KNOWLEDGE OF CAUSES, ATTITUDE AND PERCEPTION OF HEPATITIS B VIRUS INFECTION AMONG SENIOR SECONDARY SCHOOL STUDENTS IN SABON-GARI LOCAL GOVERNMENT AREA, KADUNA STATE.

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Abstract

Hepatitis B virus (HBV) infection remains a significant public health burden globally, with varying levels of awareness, understand and utilization among different population groups. This study aimed to assess the knowledge of causes attitude and perception of HBV infection among senior secondary school students in Sabon-Gari Local Government Area, Kaduna State. A cross-sectional descriptive research design was adopted for this study. A simple random sampling method was used to select two hundred and seventy (270) consenting respondents from two public schools. A semi-structured self-interviewer-administered questionnaire was used to elicit information on respondents' socio-demographic characteristics, knowledge of HBV infection was measured on a 16-point scale; scores of ≤8, >8-16, were categorised as poor and good. Attitude was measured a 12-point scale; scores of ≤6, >6-12, were categorised as negative and positive while perception was measured on a 14-point scale; scores of ≤7, >7-14, were categorised as wrong and right perception respectively. Data were analysed using descriptive statistics mean and Chi-square tests at (p=0.05) to test hypotheses. Respondents' mean age was 18.7±9.0 with age ranges from 12 to 18 years. Almost all of the respondents (97.4%) have heard about HBV infection, slightly above half (55.2%) said HBV can be contracted from sexual relationships. Below half (42.2%) of the respondents reported that HBV can be acquired during birth. And above half (52.2%) of the respondents affirmed HBV cannot be transmitted by sharing toothbrush with an infected and likewise, below half (37.4%) of the respondents acclaimed that HBV cause liver cancer, slightly below half (39.6%) of the respondents reported that HBV can cause Jaundice among children. Majority (73.3%) of the respondent were willing to get vaccinated, majority (78.4%) of the respondents perceived that regular exercise and eating healthy food can prevent HBV infection. Above half (66.7%) of the respondents acknowledged that they need HBV vaccination at their age. Slightly above half (51.9%) of the respondents had good knowledge, half (59.3%) of the respondents had negative attitude with above half (55.6%) of the respondents had right perception towards HBV. Age 12-14 (28.8%) had wrong perception while (71.2%) of the respondents had right perception about HBV infection. There is significant relationship between class and attitude of Hepatitis B viral infection among the SS2 and SS3 students. Respondents' age was not significantly associated with Knowledge and perception of HBV infection respectively. The study revealed that most of the respondents had good knowledge, right perception and negative attitude on HBV infection**.** Therefore, printed and electronic media should be used to disseminate factual health promotion and education information on the needs to promote positive attitude and patronage of Hepatitis B vaccine.

Keywords: Knowledge, Attitude, Perception, Virus, Infection, Hepatitis B

Introduction

According to the World Health Organization, Nigeria contributes significantly to the burden of chronic viral hepatitis especially B globally due to low level of awareness. Viral hepatitis is the seventh leading cause of death globally (World Health Organization, 2018). An estimated 95% of individuals with chronic Hepatitis B Virus (HBV) infection, or both, are unaware of their infection and so do not benefit from clinical care, treatment, and interventions that are designed to reduce onward transmission (Spearman et al, 2020). Majority of the Nigerian population are not aware of its chronic complications of liver cirrhosis and primary liver cell cancers (National AIDS/STIs Control Program, 2020).

The burden of hepatitis B infection is highest in the WHO Western Pacific Region and the WHO African Region, where 116 million and 81 million people, respectively, are chronically infected. Sixty million people are infected in the WHO Eastern

Mediterranean Region, 18 million in the WHO South-East Asia Region, 14 million in the WHO European Region and 5 million in the WHO Region of the Americas. (WHO, 2022).

