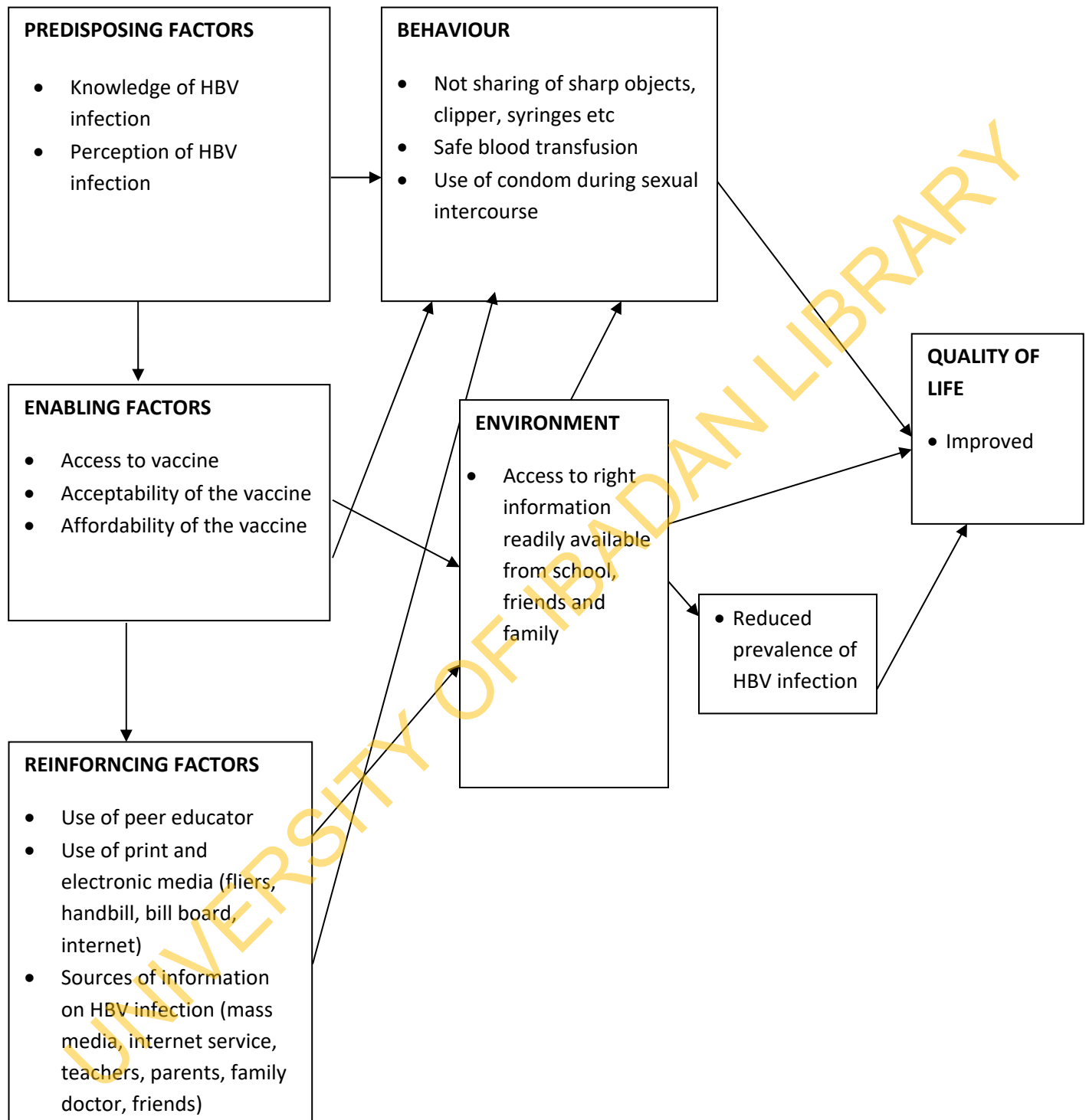


Figure 2.1: Application of the PRECEDE Model adapted to suit the study on HBV

CHAPTER THREE

METHODOLOGY

3.1 Study Design

This study is a descriptive cross-sectional study that was carried out with the use of a standardized, semi structured self-administrated questionnaire to survey knowledge, perception, and practices towards Hepatitis B virus infection among secondary school students in Ibadan Northwest Local Government Area (LGA), Oyo State, Nigeria.

3.2 Description of Study Site/Area

The area selected for this study is Ibadan Northwest LGA, Ibadan Northwest Local Government was created in 1991 by the then Military Head of State, General Ibrahim Babangida (rtd). The Local Government covers a large area of land with a population of about 154,029 according to National Population Census (2006). It is divided into eleven wards and has its administrative headquarter at Onireke. However, Oke'Badan North Local Council Development Area (LCDA) has been carved out of Ibadan North West leaving it with six wards.

Ibadan Northwest Local Government is bounded in the North by Ido Local Government, in the West by Ibadan South West Local Government, in the East by Ibadan North East and in the South by Ibadan South East Local Government. Its inhabitants include Yoruba, Hausa, Ibo and other ethnic groups who engage in trading, farming, artisanship and civil service. A predominantly urban area, Ibadan Northwest LGA has within her jurisdiction Onireke, Ayeye, Dugbe, Inalende, Ologuneru to mention just a few. The Local Government Area has markets like Ayeye, Dugbe, Agbeni, and Eleyele.

The social facilities in the Local Government include Cocoa house (Cocoa dome), Club 18, De Access hotel, Grand serene Hotel, Sagittarius consult and so on. The health facilities in the local government are available in Oniyanrin, Eleyele, Ogunpa, Origbegi, Ayeye and Orieleru communities. They render services such as treatment of common ailments and disease, provision of essential drugs, health education and counseling to the inhabitants, including the adolescents. Ibadan North-West LGA has thirteen (13) public schools and sixteen (16) registered private secondary schools.

3.3 Study Population

The study population consists of students aged 10–19 years in both public and private selected secondary schools in Ibadan Northwest Local Government Area.

3.4 Inclusion Criteria

The inclusion criteria are as follows;

1. Must be In-School Adolescents in Public and Private Schools in Ibadan Northwest Local Government Area
2. Must be willing to participate
3. Must be between the age of 10 and 19

3.5 Exclusive Criteria

The exclusion criteria are as follows

1. In-School Adolescents in Public and Private Schools not in Ibadan Northwest Local Government Area
2. Unwillingness to participate
3. More than the age criteria
4. Those age group that are indisposed during the time of data collection

3.6 Sample Size Determination

The sample size for this study will be estimated using the Leslie Kish (1965) formula for single proportion which is as follows:

$$N = \frac{Z^2 pq}{d^2}$$

N= Minimum sample size

Z= Standard normal deviation set at 1.96 normal interval

p= Proportion estimated to be obtained in the target population, 44.7% for seroprevalence of hepatitis B surface Antigen and Liver function Test among Adolescents in Abakaliki, South Eastern Nigeria (Ugwuja and Ugwu, 2009).

q= Proportions that does not have the characteristics being investigated

$$(q=1-p) \quad q= 1 - 0.447= 0.553$$

d= Degree of accuracy set at 0.05 (precision set at 5% significant)

$$\text{Therefore, the sample size } N= \frac{(1.96)^2 \times 0.447 \times 0.553}{0.05^2}$$

$$N= \frac{0.9496089456}{0.0025}$$

$$N= 379.84$$

A non-response rate of 10% of 379.84 = 37.984 was added.

Therefore, 38 were added to the calculated sample size to make the sample size 418 approximately in order to address issues of incomplete responses. However, a total of 480 respondents participated in this study to increase the number of sample size.

3.7 Sampling Procedure

The sample size for this study is 480 students which were drawn from JSS1, JSS2, JSS3, SS1, SS2 and SS3 classes in Ibadan Northwest Local Government Area. The selection of in-school adolescents consists of a five (5) staged sampling technique.

Stage 1: Identification of the number of public schools and private schools within the Ibadan Northwest Local Government Area.

Stage 2: Simple random sampling technique (balloting) was used to select representative schools from the public and private secondary schools in Ibadan Northwest Local Government Area.

Stage 3: A review was carried out in the selected schools to identify the total number of students in each school and respective classes (JSS1-SS3).

Stage 4: Proportionate sampling method was used to determine the percentage of students that was selected from each class across all class divisions and ranking to ensure equality of selected students (allocation based on the sample size and the number of students in the junior and senior secondary school class) was applied in the selection of number of study participants in each of the selected schools.

