



## Original Article

# Knowledge of Hepatitis B Infection and Perception of Vaccination Among Undergraduate Students of Al-Hikmah University, Ilorin

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### ABSTRACT

**Background:** Hepatitis B infection is a major public health problem globally; the leading aetiology of cirrhosis and liver cancer; of which economic impact is particularly significant in developing countries like Nigeria. Yet, the uptake of full doses of vaccine is low especially among students of tertiary institutions.

**Objective:** Aim of this study was to assess HBV infection knowledge status of undergraduate students of Al-Hikmah University and their perception to vaccination.

#### Keywords:

HBV infection

Knowledge

Perception

Vaccination

**Method:** Descriptive cross-sectional study among 202 undergraduate students of Al-Hikmah University Ilorin, selected through simple random techniques. Quantitative method was adopted using adopted, self-administered questionnaire. Data was analysed using SPSS 25.

**Results:** Cumulatively, 65.2% of the participants had good knowledge of HBV infection. 83.2% knew at least one or more route of HBV transmission. 83.7% knew at least one or more complications of HBV disease. Only 10.4% had taken at least one dose of HBV vaccine with just 7.4% had taken complete doses of HBV vaccine. No statistical association exists between knowledge of HBV infection and uptake of vaccine.

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**Conclusion:** This study shows urgent need for intervention targeted at raising awareness about HBV vaccine and its uptake among undergraduate students.

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### Introduction

Hepatitis B infection is regarded as a major public health problem globally; the leading aetiology of cirrhosis and liver cancer (Hsu et al; 2023); of which economic impact is particularly significant in developing countries like Nigeria (Alyobi & Jan, 2023).

Hepatitis B virus infection is regarded as potentially life-threatening as it can lead to chronic and debilitating health conditions including cirrhosis and liver cancer, and also death (CDC 2019; WHO 2019). The risk of developing chronic hepatitis B infection

depends solely on the age at which an individual is infected. For instance, the Centre for Disease Control, CDC estimated that 90% of infected infants will become chronically ill compared to 2%– 6% of those who are infected as adults (Adam & Fusheini 2020). Vaccination is widely recognized as the most effective strategy for preventing Hepatitis B infection (World Health Organization, 2025; Lok et al., 2025); however, its success largely depends on individuals' knowledge of the disease and their perception of the safety, efficacy, and necessity of the vaccine. In many developing countries, gaps in knowledge and negative

perceptions toward vaccination have contributed to low vaccine uptake among university students. Understanding the knowledge of causative agent of Hepatitis B infection and the perception of vaccination among undergraduates is therefore essential for designing targeted health education programs, improving vaccination coverage, and ultimately reducing the burden of Hepatitis B infection within the university community and the wider society. This study aims to:

1. Examine the knowledge of Causative agent of Hepatitis B infection among undergraduate students of Al-Hikmah University, Ilorin.
2. Assess the level of perception of undergraduate students towards HBV vaccination
3. Investigate association between knowledge of HBV infection and perception of undergraduate students towards vaccination against hepatitis B infection.

#### Null Hypotheses

$H_01$ : Undergraduate students of Al-Hikmah University do not have knowledge of causative agent of Hepatitis B infection.

$H_02$ : Undergraduate students of Al-Hikmah University do not have poor perception of vaccination against Hepatitis B infection.

$H_03$ : There is no association between the level of knowledge about Hepatitis B infection and perception towards vaccination among Undergraduate Students of Al-Hikmah University, Ilorin

#### Materials and Methods

##### Study Area

Al-Hikmah University, the first Islamic faith-based university in Nigeria, is located at Adewole area of Ilorin West Local Government, Ilorin Kwara state.

Knowledge of HBV infection in Nigerian Universities In Nigeria, Elegbede et al., (2022) conducted a study in a private university in Ekiti state and reported that high proportion of the students, 77.6% had a good knowledge of HBV vaccine but only 26.9% had taken one or more doses of hepatitis B vaccine. The study further indicated that studentship in the college of science, and good knowledge of hepatitis B vaccine are associated with uptake of vaccine among the respondents. The undergraduate students of Abubakar Tafawa Balewa University, Bauchi had a high level of awareness of both Hepatitis B and C infection with 86.8% of the respondents fully aware but still, 54.6% did not know their HBV status (Obed et al., 2020).