There are approximately 350 million chronic Hepatitis-B surface antigen carriers in the world. (Johnson et al, 2018). An estimated 257 million people are living with hepatitis B virus infection, in 2015 hepatitis B resulted in 887,000 deaths, mostly from complications including cirrhosis and hepatocellular carcinoma (WHO, 2022). There is currently no permanent cure for Hepatitis B Virus infection. Hence, prevention of the disease through vaccination is the only effective means to control the disease. Hepatitis-B is caused by a DNA-virus, the Hepatitis-B Virus (HBV) which is an Hepadnavirus that infects liver cells. (WHO, 2022). The virus is highly contagious, 50 – 100 times more infectious than Human Immunodeficiency Virus (HIV), and is transmitted between people through blood, semen, vaginal fluids and mucous membranes, hence the most common ways of transmission are by unprotected sex, unsafe blood transfusions, unsafe use of needles, from mother to child at birth, close household contact and between children in early childhood. In 1964, it became possible to identify people with HBV using serological testing, searching for hepatitis B surface antigen (HBsAg) (UI. Haq et al, 2018). With Hepatitis B infection as a significant opportunistic infection among people living with Human Immunodeficiency Virus (HIV) (AIDS Info, 2018), it is more worrisome as the risk of transmitting these infections to other members of the communities is high as they share common modes of transmission.

Knowledge, attitude, and perception (KAP) surveys are often used in determining the health-seeking behavior of any population. The knowledge refers to the understanding of any given topic (Saquib et al, 2019). Attitude refers to their feelings towards this subject, preconceived ideas that they may have as regards to the subject, intention to a specific attitude and tendency to react in a particular way to a certain situation. Perception can be said to be the way things are regarded, understood or interpreted (Mursy et al, 2019). This study aims to assess the levels of knowledge, attitude, and perception related to hepatitis B among students in Sabon -gari L.G.A and the associated factors (socio-demographic factors and history related to hepatitis B) to give room for intervention study if the levels were found to be low. This study expectantly can get the readers to enhance their viewpoint regarding viral hepatitis to improve health outcomes.

Hepatitis B virus (HBV) infection is a serious and common infectious disease of the liver. The World Health Organization (WHO) in 2009 reported HB to infect nearly 2 billion people around the globe. Furthermore, out of those 2 billion, 350 million suffered from chronic, lifelong infection. Moreover, an estimated 15–40% of chronic HB carriers were susceptible to develop liver cirrhosis and hepatocellular carcinoma (WHO, 2022), although hepatitis B screening and vaccination are carried out in some health facilities in Nigeria, it is yet to be incorporated into national health policies like the free counseling and testing for HIV or the mass immunization of children against measles; therefore, bringing problems of hepatitis B awareness, screening, accessibility and affordability which the general public has to battle with. Apart from being expensive and preserve for the rich, the few people who are willing to access it find it difficult to access these screening facilities because of the inadequate and ill-equipped screening centers to cater for their needs.

Media publicity on hepatitis Disease is not substantial compared to those of other infectious diseases. Also, unlike HIV/AIDS, polio, tuberculosis and malaria that have attracted the attention of both government and foreign donors leading to the inflows of monies in developing countries including those of President Bush's 15-billion initiatives and the Global Fund for Malaria, Tuberculosis and HIV/AIDS which Nigeria is part of, health education on HBV activities are extremely limited. This is evident by the fact that schools are not covered and a budgetary allocation in the Ministry of Health is yet to be given to hepatitis B activities since it is not in their topmost health priorities.

In Nigeria, schools are not covered and a budgetary allocation in the Ministry of Health is yet to be given to hepatitis B activities since it is not in their topmost health priorities. Also, Hepatitis B education is inadequate such that even some adolescents and youths do not have adequate opportunity to obtain information about this deadly disease. Teachers that form an authority figure who could influence the direction of health behaviour in secondary schools are not fully informed of the disease implications, mode of transmission, treatments as well as prevention and control. Few studies have been conducted on the knowledge, attitude, and perception of Hepatitis B among senior secondary students. The purpose of this study is therefore to assess the knowledge, attitude, and perception of Hepatitis B among senior secondary students.

Objective of the Study

General objective

The general objective of the study is to assess the knowledge, attitude and perception of Hepatitis B among senior secondary school students in Sabon- Gari Local Government Area.

Specific objectives

1. To assess the level of knowledge of Hepatitis B among senior secondary school students in Sabon- Gari Local Government Area.

2. To assess the perception of Hepatitis B among senior secondary school students in Sabon- Gari Local Government Area.
3. To explore the attitude towards Hepatitis B among senior secondary school students in Sabon- Gari Local Government, Area.
4. To identify factors that can be adopted to improve the knowledge and attitude of Hepatitis B among senior secondary school students in Sabon- Gari Local Local Government Area.