Stage 5: Respondents for the study were drawn from each class using a simple random sampling technique.

The proportionate allocation of the participants who participated in the study is shown in table 3.7.1

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Table 3.7.1: Total number of respondents for both public and private schools

S/N	School category/Name	Junior class	Senior class	Total
Private schools				
1	Seed of Life, Eleyele	15	25	40
2	Moret Comprehensive College, Adamasingba	10	30	40
3	Fruit of Love School	20	25	45
4	Foazan International School	10	25	35
5	St. Isabel College, Eleyele	20	20	40
Public schools				
6	Eleyele High School, Polo Ground	15	25	40
7	Oba AbassAlesinloye Grammar School, Eleyele	15	25	40
8	Jericho High School	15	25	40
9	Community High School Olopomewa	15	25	40
10	Army Day High School, Letmuck Barrack	15	25	40
11	Army Barrack Grammar School, Letmuck barrack	15	25	40
12	Anwar-Ul-Islam Grammar School	15	25	40
Overall total				480

3.8 Validity of the Instrument

The validity of the study instrument was ascertained through scrutiny by my project supervisor, some senior colleagues in the department and criticism by colleagues and review of relevant literature were used to develop the questionnaire. The pre-test was carried out at Ibadan North East Local Government Area, Oyo State; a similar urban LGA in the metropolis. Forty-eight respondents participated in the pre-test through a self-administered questionnaire to determine their knowledge, perception and practice relating to Hepatitis B virus infection. The collated result was subjected to Statistical Package for Social Science (SPSS) version 20.0 for analysis and a reliability coefficient of 0.98 was gotten as determined by the Cronbach's alpha. This was interpreted to be reliable since the correlation coefficient was greater than the average correlation coefficient of 0.5.

The result of the pre-tested instrument on the respondents was used to make final amendments on the instrument to ensure validation. Senior colleagues' input and criticisms from classmates too were used to fine-tune the study instrument to validate it. There was no need for translation into other languages from English since the respondents were secondary school students, which means they read and understand the questions from the study instrument.

3.9 Reliability of Instrument

The reliability coefficient of the instrument was determined from the pre-test result and was subjected to Cronbach's alpha measure and a reliability coefficient of 0.98 was gotten. This was interpreted to be reliable since the correlation coefficient was greater than the average correlation coefficient of 0.5.

3.10 Method of Data Collection

A semi-structured self-administered questionnaire was used to collect data. Three research assistants were recruited and trained on the purpose of the study, interpersonal communication, obtaining informed consent from the school authority and data collection procedures. These research assistants assisted in administering the questionnaire to the students during the data collection at pre-test and real data collection. The questionnaire was divided into four (4) sections:

Section A of the questionnaire contains questions on socio-demographic characteristics of respondents.

Section B assesses the level of knowledge of respondents on hepatitis B virus Infection.

Section C examines the perception of the respondents on hepatitis B virus infection.

Section D documents the practices of the respondents relating to hepatitis B virus infection.

A sample of 480 respondents from 7 selected public secondary schools and 5 selected private secondary schools in IBNWLGA who met the inclusion criteria were enrolled in the study after obtaining permission from the Principals and informed consent from the students.

3.11 Data Management and Analysis

Serial numbers were boldly written on the copies of the questionnaire to foster easy entry and recall. A coding guide was constructed along with the data collection tool in order to facilitate the data analysis. The questionnaires were reviewed to ensure consistency and completeness. Cleaning, recording and coding of data for analysis were also carried out. The collected and coded data were carefully entered into the statistical software and analysed using descriptive statistics such as mean, median and mode, frequencies and inferential statistics such as Chi-square and Fisher's exact. The results were obtained from the Statistical Package for Social Science (SPSS) version 20, were summarized and presented in tables with 5% level of significance.

The respondents' knowledge was scored with every correct answer scoring one point and incorrect or non-response scoring zero. The scores were summed and categorised into poor (0-6), fair (7-13) and good (14-20) using a total knowledge score of 20. Perception of respondents was scored with every correct response scoring one point, indifferent response and wrong response scoring zero. The score was summarized and categorised as negative (0-4) perception and positive (>4) perception using a total perception score of 8. The practice of respondents was scored with every correct response scoring one point and wrong response scoring zero. The scores were summarised and categorised as poor (0-8) practice and good (>8) practice using a total practice score of 17.

3.12 Ethical Consideration

Ethical approval was obtained from the Oyo State Research Ethics Review Committee (Our Ref. No. AD 13/479/1435). The respondents' consent was obtained after the provision of adequate, clear and complete information about the study entailed. Consent was obtained from adolescents above 18 years of age while assent was obtained from principals for students who are less than 18 years old. A written consent that does not require the names of the participants but only their signature was obtained from the respondents. They were also informed that participation is voluntary and that data collected was mainly used for research purposes. Anonymity and confidentiality of responses were also assured.

3.13 Limitations of the Study

Despite the contributions of this study to knowledge, this study is not without its limits. Some public and private schools that were selected could not participate in the study due to their principals not given assent for the students to participate, some principals not given permission to use their school and some principals asked some questions based on sexual experience should be removed for the students to be able to fill the questionnaire. This limitation was overcome by selecting another school that the principals gave permission that the students in the school to participate.

This study was carried out only among in-school adolescents, hence there is a need to exercise caution when generalizing this study to all adolescents. Also, this research was only based on adolescent's reports on their knowledge, perception and practice relating to hepatitis B virus infections, though efforts were geared towards eliciting accurate information. Finally, the study was only carried out in secondary schools in a particular Local Government Area, a wider community study and a larger sample size will be a better representative of the population.

CHAPTER FOUR

RESULTS

4.1 Socio-Demographic Characteristics of Respondents

The total number of respondents that took part in the survey was 480 in-school adolescents of which majority (60.2%) of the respondents fall within the age bracket 10-14 years of age. More than half (56.3%) of the respondents were female, most (62.7%) of the respondents class were in Senior Secondary School. More than half (58.3%) of the respondents are from public schools. The majority (72.5%) of the respondents are of Yoruba ethnicity and the majority (66.3%) of the respondents are Christians (Table 4.1a).

Table 4.1b shows the Parents Highest level of Education. Majority (69.8%) of the respondents father had tertiary education. For the respondents that specify fathers' type of tertiary education; 39.4% had B.Sc. Majority (66.5%) of the respondents mothers had tertiary education For the respondents that specify mothers' type of tertiary education; 32.3% had B.Sc.

Table 4.1c shows respondents parent's occupation, for the respondents father's occupation 29.2% were civil servants and more than half (51.3%) of the respondents mother's occupation were traders.

Table 4.1a: Socio-Demographic Characteristics of Respondents (N=480)

Variables	Frequency	Percent (%)
Age group		
10-14	289	60.2
15-19	191	39.8
Sex		
Female	270	56.3
Male	210	43.8
Class		
J.S.S 1	60	12.5
J.S.S 2	60	12.5
J.S.S 3	60	12.5
S.S.S 1	60	12.5
S.S.S 2	120	25
S.S.S 3	120	25
School Type		
Private	200	41.7
Public	280	58.3
Ethnic Group		
Yoruba	348	72.5
Hausa	34	7.1
Igbo	73	15.2
Others	25	5.2
Religion		
Christianity	318	66.3
Islam	160	33.3
Traditional	2	0.4

Table 4.1b: Respondents Parents Highest Level of Education

Parents Highest Level of Education	Frequency	Percent (%)
Father's Highest Level of Education		
No Formal Education	7	1.5
Primary	42	8.8
Secondary	84	17.5
Tertiary	335	69.8
I Don't Know	12	2.5
Type of tertiary		
NCE	36	10.7
OND	35	10.4
HND	97	29.0
B.Sc.	132	39.4
Master	15	4.5
PhD	10	3.0
I Don't Know	10	3.0
Mother's Highest Level of Education		
No Formal Education	6	1.3
Primary	34	7.1
Secondary	109	22.7
Tertiary	319	66.5
I Don't Know	12	2.5
Type of tertiary		
NCE	51	16.0
OND	56	17.6
HND	77	24.1
B.Sc.	103	32.3
Masters	12	3.8
ICAN	1	0.3
PhD	4	1.3
School of Nursing	1	0.3
I Don't know	14	4.4

Table 4.1c: Respondents' Parents Occupation

Parents Occupation	Frequency	Percent (%)
Father's Occupation		
Trader	115	24.0
Civil Servant	140	29.2
Works in Private Organization	115	24.0
Teacher	23	4.8
Artisan	8	1.7
Unemployed	7	1.5
Retired	10	2.1
Others	62	12.9
Mother's Occupation		
Trader	246	51.3
Civil Servant	66	13.8
Work in Private Organization	57	11.9
Teacher	47	9.8
Artisan	9	1.9
Unemployed	12	2.5
Retired	9	1.9
Others	34	7.1

4.2 Awareness and knowledge of Respondents on Hepatitis B Virus infection

Out of 480 respondents, 122 of the respondents (25.4%) have heard of HBV but 358 of the respondents (74.6%) have not heard of HBV. One hundred and twenty two (25.4%) of respondents who have heard of HBV had through various channels in which School (37.7%) was there major source of information and sticker inside BRT (0.8%) is the least (Table 4.2a).