Research Questions

The following research questions were answered in this study:

1. What is the knowledge of Hepatitis B among senior secondary school students in Sabon- Gari LGA, Kaduna State?
2. What is the attitude to Hepatitis B among senior secondary school students in Sabon- Gari Local LGA, Kaduna State?
3. What is the perception of Hepatitis B among senior secondary school students in Sabon- Gari LGA, Kaduna State?
4. What are the strategies that can be employed to improve the knowledge of causes and perception of Hepatitis B among senior secondary school students in Sabon- Gari Local LGA, Kaduna state?

Research Hypotheses

1. There is no significant relationship between senior secondary school student's age and their knowledge of Hepatitis B virus infection.
2. There is no significant relationship between senior secondary school students' class and their knowledge of Hepatitis B virus infection.
3. There is no significant relationship between senior secondary school students' age and their attitude towards Hepatitis B virus infection.
4. There is no significant relationship between senior secondary school students' class and their attitude towards Hepatitis B virus infection.
5. There is no significant relationship between senior secondary school students' age and their perception of Hepatitis B virus infection.

Methods and Material

A cross-sectional descriptive research design was adopted for this study, using the quantitative method. The study was conducted in Sabon-Gari Local Government Area (LGA), one of the 23 LGAs in Kaduna State Nigeria. The Hausa's were the dominant ethnic group in the area. The local government area had 12 wards, each governed by councilors who were coordinated by the central chairman. The study was carried out among public secondary school students' in Sabon-Gari Local Government. The population for this study comprised secondary school students and the he sample size for the study was estimated using the Leslie Kish formula for a single proportion, which was:

The required sample size was calculated using Leslie Kish's formula for single proportion.

$n= z^2Pq/d^2$

Where,

n= Sample size

Z= standard normal deviate, set at 1.96

P= Proportion of interest which is 80% i.e., 0.8 (Tonny et al, April 2021).

d= Degree of accuracy 5% (0.05)

q= The complementary probability of P=1-P

using the above formula,

$$N=\frac{1.96^2 * 0.8(1- 0.8)}{0.05^2}$$

$$= \frac{3.8416 *(0.8*0.2)}{0.0025}$$

$$= 245.8624$$

Assuming 10% non-response rate

$$\frac{10*245.8624}{100}$$

$$= 24.6$$

$$= 245.8624+24.6$$

$$= 270.462$$

Approximately 270
Total minimum sample size is 270
Therefore 135 adolescents were selected randomly from the two schools.
A multistage sampling technique was used for the study

Stage 1: A simple random sampling technique (balloting) was used to select two (2) public secondary schools in Sabon Gari local government Area, Kaduna state which are Government secondary school Dogon Bauchi Zaria and government girls secondary school Chindit.

Stage 2: Systematic random sampling was used to select three classes which are (SSS 1C, SSS 2A, and SSS 3B) from the two schools selected from the Local Government Area for the study.

Stage 3: A simple random sampling technique was used to select one hundred and thirty-five (135) eligible respondents in the two selected schools. The instrument used for the study is structural questionnaire which achieved a completion response rate of 100% (270 out of 270) among the students selected for this study. The study adopted a semi-structured self-administered questionnaire to source information on the knowledge, attitude and perception of Hepatitis B among senior secondary school students in Sabon- Gari Local Government Area. Three research assistants were recruited and extensively trained on research ethics and procedures necessary for the study. Ethical approval was obtained from Kaduna State Ministry of education. A brief explanation of the study was provided to the respondents and verbal consent was obtained from each individual prior their participation. The research instruments were subjected to construct, face and content validity measure for consistency. The instrument's reliability was ascertained using Cronbach's coefficient measure of 0.08. Data was analysed using descriptive statistics and frequency, mean, and percentages were generated, along with inferential statistics of Chi-square test at (p=0.05).

Table 1a: Knowledge of Hepatitis B viral infection N=270

Variables	Frequency	Percent
Have you heard about hepatitis B viral (HBV) infection		
Yes	263	97.4
No	7	2.6
If yes, sources of information		
Parent/family	60	22.2
School	175	64.8
Media	24	8.9
Friends	4	1.5
Is HBV in your state		
Yes	199	73.7
No	19	7.0
I don't know	52	19.3
Do people get HBV from genes (heredity)		
Yes	139	51.5
No	29	10.7
I don't know	102	37.8
Do people get HBV through the air (coughing or staying in the same room		
Yes	113	41.9
No	72	26.7
I don't know	85	31.5
Do people get HBV from sexual relationships		
Yes	149	55.2
No	60	22.2
I don't know	61	22.6
Do people get HBV during birth		
Yes	114	42.2
No	70	25.9
I don't know	86	31.9
Do people get HBV by sharing spoons or bowls for food		
Yes	102	37.8
No	98	36.3
I don't know	70	25.9

Knowledge of Hepatitis B virus infection of the respondents

Tables 1a &1b revealed the knowledge of the respondents on Hepatitis B infection. Virtually all (97.4%) had heard about Hepatitis B infection and the respondents most sources of information (64.8%) were in school. Majority (73.7%) claimed that HBV is in Kaduna state, above half (51.5%) stated that people do get HBV from genetics, that is, by hereditary and slightly below half (41.9%) agreed that people get HBV through the air (coughing or staying in the same room. More than half (55.2%) stated that people get HBV infection from sexual relationships and slightly below half (42.2%) claimed that people get HBV during birth. Slightly below half (37.8%) of the respondents stated that HBV can be gotten by sharing spoon or bowls for food.

Table 1b: Knowledge of Hepatitis B virus infection N=270

Variables	Frequency	Percent
Do people get HBV by eating food that has been fetched by an infected person		
Yes	137	50.7
No	60	22.2
I don't know	73	27.0
Do people get HBV by sharing a toothbrush with an infected person		
Yes	141	52.2
No	70	25.9
I don't know	59	21.9
Do people get HBV by holding hands with an infected person		
Yes	72	26.7
No	137	50.7
I don't know	61	22.6
Does HBV have signs and symptom		
Yes	184	68.1
No	26	9.6
I don't know	60	22.2
Does HBV cause Jaundice in children		
Yes	107	39.6
No	44	16.3
I don't know	119	44.1
Does HBV cause liver cancer		
Yes	101	37.4
No	43	15.9
I don't know	126	46.7
Can someone infected with HBV still look and feel healthy		
Yes	171	63.3
No	52	19.3
I don't know	47	17.4

Knowledge of respondents towards Hepatitis B virus infection

Table 1b above revealed attitude of respondents towards Hepatitis B virus infections. Slightly above half (50.7%) of the respondents stated that people get HBV infection by eating food that has been fetched by an infected person. Little over half (52.2%) people get HBV by sharing a toothbrush with an infected person and less than one quarter (26.7%) Do people get HBV by holding hands with an infected person and majority (68.1%) of the respondents affirmed that HBV have signs and symptom. A few (39.6%) stated that HBV cause Jaundice in children, below half (37.4%) of the respondents believed that HBV causes liver cancer while most (63.3%) of the respondents believed that, someone infected with HBV still look and feel healthy.