A bit, more than one-quarter (122: 25.4%) respondents who have heard of the Hepatitis B virus, the majority of them correctly responded to many of the knowledge questions. Most (82.8%) of the respondents correctly responded that Hepatitis B is the swelling of the liver. Most (63.9%) of the respondents correctly responded that Hepatitis B can spread from person to person, 71.3% correctly responded that a vaccine for Hepatitis B exists. Eighty-three respondents (66.9%) correctly responded that Hepatitis B can make the eye go yellowish. Also, 71.3% of respondents correctly responded that a blood test is the only way to know for sure if someone has hepatitis B, majority of the respondents (78.7%) correctly responded that hepatitis B cannot be transmitted through handshakes, more than half of the respondents (50.8%) correctly responded that hepatitis B cannot be transmitted by contaminated needles, less than half of the respondents (47.5%) correctly responded that someone with hepatitis B virus who looks well or is not down with the disease can transmit the virus to others. The majority of the respondents (82.0%) correctly mentioned HBV can be transmitted from mother to fetus (Table 4.2b).

More than half of the respondents (59.8%) correctly responded that hepatitis B is more serious compared to HIV, 81.1% correctly responded that hepatitis B can cause serious liver disease, eighty one respondents (66.4%) correctly responded that hepatitis B can cause liver cancer while 73.0% of the respondents correctly responded that hepatitis B can lead to death. The majority of the respondents (94.3%) correctly responded that syringes should be sterilized before use, 70.5% of the respondents correctly responded that wearing gloves can protect against hepatitis B virus. Ninety-nine respondents (81.1%) correctly responded that hepatitis B is preventable by a vaccine. More than half of the respondents (51.6%) correctly responded that hepatitis B vaccines give permanent protection, 72.1% correctly responded that hepatitis B is not treatable. More than half of the respondents (56.6%) correctly responded that someone can get hepatitis B virus by eating food that has been pre-chewed by an infected person and majority of the respondents

(85.2%) correctly responded that hepatitis B vaccine is given to children as part of their immunization routine (Table 4.2b).

The knowledge of hepatitis B virus infection was assessed using a 20 point scale and was categorized as poor (0-6), fair (7-13) and good (14-20) knowledge. The study revealed that 25.4% of the respondents who have heard of the Hepatitis B virus, 65.6% had good knowledge, 31.1% had fair knowledge and 3.3% had poor knowledge (Table 4.2c).

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Table 4.2a: Respondents' Sources of Information

Sources of information	Frequency	Percent (%)
School	46	37.7
Parent	31	25.4
Television	30	24.6
Teacher	29	23.8
Church	26	21.3
Books	23	18.9
Social Media	19	15.6
Internet	16	13.1
Family Member	15	12.3
Radio	14	11.5
Friends	12	9.8
Mosque	5	4.1
Hospital	2	1.6
Sticker Inside BRT	1	0.8

**Multiple responses*

Table 4.2b: Knowledge of Respondents on HBV

N=122

Knowledge of Respondents on HBV	True (%)	False (%)
Hepatitis B is the swelling of the liver	101(82.8)*	21 (17.2)
Hepatitis B can spread from person to person	78 (63.9)*	44 (36.1)
A Vaccine for Hepatitis B does not exist	35 (28.7)	87 (71.3)*
Hepatitis B can make the eye go yellowish	83 (66.9)*	39 (32.0)
A blood test is the only way to know for sure if someone has hepatitis B	87 (71.3)*	35 (28.7)
Hepatitis B can be transmitted through handshakes	26 (21.3)	96 (78.7)*
Hepatitis B cannot be transmitted by contaminated needles	60 (49.2)	62 (50.8)*
Someone with hepatitis B virus who looks well or is not down with the disease can transmit the virus to others	58 (47.5)*	64 (52.5)
Hepatitis B virus can be transmitted from mother to foetus	100 (82.0)*	22 (18.0)
Hepatitis B is more serious compared to HIV	73 (59.8)*	49 (40.2)
Hepatitis B can cause serious liver disease	99 (81.1)*	23 (18.9)
Hepatitis B cannot cause liver cancer	41 (33.6)	81 (66.4)*
Hepatitis B cannot lead to death	33 (27.0)	89 (73.0)*
Syringes should be sterilized before use	115 (94.3)*	7 (5.7)
Wearing of gloves can protect against hepatitis B	86 (70.5)*	36 (29.5)
Hepatitis B is preventable by a vaccine	99 (81.1)*	23 (18.9)
Hepatitis B vaccine gives permanent protection	63 (51.6)*	59 (48.4)
Hepatitis B is not treatable	34 (27.9)	88 (72.1)*
Someone can get hepatitis B virus by eating food that has been pre-chewed by an infected person	69 (56.6)*	53 (43.4)
Hepatitis B vaccine is given to children as part of their immunization routine	104 (85.2)*	18 (14.8)

***Correct responses**

Table 4.2c: Respondents Overall Knowledge Score

Overall Knowledge Score	Frequency	Percent (%)
Poor (0-6)	4	3.3
Fair (7-13)	38	31.1
Good (14-20)	80	65.6
Total	122	100

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4.3 Respondents Perception of Hepatitis B Virus

The majority of the respondents who have heard about Hepatitis B responded correctly to most of the perception statements. Seventy-eight respondents (63.9%) disagreed that it is not necessary to take any vaccine for the protection of hepatitis B virus. The majority of the respondents (82.8%) disagreed that hepatitis B is not a serious disease (Table 4.3a). A bit more than three-quarters of the respondents (75.4%) agreed that the hepatitis B vaccine can be administered to adults. Less than half (32.0%) of the respondents disagree that they cannot get the hepatitis B virus (Table 4.3a).

The majority of the respondents (78.7%) agreed that all children need hepatitis B vaccine. Seventy-nine respondents (64.8%) disagreed that it is not necessary to go for hepatitis B screening (Table 4.3a). However, 73.0% of the respondents disagreed that hepatitis B virus vaccine is not safe and effective. Also, 72.1% disagree that hepatitis B is the reward of sin (Table 4.3a).

The respondents' perception of hepatitis B virus infection was assessed using an 8 item scale and was categorized as negative (0-4) and positive (>4) perception. The study revealed that out of the 122 (25.4%) of the respondents who have heard of Hepatitis B virus, 46 respondents (37.7%) had a negative perception towards HBV while 76 respondents (62.3%) had positive perception towards HBV (Table 4.3b).

Table 4.3a: Perception of Respondents about Hepatitis B Virus

N=122

Perception of Respondents about HBV	Agree (%)	Disagree (%)	Undecided (%)
It is not necessary to take any vaccine for the protection of the hepatitis B virus	33 (27.0)	78 (63.9)*	11 (9.0)
Hepatitis b is not a serious disease	10 (8.2)	101 (82.8)*	11 (9.0)
Hepatitis B can be administered to adults	92 (75.4)*	12 (9.8)	18 (14.8)
I cannot get hepatitis B virus	54 (44.3)	39 (32.0)*	29 (23.8)
All children needs hepatitis B vaccine	96 (78.7)*	13 (10.7)	13 (10.7)
It is not necessary to go for hepatitis B screening	15 (12.3)	79 (64.8)*	28(23.0)
Hepatitis B virus vaccine is not safe and effective	24 (19.7)	89 (73.0)*	9 (7.4)
Hepatitis B virus is the reward of sin	13 (10.7)	88 (72.1)*	21 (17.2)

**Correct responses*

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Table 4.3b: Respondents Overall Perception Core

Overall Perception Score	Frequency	Percent (%)
Negative (0-4)	46	37.7
Positive (>4)	76	62.3
Total	122	100

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4.4 Respondents Practices Relating to Hepatitis B Virus

It was found out that 70.6% of the respondents have ever shared razor blade, out of the 339 (70.6%) respondents that have ever shared razor blade, 59.3% currently share razor blade. Out of 201 respondents (59.3%) that currently share blade; 11.9% always share blade and 88.1% sometimes share blade (Table 4.4a).