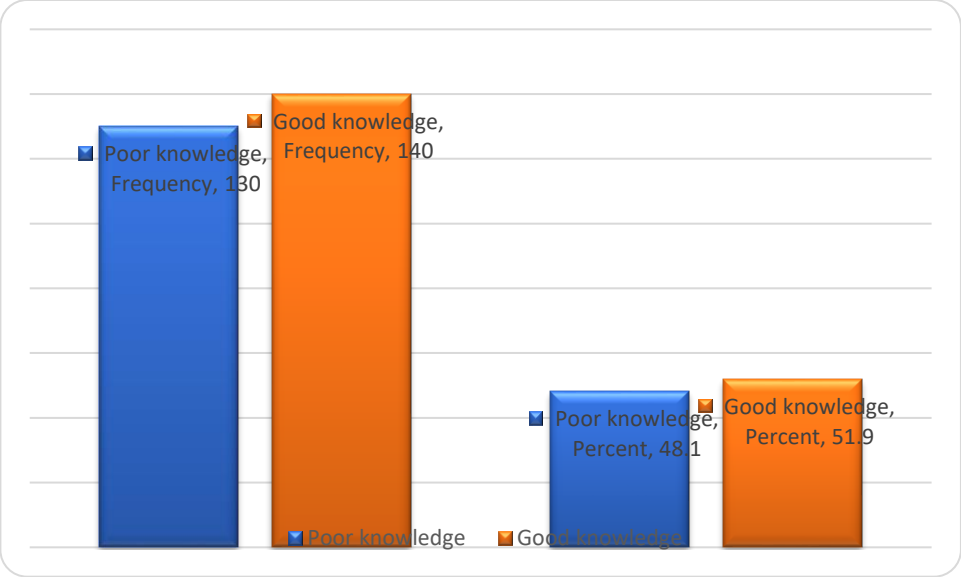

Figure 1: Knowledge score of the respondents

The figure 1 above shows that most (51.9%) of the respondents had good knowledge on Hepatitis B infection and 48.1% had poor knowledge on Hepatitis B viral infection.

Table 3: Attitude of respondents towards Hepatitis B virus infection N=270

Variables	Frequency	Percent
As a healthy person, are you willing to get vaccinated		
Yes	198	73.3
No	42	15.6
I don't know	30	11.1
Do you know the place where one can receive Hepatitis B vaccination		
Yes	44	16.3
No	213	78.9
I don't know	13	4.8
If yes, please name the facility/institution where you received Hepatitis B vaccine		
Government Health Office, Zaria	31	11.5
Ahmadu Bello University Teaching Hospital (ABUTH) Immunization centre	13	4.8
If no, state give reason		
I am not a risk for getting hepatitis B	128	47.4
I don't believe in the hepatitis B vaccine	61	22.6
I think hepatitis B vaccine cost too much	37	13.7
How many doses of hepatitis B vaccine did you receive		
One dose	35	13.0
Two doses	3	1.1
Three doses	6	2.2
Not applicable	226	83.7
Would you be willing to be screened for hepatitis B infection		
Yes	154	57.0
No	74	27.4
I don't know	42	15.6

Attitude of respondents towards Hepatitis B virus infections

Table 2 above revealed attitude of respondents towards Hepatitis B virus infections. Majority (73.3%) stated that healthy people need vaccination. A few (16.3%) of the respondents had received hepatitis B vaccine before and little (11.5%) got vaccinated at Government Health Office Zaria while another few (4.8%) were vaccinated at Ahmadu Bello University Teaching Hospital (ABUTH) Shika Immunization center. Almost half (47.4%) stated that the reason they have not been vaccinated is that they are not at risk of contracting hepatitis HBV infection. Only few (2.2%) of the respondents had three doses (complete dose) of HBV vaccination and 57.0% were willing to be screened for HBV infection.

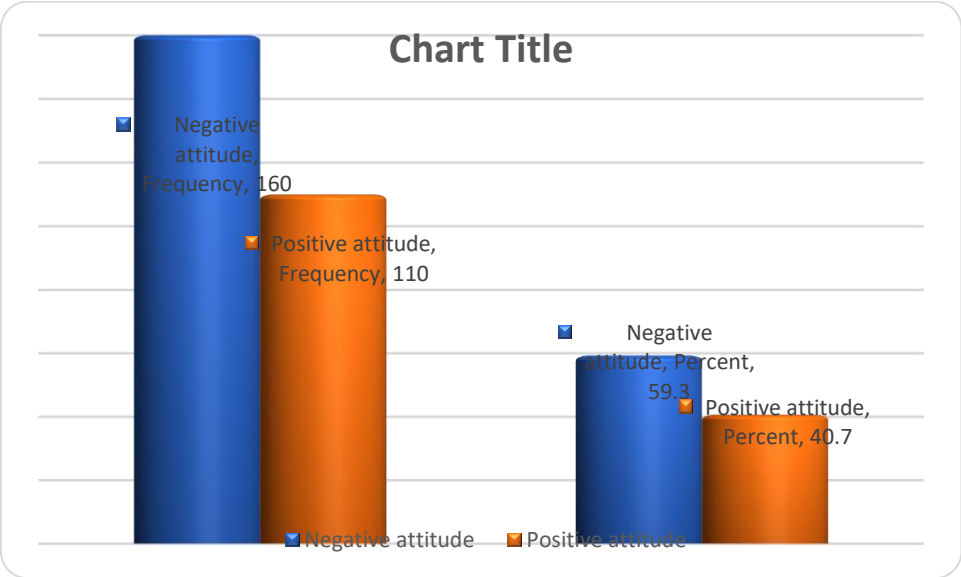

Figure 2: Attitude score of the respondents

Figure 2 above shows that most (59.3%) of the respondents had negative attitude toward Hepatitis B infection and 40.7% had positive attitude toward Hepatitis B infection.