Also, 6.0% of the respondents have ever had sexual intercourse, out of 29 respondents (6.0%) that have had sexual intercourse, 51.7% have ever use condom during sex. Out of 15 respondents (51.7%) who have ever used condom during sex, 20.0% always use condom whenever they want to have sex and 80.0% sometimes use condom whenever they want to have sex (Table 4.4b). Also, from the responses, 83.8% cut/weave their hair at the saloon, out of 480 respondents who answered practice questions, 31.7% do not have their personal clipper. Out of 152 respondents (31.7%) who do not have their personal clipper/cutting comb, 38.1% never tell the barber to sterilize the clipper/cutting comb (Table 4.4c).

Ninety-three respondents (19.4%) have ever used someone's toothbrush, out of 93 respondents (19.4%) that have ever used someone's brush; 22.6% currently use other people's toothbrush, out of 21 respondents (22.6%) who currently use other people's brush; 10.8% always use someone's toothbrush while 89.2% sometimes use someone's toothbrush (Table 4.4d). From the responses, out of 480 respondents, 4.8% have ever received blood from a donor. Five respondents (1.0%) have ever donated blood to someone, 441 respondents (91.9%) have never been screened while 13 respondents (2.7%) do not know if they have been screened for hepatitis B virus. Two hundred and sixty one respondents (54.4%) have never been vaccinated against the hepatitis B virus while 190 respondents (39.6%) do not know if they have been vaccinated against hepatitis B virus. Out of 480 respondents who will be willing to get hepatitis B vaccination if recommended, 36.7% were not willing and 10.8% of the respondents do not know if they will be willing to get hepatitis B vaccination if recommended (Table 4.4e).

The respondents' practices relating to hepatitis B virus infection was assessed using a 17 item scale and were categorized as poor (0-8) and good (>8) practice. The study revealed that out of 480 respondents who per took in the study, 453 respondents (94.4%) had a poor practice towards HBV while 27 respondents (5.6%) had good practice towards HBV (Table 4.4f).

Table 4.4a: Practices of Respondents on the Sharing of Razor Blades

Ever shared razor blade	Frequency	Percent (%)
Yes	339	70.6
No	141	29.4
Currently share razor blade		
Yes	201	59.3
No	138	40.7
Frequency of sharing a razor blade		
Always	24	11.9
Sometimes	177	88.1

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Table 4.4b: Practices of Respondents on Sexual Intercourse

Ever had sexual intercourse	Frequency	Percent (%)
Yes	29	6.0
No	451	94.0
Ever use a condom during sex		
Yes	15	51.7
No	14	48.3
Frequency of using a condom whenever want to have sexual intercourse		
Always	3	20.0
Sometimes	12	80.0

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Table 4.4c: Practices of Respondents on Clipper/Cutting Comb

Practices of Respondents	Frequency	Percent (%)
Cut/weave your hair at the saloon		
Yes	402	83.8
No	78	16.2
Have personal clipper/cutting comb		
Yes	328	68.3
No	152	31.7
Frequency of telling barber to sterilize your clipper/cutting comb		
Always	60	39.5
Sometimes	34	22.4
Never	58	38.1

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Table 4.4d: Practices of Respondents on the Sharing of Toothbrush

Ever used someone's toothbrush	Frequency	Percent (%)
Yes	93	19.4
No	387	80.6
Currently use other people's toothbrush		
Yes	21	22.6
No	72	77.4
Use someone's toothbrush		
Always	10	10.8
Sometimes	83	89.2

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Table4.4e: Practices of Respondents on Blood, Screening and Vaccination

Practices on Blood, Screening and Vaccination	Frequency	Percent (%)
Ever receive blood from a donor		
Yes	23	4.8
No	457	95.2
Ever donated blood to someone		
Yes	5	1.0
No	475	99.0
Ever been screened for hepatitis B virus		
Yes	26	5.4
No	441	91.9
I Don't Know	13	2.7
Ever been vaccinated against hepatitis B virus		
Yes	29	6.0
No	261	54.4
I Don't Know	190	39.6
Willing to get a hepatitis B vaccination if recommended		
Yes	252	52.5
No	176	36.7
I Don't Know	52	10.8

Table 4.4f: Respondents Overall Practice Score

Overall Practice	Frequency	Percent (%)
Poor (0-8)	453	94.4
Good (>8)	27	5.6
Total	480	100.0

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4.5 Testing of Hypotheses

Hypothesis 1

There is no significant association between socio-demographic characteristics of respondents and their knowledge of Hepatitis B virus infection.

Chi-square/Fisher's exact analysis revealed that there is no significant association between socio-demographic variables (sex, school type, ethnic group, father's highest level of education, mother's highest level of education, mother's occupation) and level of knowledge of hepatitis B virus infection except age, class, religion and father's occupation who had a significant association with p-value <0.05 . Therefore we reject the null hypothesis on the association between age, class, religion and father's occupation as socio-demographic variables and their knowledge of HBV infection. Tables 4.5a, b, and c show the presentation of the results gotten from the analysis.

Table 4.5a: Association between Respondents' Socio-Demographic Characteristics and their Knowledge on Hepatitis B Virus

Socio-Demographic information	Knowledge			X ²	Df	P-value
	Poor (%)	Fair (%)	Good (%)			
Age						
10-14	4 (5.5)	28 (38.4)	41 (56.2)	7.767	2	0.013*
15-19	0 (0.0)	10 (20.4)	39 (79.6)			
Sex						
Male	3 (5.0)	21 (35.0)	36 (60.0)	2.120	2	0.347
Female	1 (1.6)	17 (27.4)	44 (71.0)			
Class						
J.S.S 1	2 (15.4)	6 (46.2)	5 (38.5)	25.509	10	0.001*
J.S.S 2	0 (0.0)	0 (0.0)	10 (100.0)			
J.S.S 3	0 (0.0)	8 (72.7)	3 (27.3)			
S.S.S 1	0 (0.0)	9 (45.0)	11 (55.0)			
S.S.S 2	2 (6.1)	7 (10.3)	24 (72.7)			
S.S.S 3	0 (0.0)	8 (22.9)	27 (77.1)			
School type						
Private school	2 (2.5)	26 (32.9)	51 (64.6)	0.818	2	0.671
Public school	2 (4.7)	12 (27.9)	29 (67.4)			
Ethnic group						
Yoruba	3 (3.4)	28 (31.5)	58 (65.2)	6.251	6	0.330
Hausa	1 (12.5)	4 (50.0)	3 (37.5)			
Igbo	0 (0.0)	5 (31.2)	11 (68.8)			
Others	0 (0.0)	1 (11.1)	8 (88.9)			
Religion						
Christianity	0 (0.0)	25 (32.9)	51 (67.1)	6.259	2	0.041*
Islam	(8.7)	13 (28.3)	29 (63.0)			

**Fisher exact (Statistically significant)*

Table 4.5b: Association between Respondents' Socio-Demographic Characteristics and their Knowledge on Hepatitis B Virus cont'd.

Socio-demographic information	Knowledge			X ²	Df	P-value
	Poor (%)	Fair (%)	Good (%)			
Father's highest level of education						
No formal education	0 (0.0)	1 (33.3)	2 (66.7)	9.378	8	0.343
Primary	0 (0.0)	5 (71.4)	2 (28.6)			
Secondary	0 (0.0)	1 (12.5)	7 (87.5)			
Tertiary	4 (3.9)	31 (30.1)	68 (66.0)			
I Don't know	0 (0.0)	0 (0.0)	1 (100.0)			
Mother's highest level of education						
Primary	0 (0.0)	2 (100.0)	0 (0.0)	10.102	6	0.099
Secondary	0 (0.0)	2 (12.5)	14 (87.5)			
Tertiary	4 (4.0)	32 (31.7)	65 (64.4)			
I Don't know	0 (0.0)	2 (66.7)	1 (33.3)			

Fisher exact

Table 4.5c: Association between Respondents' Socio-Demographic Characteristics and their Knowledge on Hepatitis B Virus cont'd.

Socio-demographic information	Knowledge			X ²	Df	P-value
	Poor (%)	Fair (%)	Good (%)			
Father's occupation						
Trader	1 (3.4)	6 (20.7)	22 (75.9)	19.061	12	0.048*
Civil servant	2 (5.1)	16 (41.0)	21 (53.8)			
Works in private organization	0 (0.0)	8 (28.6)	20 (71.4)			
Teacher	0 (0.0)	5 (62.5)	3 (37.5)			
Unemployed	0 (0.0)	1 (100.0)	0 (0.0)			
Retired	1 (33.3)	0 (0.0)	2 (66.7)			
Others	0 (0.0)	2 (14.3)	12 (85.7)			
Mother's occupation						
Trader	1 (2.1)	12 (25.5)	34 (72.3)	20.542	14	0.074
Civil servant	0 (0.0)	6 (27.3)	16 (72.7)			
Works in private organization	0 (0.0)	10 (50.0)	10 (50.0)			
Teacher	3 (17.6)	4 (23.5)	10 (58.8)			
Artisan	0 (0.0)	2 (100.0)	0 (0.0)			
Unemployed	0 (0.0)	1 (100.0)	0 (0.0)			
Retired	0 (0.0)	1 (33.3)	2 (66.7)			
Others	0 (0.0)	2 (20.0)	8 (80.0)			

* *Fishers exact (statistically significant)*

Hypothesis 2

There is no significant association between socio-demographic characteristics of respondents and their perception of Hepatitis B virus infection.

Chi-square/Fisher's exact analysis revealed that there is no significant association between socio-demographic variables (age, sex, class, school type, ethnic group, religion, father's highest level of education, mother's highest level of education, father's occupation) and their perception of hepatitis B virus infection except mother's occupation who had a significant association with p-value <0.05 . Therefore we reject the null hypothesis on the association between mother's occupation as a socio-demographic variable and their perception of HBV infection. Table 4.6a, b, c shows the presentation of the results gotten from the analysis.

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Table 4.6a: Association between Respondents' Socio-Demographic Characteristics and their Perception of the Hepatitis B Virus

Socio-demographic information	Perception		X ²	Df	P-value
	Negative (%)	Positive (%)			
Age					
10-14	28 (38.4)	45 (61.6)	0.033	1	1.000
15-19	18 (36.7)	31 (63.3)			
Sex					
Male	28 (46.7)	32 (53.3)	4.037	1	0.061
Female	18 (29.0)	44 (71.0)			
Class					
J.S.S 1	3 (23.1)	10 (76.9)	7.916	5	0.156
J.S.S 2	3 (30.0)	7 (70.0)			
J.S.S 3	7 (63.6)	4 (36.4)			
S.S.S 1	4 (20.0)	16 (80.0)			
S.S.S 2	15 (45.5)	18 (54.5)			
S.S.S 3	14 (40.0)	21 (60.0)			
School type					
Private school	27 (34.2)	52 (65.8)	1.188	1	0.330
Public school	19 (44.2)	24 (55.8)			
Ethnic group					
Yoruba	34 (38.2)	55 (61.8)	1.446	3	0.736
Hausa	4 (50.0)	4 (50.0)			
Igbo	6 (37.5)	10 (62.5)			
Others	2 (22.2)	7 (77.8)			
Religion					
Christianity	30 (39.5)	46 (60.5)	0.268	1	0.701
Islam	16 (34.8)	30 (65.2)			

Fisher exact

Table 4.6b: Association between Respondents' Socio-Demographic Characteristics and their Perception of the Hepatitis B Virus cont'd.

Socio-demographic information	Perception		X ²	Df	P-value
	Negative (%)	Positive (%)			
Father's highest level of education					
No formal education	2 (66.7)	1 (33.3)	4.292	4	0.320
Primary	4 (57.1)	3 (42.9)			
Secondary	3 (37.5)	5 (62.5)			
Tertiary	36 (35.0)	67 (65.0)			
I Don't know	1 (100.0)	0 (0.0)			
Mother's highest level of education					
Primary	0 (0.0)	2 (100.0)	2.336	3	0.516
Secondary	7 (43.8)	9 (56.2)			
Tertiary	37 (36.6)	64 (63.4)			
I Don't know	2 (66.7)	1 (33.3)			

Fisher exact

Table 4.6c: Association between Respondents' Socio-Demographic Characteristics and their Perception of the Hepatitis B Virus cont'd.

Socio-demographic information	Perception		X ²	Df	P-value
	Negative (%)	Positive (%)			
Father's occupation					
Trader	11 (37.9)	18 (62.1)	10.079	6	0.091
Civil servant	15 (38.5)	24 (61.5)			
Works in private organization	8 (28.6)	20 (71.4)			
Teacher	7 (87.5)	1 (12.5)			
Unemployed	0 (0.0)	1 (100.0)			
Retired	1 (33.3)	2 (66.7)			
Others	4 (28.6)	10 (71.4)			
Mother's occupation					
Trader	15 (31.9)	32 (68.1)	14.240	7	0.025*
Civil servant	4 (18.2)	18 (81.8)			
Works in private organization	10 (50.0)	10 (50.0)			
Teacher	10 (58.8)	7 (41.2)			
Artisan	1 (50.0)	1 (50.0)			
Unemployed	0 (0.0)	1 (100.0)			
Retired	3 (100.0)	0 (0.0)			
Others	3 (30.0)	7 (70.0)			

**Fisher exact (Statistically significant)*

Hypothesis 3

There is no significant association between socio-demographic characteristics of respondents and their practices towards Hepatitis B virus infection.

Chi-square/Fisher's exact analysis revealed that there is no significant association between socio-demographic variables (age, sex, class, school type, ethnic group, religion, father's highest level of education, mother's highest level of education, father's occupation, mother's occupation) and their practices towards hepatitis B virus infection with p-value >0.05 . Therefore we fail to reject the null hypothesis on the association between socio-demographic characteristics and their practices relating to HBV infection. Table 4.7a, b, and c show the presentation of the results gotten from the analysis.

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Table 4.7a: Association between Respondents' Socio-Demographic Characteristics and their Practices towards Hepatitis B Virus

Socio-demographic information	Practice		X ²	Df	P-value
	Poor (%)	Good (%)			
Age					
10-14	271 (93.8)	18 (6.2)	0.498	1	0.548
15-19	182 (95.3)	9 (4.7)			
Sex					
Male	194 (92.4)	16 (7.6)	2.796	1	0.111
Female	259 (95.9)	11 (4.1)			
Class					
J.S.S 1	55 (91.7)	5 (8.3)	4.112	5	0.532
J.S.S 2	57 (95.0)	3 (5.0)			
J.S.S 3	59 (98.3)	1 (1.7)			
S.S.S 1	56 (93.3)	4 (6.7)	111 (92.5)	9 (7.5)	115 (95.8)
S.S.S 2	111 (92.5)	9 (7.5)			
S.S.S 3	115 (95.8)	5 (4.2)			
School type					
Private school	187 (93.5)	13 (6.5)	0.494	1	0.548
Public school	266 (95.0)	14 (5.0)			
Ethnic group					
Yoruba	328 (94.3)	20 (5.7)	6.088	3	0.078
Hausa	34 (100.0)	0 (0.0)			
Igbo	70 (95.9)	3 (4.1)			
Others	21 (84.0)	4 (16.0)			
Religion					
Christianity	297 (93.4)	21 (6.6)	2.169	2	0.371
Islam	154 (96.2)	6 (3.8)			
Traditional	2 (100.0)	0 (0.0)			

Fisher exact

Table 4.7b: Association between Respondents' Socio-Demographic Characteristics and their Practices towards Hepatitis B Virus cont'd.