Table 3: Perception respondents on Hepatitis B virus infections N=270

Variables	Frequency	Percent
There is no effective treatment of hepatitis B virus infection		
Yes	84	31.1
No	86	31.9
I don't know	100	37.0
Should infected person with hepatitis B be isolated away from the people to prevent their infection		
Yes	106	39.3
No	116	43.0
I don't know	48	17.8
Regular exercise and eating healthy food can prevent hepatitis B virus infection		
Yes	212	78.5
No	58	21.5
Would you like to know more about hepatitis B		
Yes	217	80.4
No	25	9.3
God forbid	28	10.4
Can you visit someone with Hepatitis B		
Yes	137	50.7
No	69	25.6
God forbid	58	21.5
I don't know	6	2.2
Is HBV cured by spiritualist or by the use of herbs		
Yes	40	15.0
No	176	65.0
I don’t know	54	20.0
Do you know if you need a vaccination at your age		
Yes	180	66.7
No	47	17.4
I don't know	43	15.9

Perception respondents on Hepatitis B virus infections

Table 3 above shows the perception respondents on Hepatitis B virus infections. Less than half Below half (31.9%) of the respondents stated that there is no effective treatment of Hepatitis B infections, slightly below half (43.0%) stated that infected person with hepatitis B should not be isolated away from the people to prevent their infection and another faction (78.5%) claimed that regular exercise and eating health food can prevent hepatitis B virus infection. Majority (65%) of the population claimed that HBV can be cured by spiritualist or by the use of herbs and majority (66.7) know that they need a vaccination at their age.

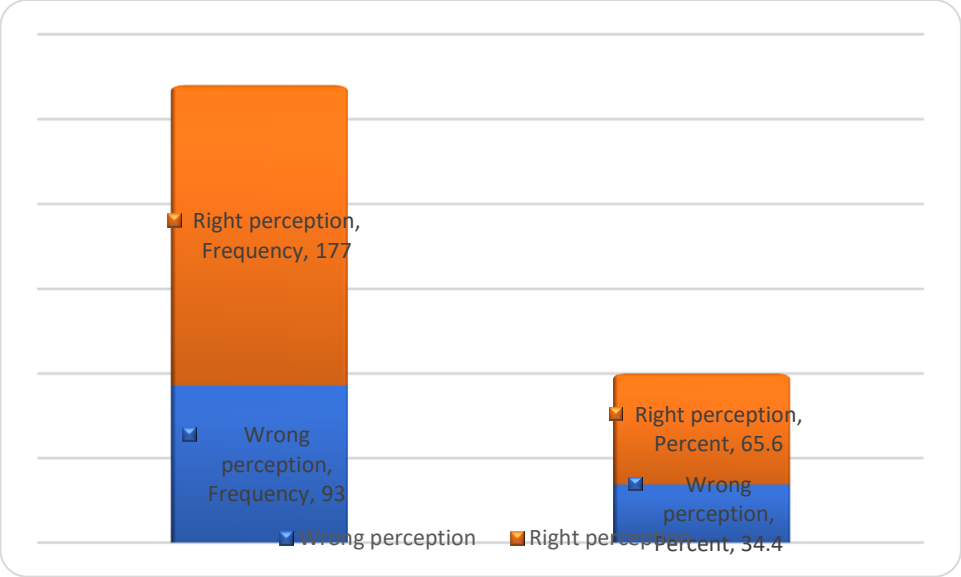

Figure 4: Perception score of the respondents

The figure above shows that majority (65.6%) of the respondents had right perception on Hepatitis B infection and (34.4%) has wrong perception on Hepatitis B viral infection.

Hypotheses testing

Hypothesis 1: There is no significant relationship between age and knowledge of Hepatitis B viral infection among the senior secondary school student.