Socio-demographic information	Practice		X ²	Df	P-value
	Poor (%)	Good (%)			
Father's highest level of education					
No formal education	7 (100.0)	0 (0.0)	4.181	4	0.310
Primary	4.2 (100.0)	0 (0.0)			
Secondary	81 (96.4)	3 (3.6)			
Tertiary	311 (92.8)	24 (7.2)			
I Don't Know	12 (100.0)	0 (0.0)			
Mother's highest level of education					
No formal education	6 (100.0)	0 (0.0)	3.808	4	0.348
Primary	34 (100.0)	0 (0.0)			
Secondary	105 (96.3)	4 (3.7)			
Tertiary	297 (93.1)	22 (6.9)			
I Don't Know	11 (91.7)	1 (8.3)			

Fisher exact

Table 4.7c: Association between Respondents' Socio-Demographic Characteristics and their Practices towards Hepatitis B Virus cont'd.

Socio-demographic information	Practice		X ²	Df	P-value
	Poor (%)	Good (%)			
Father's occupation					
Trader	108 (93.9)	7 (6.1)	9.792	7	0.136
Civil servant	137 (97.9)	3 (2.1)			
Works in private organization	106 (92.2)	9 (7.8)			
Teacher	23 (100.0)	0 (0.0)			
Artisan	8 (100.0)	0 (0.0)			
Unemployed	7 (100.0)	0 (0.0)			
Retired	9 (90.0)	1 (10.0)			
Others	55 (88.7)	7 (11.3)			
Mother's occupation					
Trader	235 (95.5)	11 (4.5)	9.965	7	0.123
Civil servant	63 (95.5)	3 (4.5)			
Works in private organization	50 (87.7)	7 (12.3)			
Teacher	46 (97.9)	1 (2.1)			
Artisan	9 (100.0)	0 (0.0)			
Unemployed	12 (100.0)	0 (0.0)			
Retired	9 (100.0)	0 (0.0)			
Others	29 (85.3)	5 (14.7)			

Fisher exact

Hypothesis 4

There is no significant association between knowledge and practices towards hepatitis B virus infection among in-school adolescents in Ibadan Northwest Local Government Area of Oyo State.

Fisher's exact analysis revealed that there is no significant association between knowledge and practices towards hepatitis B virus infection with p-value >0.05 . Therefore we fail to reject the null hypothesis on the association between knowledge categories and their practices towards HBV infection. Table 4.8 shows the presentation of the results gotten from the analysis.

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Table 4.8: Association between Respondents' Knowledge Characteristics and their Practices towards Hepatitis B Virus

Knowledge category	Practice		X ²	Df	P-value
	Poor (%)	Good (%)			
Poor (0-6)	3 (75.0)	1 (25.0)	4.465	2	0.090
Fair (7-13)	37 (97.4)	1 (2.6)			
Good (14-20)	70 (87.5)	10 (12.5)			

Fisher exact

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CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Socio-demographic characteristic of the respondents

The study focused on in-school adolescents in some selected public and private schools located in Ibadan Northwest Local Government Area to assess their knowledge, perception, and practices towards hepatitis B virus Infection. The mean age of the respondents in this study was 13.8 ± 2.0 years with a greater number of females (56.3%) than males (43.8%). This is similar to the respondents sampled in the studies of Adekanle, Ndububa, Olowookere, Ijarotimi, and Ijadunola, (2015); Aluko, Adebayo, Adebisi, and Ewegbemi, (2016); and Omeje, Ibekwe, Ojukwu, Una, and Ibe, (2017). The majority of the respondents were Christians pointing to the fact that Christianity may be the predominant religion in the area. Due to the study site (South Western Nigeria), the majority of the respondents were predictable of the Yoruba ethnic group. This is also similar to the studies conducted by Adekanle et al., (2015); and Aluko et al., (2016).

The majority of the respondents reported their parents as having tertiary education; fathers (69.8%) and mothers (66.5%). Most (29.2%) of the respondents' fathers were civil servants while most (51.3%) of the mothers were traders.

5.1.2 Awareness and knowledge of respondents on hepatitis B virus infection

The majority of the respondents (74.6%) have never heard of hepatitis B virus infection. This is contrary to studies conducted by Nagpal and Hagde (2015), Ghouri, Aslam, Iqbal and Shah, (2015), Iddrisu, (2017) and Aniaku, Amedonu and Fusheini, (2019), in which majority of the students 97.7%, 95.0%, 89.0%, and 97.8% respectively have heard of hepatitis B virus. This may imply that HBV infection is not a major health issue taught in some secondary schools in Nigeria, unlike some other Africa countries. In this study, the major sources of information with multiple responses were school (37.7%). This is also contrary to the studies conducted by Lohoues-Kouacou et al. (2013), Boakye (2017), Faiza (2017) and Iddrisu (2017) in which their major sources of information were gotten from mass media 62.0%, 77.0%, 34.0% and 34.0%, respectively. According to Thaver and Kamal (2010), it is possible that multiple sources of

knowledge may have a better influence on adolescents, as young adolescents from educated backgrounds tend to be influenced more from commercials, billboards, TV, movies and the internet than older people. This means that though all sources of information have major potential for the dissemination of health information, they may be more attractive to some social groups (adults and adolescents) than others.

This study revealed that a bit more than one-quarter (25.4%) of the respondents have heard about HBV. However, with this small proportion that has heard of HBV, 65.6% of the respondents have good knowledge, 31.1% had fair knowledge and 3.3% have poor knowledge. This knowledge level is consistent with studies carried out in Sagnarigu District of the Northern Region, where 67.5% have good knowledge of HBV infection (Iddrisu, 2017) and also with the study carried out among health workers in Usmanu Danfodiyo University Teaching Hospital by Hassan, Awosan, Nasir, Tunau, Burodo, Yakubu, and Oche), which demonstrated that 78.2% of the health workers had good knowledge of HBV infection. The higher percentage of good knowledge among the health workers compare to the school setting may be due to the educational level of the health workers and the fact that they work in the health sector.

Also, one-third (32.0%) of the respondents did not affirm that HBV can make the eye go yellowish. This is contrary to the study conducted by Negal and Hegde (2015), in which 77.2% of the students knew that hepatitis B can make the eye go yellowish. Almost half of the respondents wrongly answered that hepatitis B cannot be transmitted by contaminated needles. This is contrary to the studies conducted by Ghouri et al. (2015) and Aniaku et al. (2019) where the majority of their respondents correctly answered that hepatitis B can be transmitted by contaminated needles. Almost half of the respondents wrongly responded that hepatitis B is more serious compared to HIV. This is contrary to the studies conducted by Aniaku et al., (2019), Iddrisu, (2017) and Hassan et al (2016) where a majority of the respondents correctly stated that hepatitis B is more serious compared to HIV. Also, almost half of the respondents wrongly responded that someone can get hepatitis B virus by eating food that is pre-chewed by an infected person. This is contrary to the study conducted by Boakye (2017) where the majority were right that HBV can be gotten by eating food that has been pre-chewed by an infected person. These responses may suggest that, although some of the students have heard of HBV, among them, some still do not have adequate knowledge of HBV.

This study found that the association between the respondents' socio-demographic characteristics and their knowledge of hepatitis B virus infection showed that their age, class, religion and father's occupation were statistically significant with p-values of 0.013, 0.001, 0.041 and 0.048, respectively.

5.1.3 Perception of respondents on hepatitis B virus infection

The study revealed that among one-quarter (25.4%) of the respondents who have heard of the HBV, most (62.3%) of the respondents had a positive perception towards HBV. This finding is comparable to that of Hassan et al. (2016) where most of the respondents have positive perception. Also, our finding points out that most adolescents in the study area have a positive perception which may be due to their good knowledge of HBV and their sources of information. The majority of the respondents disagreed that HBV is a reward of sin. Almost half (44.3%) of the respondents agreed that they cannot get HBV. This is contrary to the studies conducted by Bello, Cook and Musa (2016), Hassan et al. (2016) in which the majority (84.0%, 93.5%) of their respondents felt they were at risk of having HBV infection. This may be due to their profession but it was found to be similar to studies conducted by Alhowaish et al. (2017) and Iddrisu (2017). The association between the respondents' socio-demographic characteristics and their perception of hepatitis B virus infection showed that only the mother's occupation was statistically significant with a p-value of 0.025.

5.1.4 Practice of respondents relating to hepatitis B virus infection

Hepatitis B virus infection and HIV have a similar mode of transmission and this study revealed that there is poor practice towards HBV infection among the respondents – only 5.6% of the respondents have good practice while 94.4% have poor practice. This may be due to the low awareness of HBV among the study population. Furthermore, amongst those that were aware, a good number did not have the right knowledge about the virus. This may be due to misconceptions regarding HBV infection especially in this part of the world that is still holding sway. Therefore, a lot of education, sensitization and awareness campaigns must be intensified so as to disabuse the minds of society against these erroneous believes and to help the adolescents to be well informed about HBV infection. The majority of the respondents (70.6%) have ever shared a razor blade, more than half of the respondents (59.3%) currently share a razor

blade while 11.9% always share a razor blade. Only 6.0% have ever had sex. Out of the 6.0% that has ever had sex, less than half (48.3%) did not use a condom during sex and based on the frequency of condom use, 80.0% sometimes use a condom during sex. Sharing of sharp objects and having unprotected sex are risky practices that can predispose one of contracting HBV infection. This finding is comparable to that of Omeje et al. (2017) where more than half of their respondents share razor blades and 60.5% of respondents had unprotected sex. This study was contrary to a study conducted by Sasaki et al. (2015) that practice of sex without condom use was evidenced mainly in adolescents. One hundred and fifty-two respondents (31.7%) do not have a personal clipper in which 22.4% sometimes tell the barber to sterilize the clipper while 38.1% as never tell the barber to sterilize the clipper. Not sterilizing of clipper that is not yours before use is a risky practice of having HBV infection in which the respondents may not know due to low awareness of HBV infection. This study is similar to that of Omeje et al. (2017) in which 5.1% of the respondents share clippers.

Ninety-three respondents have ever used someone's toothbrush in which 22.6% currently use other's toothbrush while 10.8% always use other's toothbrush. Those that currently and always use other's toothbrushes may not be aware that sharing of toothbrushes especially with an infected person can make one prone to have HBV infection and which is also a means of transmission. This finding was found to be similar to a study conducted by Boakye (2015) where 20.5% of the respondents do not know that HBV could be transferred by sharing a toothbrush.

The majority of the respondents have never received blood and have never donated blood. This may be due to their mean age of 13.8 ± 2.0 years in which a minority cannot donate blood (WHO 2018). Most of the respondents (91.9%) answered that they have never been screened for HBV. This is not in line with a study conducted by Alhawaish et al. (2017) in which more than half of the respondents (56.5%) have been screened. More than half of the respondents said they have never been vaccinated against HBV. This is similar to a study conducted by Albo et al. (2015) where 58.5% of the respondents have not taken HBV vaccine and is contrary to a study conducted by Alhawaish et al. (2017), about three-quarter of the respondents (69.5%) have been vaccinated against HBV. The association between the respondents' socio-demographic characteristics and their practices towards hepatitis B virus infection showed that they were not statistically significant with $p\text{-value} > 0.05$.

5.1.5 Implications of findings to Health Promotion and Education

The findings of this study provide important information on knowledge, perception, and practices towards HBV infection among in-school adolescents in Ibadan Northwest Local Government Area, Ibadan. This study is important because it shows that the majority of the adolescents in some selected secondary schools in Ibadan Northwest Local Government Area are not aware of HBV infection which is a deadly disease and more serious when compared to HIV and it's also a global and a public health importance. This study revealed that among the few respondents that are aware of HBV, most of the respondents had good knowledge and positive perception but almost all of the respondents had poor practices relating to HBV. This shows that if awareness of HBV is more there is the tendency that adolescents might have good knowledge, positive perception and good practices relating to HBV infection. The respondents showed a positive outcome of the eagerness of wanting to know more about HBV infection. In achieving a good practice a lot of enlightenment, sensitization and educational campaign need to be intensified both in school and the society at large since the school was their major source of information and the students and teachers comes from different communities where they might tell others about HBV Infection.

This result showed that most of the respondents had some misconceptions about Hepatitis B virus infection. The government, the school authorities, health promotion, and education specialist and other health-related organizations has a major role in tackling these misconceptions and this can be done through awareness creation, trainings, seminars, advocacy, counseling in school, use of behavioural communication materials like posters, flyers, health talk sessions in schools, radio, television, and internet. Also, the Government should subsidize the price of the vaccine to make it affordable for the general public.

5.2 Conclusion

HBV is 50 to 100 times more infectious than HIV (Nagpal and Hegde, 2016) and could result in liver cirrhosis and cancer if it is not treated early enough. The majority of the respondents have never heard of Hepatitis B virus infection but few respondents that have heard of HBV infection had good knowledge and positive perception with some misconceptions but they all have poor practices towards HBV infection. This indicates that if more people are aware of the infection

(HBV), their knowledge and perception might increase and their practices relating to HBV infection might improve. While keeping in view the magnitude of HBV it is important to consider adolescents both in schools and out of schools since they are young and educate them regarding the magnitude of HBV and its preventive practices especially with the result of this study showing a poor level of practice. Therefore there is a need for continuous education on HBV infection using schools since, in this study, the school was the major source of information of the respondents on HBV.

5.3 Recommendations

The following recommendations were made:

1. More information should be given to students regarding the modes of transmission and the means of preventing the spread of HBV to improve their knowledge on the prevention of this disease by the school authority, teachers, parents, and media.
2. Programmes aimed at improving the preventive practices of the respondents relating to HBV infection should be organized in the school by the school authority.
3. Hepatitis B virus vaccination should be covered as part of the preventive services in clinics/health centre for the adolescents who have not been immunized at a reduce cost to be able to access it.
4. It will be of enormous importance if the schools, parents, teachers, and media are employed during the process of transformation of the information on HBV.
5. Government and school can play an important role in the reinforcement of sexual education programmes like HBV and directing young people to general practitioners and primary sexual health care services.
6. The government should sponsor different media awareness campaigns geared towards the prevention of the transmission of “Hepatitis B Virus” (HBV) and the use of vaccines as a major alternative for prevention.

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APPENDICES

APPENDIX 1

INFORMED CONSENT FORM FOR KNOWLEDGE, PERCEPTION AND PRACTICES TOWARDS HEPATITIS B VIRUS INFECTION AMONG IN-SCHOOL ADOLESCENTS IN IBADAN NORTHWEST LOCAL GOVERNMENT, AREA, IBADAN, OYO STATE.

Dear respondent,

My name is Ayorinde, Iyetade Oluwafunmilayo, I am a postgraduate student from the department of health promotion and education, faculty of public health, University of Ibadan. I am conducting a study with the purpose of investigating the knowledge, Perception and practices towards Hepatitis B virus infection among In-school adolescents in Ibadan Northwest Local Government Area, Ibadan, Oyo state.

Title of research: Knowledge, Perception and Practices towards Hepatitis B Virus infection among In-School Adolescents in Ibadan Northwest Local Government Area, Ibadan, Oyo State.

Name of the researcher: This study is been conducted by Ayorinde Iyetade Oluwafunmilayo a postgraduate student in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine University of Ibadan.

Purpose of the research: The purpose of this study is to investigate the *Knowledge, Perception and Practices towards Hepatitis B Virus infection among In-School Adolescents in Ibadan Northwest Local Government Area, Ibadan, Oyo State.*

Sample size and procedure for data collection: A total of 480 in-school adolescents in Ibadan Northwest Local Government Area in 12 selected schools which comprises of both private and public schools will be recruited using a multi-stage sampling procedure to select eligible respondents.

Expected duration of the research and participant(s) involvement: This process of this study will last for three weeks. You are to provide answers to the questions contained in the questionnaire. The questionnaire is expected to last about 10-20 minutes to complete.

Risk(s): There are no physical risks in participating in this study. However, there are some questions on socio-demographic characteristics and sexual behaviour which some respondents would find it uncomfortable to answer.

The cost of participating in joining the research: Participation will cost you nothing. It will, however, take a little of your time.

Benefit: At the end of the research, findings will be useful in identifying knowledge gaps and bridge the gap of lack of sufficient information on Knowledge, Perception and Practices relating to Hepatitis B Virus infection among In-School Adolescents.

Confidentiality: All information collected in this study will be given coded numbers. Names of respondents will not be written on the questionnaire. Also, any other identifiers will not be used in any publication or report emanating from this study.

Voluntariness: Your participation in this research is entirely voluntary.

Consequences of the respondents' decision to withdraw from the research and procedure for orderly termination of respondent: You can choose to withdraw from the research at any time without penalty. Please note that some of the information that has been obtained about you before you choose to withdraw may have been used in reports and publications.

Statement of Person Obtaining Informed Consent

I have fully explained the nature and scope of the research to-----
and have provided sufficient information to him/her to make an informed decision.