	Knowledge					
Age	**Poor knowledge**	**Good knowledge**	**Total**	**Df**	**X^2**	**P-Value**
12-14 years	55(44.0%)	70(56.0%)	125(100.0%)	2	2.462	0.292
15-17 years	68(53.1%)	60(46.9%)	128(100.0%)			
≥18 years	7(41.2%)	10(58.8%)	17(100.0%)			

* - Significant at 0.05; *f* - Fisher's Exact Test

There was no significant relationship between age and knowledge of Hepatitis B viral infection among the senior secondary school student. We therefore accept the null hypothesis.

Hypothesis 2: There is no significant relationship between class and knowledge of Hepatitis B viral infection among the senior secondary school students.

	Knowledge					
Class of study	**Poor knowledge**	**Good knowledge**	**Total**	**Df**	**X^2**	**P-Value**
SS1	67(50.0%)	67(50.0%)	134(100.0%)	2	4.683	0.096
SS2	34(39.5%)	52(60.5%)	86(100.0%)			
SS3	29(58.0%)	21(42.0%)	50(100.0%)			

* - Significant at 0.05; *f* - Fisher's Exact Test

There was no significant relationship between class of study and knowledge of Hepatitis B viral infection and class of study among the senior secondary school students. Therefore, the null hypothesis is accepted.

Hypothesis 3: There is no significant relationship between age and perception of Hepatitis B viral infection among the senior secondary school students.

	Perception					
Age	**Wrong perception**	**Right perception**	**Total**	**Df**	**X^2**	**P-Value**
12-14 years	36(28.8%)	89(71.2%)	125(100.0%)	2	3.422	0.181
15-17 years	51(39.8%)	77(60.2%)	128(100.0%)			
≥18 years	6(35.3%)	11(64.7%)	17(100.0%)			

* - Significant at 0.05; *f* - Fisher's Exact Test

There was no significant relationship between age and perception of Hepatitis B viral infection among the senior secondary school students. Therefore, the null hypothesis is accepted

Hypothesis 4: There is no significant relationship between age and attitude of Hepatitis B viral infection among the senior secondary school students.

	Attitude					
Age	**Negative attitude**	**Positive attitude**	**Total**	**Df**	**X^2**	**P-Value**
12-14 years	66(53.2%)	58(46.8%)	124(100.0%)	2	3.733	0.155
15-17 years	83(64.8%)	45(35.2%)	128(100.0%)			
≥18 years	11(64.7%)	6(35.3%)	17(100.0%)			

* - Significant at 0.05; *f* - Fisher's Exact Test

There was no significant relationship between age and attitude of Hepatitis B viral infection among the attitude of senior secondary school students. We therefore accept the null hypothesis

Hypothesis 5: There is no significant relationship between class of sudy and attitude of Hepatitis B viral infection among the senior secondary school students.

	Attitude					
Class of study	**Negative attitude**	**Positive attitude**	**Total**	**Df**	**X^2**	**P-Value**
SS1	85(63.2%)	49(36.8%)	134(100.0%)	2	9.999	0.008*
SS2	40(46.5%)	46(53.5%)	86(100.0%)			
SS3	36(72.0%)	14(28.0%)	50(100.0%)			

* - Significant at 0.05; *f* - Fisher's Exact Test; NR – Not applicable

There is significant relationship between current class of study and attitude of Hepatitis B viral infection among the senior secondary school students. The SS2 students seem to have a positive attitude towards Hepatitis B viral infection and SS3 had the highest level of negative attitude towards Hepatitis B viral infections. We therefore reject the null hypothesis.

Conclusion

The study sheds light on the knowledge attitude and perception of Hepatitis B Virus (HBV) infection among senior secondary school students in Sabon-Gari Local Government Area, Kaduna State. The findings highlight the urgent need for targeted educational interventions to address negative attitude and improve knowledge and perception regarding HBV transmission and prevention. Incorporating comprehensive health education programs into school curricula is essential to equip students with accurate information and promote frequent vaccine utilization well as prevention and control of HBV infection in schools.

Recommendation

The following recommendations are made based on the findings of this study

1. More schools and communities need more health promotion and education and awareness using information and communication media on the implications of Hepatitis B virus infection.
2. More schools and communities should be vaccinated to prevent the spread and prevent the complications of Hepatitis B infection.
3. More funds should be invested to vaccination and giving of free drugs to the affected persons.
4. The use of electronic media to disseminate factual information on the need to promote positive attitude towards Hepatitis B vaccine.

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