Date ----- **Signature**-----

Name -----

Statement of Person Giving Consent

I have read the description of the research and have been explained to me in a language I understand. I understand that my participation is voluntary. I know enough about the purpose, methods, risk and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. Finally, I have received a copy of this consent form and an additional information sheet to keep for me.

Date ----- **Signature** -----

Name -----

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APPENDIX II
QUESTIONNAIRE

KNOWLEDGE, PERCEPTION AND PRACTICES TOWARDS HEPATITIS B VIRUS (HBV) INFECTION AMONG IN-SCHOOL ADOLESCENTS IN IBADAN NORTHWEST LOCAL GOVERNMENT AREA, OYO STATE.

Dear Respondent,

I am a Master's student at the Department of Health Promotion and Education, Faculty of Public Health, University of Ibadan. This research is geared towards generating information on *Knowledge, Perception and Practices towards Hepatitis B Virus (HBV) infection among in-school adolescents in Ibadan Northwest Local Government Area, Oyo State.*

You have been invited to take part in this study because you are an adolescent within the age range of **(10-19 years)**. Please note that your participation in this study is entirely voluntary and you can withdraw at any time. If you choose to withdraw at any time, you will not be affected but your decision to participate in the study is very important and **YOU SHOULD NOT WRITE YOUR NAME** anywhere on the questionnaire.

All information that would be collected during this study will be treated with the utmost confidentiality and there are no risks associated with this study and your participation will not cost you anything than the time needed to complete the questionnaire. Please also note that there is no right or wrong answers to the questions asked or the statements made. The time needed to complete this questionnaire is approximately 15-20 minutes. Your willingness to complete the questionnaire implies you have given assent/consent to participate in the study. *Please ensure that you answer the entire question honestly and correctly as this will increase the quality of the findings.*

Kindly append your signature in the section below as a form of a written assent/consent to participate in the study. Thank you for cooperating.

Respondent's signature..... Serial number.....

Instruction: Please complete the spaces provided or tick (✓) the boxes provided as the case may be.

SECTION A: Socio-demographic characteristics of respondents

1. Age as at last birthday in years.....
2. Sex: 1.Male () 2. Female ()
3. Class: 1. J.S.S 1 () 2. J.S.S 2 () 3. J.S.S 3 () 4. S.S.S1 () 5. S.S.S 2 ()
6. S.S.S 3 ()
4. School type: 1. Private () 2. Public ()
5. Ethnic group: 1. Yoruba () 2. Hausa () 3. Igbo ()4. Others.....
6. Religion: 1. Christianity () 2. Islam () 3. Traditional () 4. Others (Specify) -----
- 7a. Father’s highest level of education: 1. No formal education () 2. Primary ()
3.Secondary () 4. Tertiary () 5. Others, (Specify)-----
- 7b. If tertiary, please specify type: 1. NCE () 2. OND () 3. HND () 4. B.SC ()
5. Others (Specify) -----
- 8a. Mother’s highest level of education: 1. No formal education () 2. Primary ()
3.Secondary () 4. Tertiary () 5. Others, (Specify)-----
- 8b. If tertiary, please specify type: 1. NCE () 2. OND () 3. HND () 4. B.SC () 5.
Others (Specify)-----
9. Father’s occupation: 1. Trader () 2. Civil Servant () 3. Works in private
Organization () 4. Teacher ()5. Artisan () 6. Unemployed () 7. Retired() 8.
Others, (specify)-----
10. Mother’s occupation: 1.Trader () 2. Civil Servant () 3. Works in private Organization ()
4. Teacher () 5. Artisan ()6.Unemployed() 7. Retired () 8. Others, (specify)-----

SECTION B: Knowledge of In-School Adolescents In Ibadan Northwest Local Government Area Towards HBV Infection

Instruction: please tick (✓) the answer you consider appropriate for each of the questions in this section

11. Have you ever heard of hepatitis B? 1. Yes () 2. No ()
If no, go to question no. 15
12. If yes to question 11, please specify your source of information on hepatitis B virus (note: if no to question 11, do not answer this question) you are free to tick more than one source known to you
1. Television () 2. Radio () 3. School () 4. Parent () 5. Teacher ()
6. Friends () 7. Books () 8. Social media () 9. Family member () 10. Mosque ()
11. Church () 12. Internet () 13. Others (specify)-----
13. Table 1 contains a list of statements relating to Hepatitis B, for each tick either True or False

Table 1

SN	Knowledge of Hepatitis B virus infection	True	False
13.1	Hepatitis is the swelling of the liver?		
13.2	Hepatitis B can spread from person to person?		
13.3	A vaccine for hepatitis B does not exist?		
13.4	Hepatitis B infection can make the eye go yellowish?		
13.5	A blood test is the only way to know for sure if someone has hepatitis B.		
13.6	Hepatitis B can be transmitted through handshakes		
13.7	Hepatitis B virus cannot be transmitted by contaminated needles		
13.8	Someone with hepatitis B virus who looks well or is not down with the disease can transmit the virus to others		
13.9	Hepatitis B virus can be transmitted from mother to foetus		
13.10	Hepatitis B is more serious compared with HIV?		
13.11	Hepatitis B can cause serious liver disease?		
13.12	Hepatitis B cannot cause liver cancer?		
13.13	Hepatitis B cannot lead to death?		

13.14	Syringes should be sterilized before use		
13.15	Wearing of gloves can protect against hepatitis B		
13.16	hepatitis B is preventable by a vaccine		
13.17	Hepatitis B vaccine confers permanent protection		
13.18	Hepatitis B is not treatable		
13.19	Someone can get hepatitis B virus by eating food that has been pre-chewed by an infected person		
13.20	Hepatitis B vaccine is given to children as part of their immunization routine		

SECTION C: Perception of Hepatitis B Virus Infection Among In School Adolescents

Instruction: please tick (✓) the answer you consider appropriate for each of the questions in this section

Table 2

SN	Perception of hepatitis B virus infection	Agree	Undecided	Disagree
14.1	It is not necessary to take any vaccine for the protection of hepatitis B virus			
14.2	Hepatitis B is not a serious disease?			
14.3	Hepatitis B vaccine can be administered to adults			
14.4	I cannot get Hepatitis B virus			
14.5	All children need hepatitis B vaccine			
14.6	It is not necessary to go for hepatitis B screening			
14.7	HBV vaccine is not safe and effective			
14.8	Hepatitis B virus is the reward of sin			

SECTION D: Practices of Hepatitis B Virus Infection Among In-School Adolescents

Instruction: please tick (✓) the answer you consider appropriate for each of the questions in this section

15. Have you ever shared a razor blade (or used a razor blade which another person has used)?
1. Yes () 2. No ()
16. Do you currently share a razor blade? 1. Yes () 2. No ()
17. If yes, how often do you share a razor blade? 1. Always () 2. Sometimes ()
18. Have you ever had sexual intercourse? 1. Yes () 2. No ()
19. If yes, have you ever use a condom during sex? 1. Yes () 2. No ()
20. How often do you use a condom whenever you want to have sexual intercourse?
1. Always () 2. Sometimes () 3. Never ()
21. Do you cut your hair at the saloon? 1. Yes () 2. No ()
22. Do you have your personal clipper/cutting comb? 1. Yes () 2. No ()
23. If no to question 22, how often do you tell your barber to sterilize the clipper/cutting comb? 1. Always () 2. Sometimes () 3. Never ()
24. Have you ever used someone's toothbrush (friends/family members)? 1. Yes ()
2. No ()
25. Do you currently use other people's toothbrushes? 1. Yes () 2. No ()
26. If yes to question 24, how often do you use their toothbrush? 1. Always ()
2. Sometimes ()
- 27a. Have you ever receive blood from a donor? 1. Yes () 2. No ()

- 27b. Have you ever donated blood to someone? 1. Yes () 2. No ()
28. Have you ever been screened for Hepatitis B virus? 1. Yes () 2. No () 3. I don't know ()
29. Have you ever been vaccinated against Hepatitis B virus? 1. Yes () 2. No ()
3. I don't know ()
30. For those who have heard of hepatitis B and have not taken the vaccine, will you be willing to get a hepatitis B vaccination if recommended? 1. Yes () 2. No ()
3. I don't know ()

Thank you for your time spent!

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APPENDIX III

ETHICAL APPROVAL

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