Perception of HBV infection Vaccination among Students

A study on the perception to vaccination among students by Ayeni et al. (2025) assessed the perception and willingness to undergo vaccination among

undergraduates in health-related courses in a tertiary institution, Lagos, Nigeria and concluded that 64.6% showed a positive perception towards Hepatitis B and vaccination by expressing willingness to be vaccinated. The study went further by establishing a statistical association between positive perception to vaccination and gender; and faculty of study. Also, Adenlewo et al., (2017) conducted a cross-sectional study among medical and dental students on perception and practice of prevention strategies against hepatitis B virus infection in a Nigerian university and found that 82.3% of the study participants had received at least a dose of hepatitis b vaccine while 79.65% completed the three doses. Majority of those who had not received the vaccine cited their busy schedule as the reason for their failure to be vaccinated.

#### Gaps in the Literature

From the above, studies by Elegbede et al. (2022), Obed et al. (2020), Timbiri et al. (2024) were conducted in private university in Ekiti state, Abubakar Tafawa Balewa University, Bauchi State, and Edo State. Likewise, studies on perception to HBV Infection by Ayeni et al. (2025) and Naqid et al. (2023) were carried out in Lagos State and Iraq respectively, which shows a location gap. Hence, this study was conducted in Kwara State. The study also identified conceptual and population gaps in the work of Raufu et al. (2022) which focused on the seroprevalence of HBV infection among scavengers in Kwara State. Ilochi et al. (2024) study was on prevalence of HBV/TB coinfection in Kwara State. Also, Bello et al. (2019) worked on incidence rate of HBV Infection among undergraduate students in public tertiary institution in Kwara South, Nigeria. Ndako et al. (2022) gave account of seroprevalence of hepatitis B infection among pregnant women in North Central, Nigeria. Hence, the present study focused on HBV infection knowledge of undergraduate students of Al-Hikmah University and their perception of vaccination and the population was undergraduate students.

#### Ethical Considerations, Informed Consent and Confidentiality

Ethical approval was obtained from the Health Research Ethics Committee of Al-Hikmah University, Ilorin, Kwara, Nigeria, with Reference Number: HUI-FHS-ERC-25-0040. Oral consent was obtained from the participants and a statement confirming that participants had understood the "participant information sheet" and consented to the study was included as a tick box on the questionnaire. The

participants were also assured of absolute confidentiality.

### Study Instrument and Measures

This study assessed HBV infection knowledge of undergraduate students of Al-Hikmah University and their perception to vaccination. The research was a descriptive cross-sectional design. The study population was 5,865 undergraduate students for 2024/2025 academic session (ICT-HUI, 2025). Quantitative method was adopted using adopted self-administered questionnaire and simple random sampling adopted. The tool used in this study for the data collection was an adopted Knowledge of Hepatitis B Infection and Perception to Vaccination Among Undergraduate Students of Al-Hikmah

Table 1: Knowledge of Causative agent of HBV Infection among Undergraduate Students				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Virus	161	79.7	79.7
	Bacteria	41	20.3	100.0
Total	202	100.0		

Source: SPSS Computation, 2025

Table 1 shows the response on level of knowledge of causative agent of Hepatitis B infection among undergraduate students of Al-Hikmah University, Ilorin-Nigeria. The result shows that 161 of the respondents about 79.7% have knowledge of virus as causative agent of HBV, while 41 of the respondents

University, Ilorin questionnaire (KHPVQ) with a 32 item statements. The validity of the instrument was done with a reliability at Cronbach's alpha of 0.79. Data analysis was by frequency and percentage to present the demographic information of the respondents and answer of the research questions. Pearson Product-Moment Correlation Statistics (PPMS) was used to test hypotheses at 0.05 level of significance. IBM Statistical Package for Social Science (SPSS) version 25 was used for data process and results.

### Results

Research Question 1 What is the Knowledge of causative agent among students of Al-Hikmah University about Hepatitis B infection?

representing 20.3% have knowledge of bacteria as the cause of HBV.

Research Question 2: What is the perception towards HBV vaccination among undergraduate students of Al-Hikmah University, Ilorin-Nigeria?

Table 2: Perception Towards HBV Vaccination among undergraduate students of Al-Hikmah University, Ilorin-Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Have you been vaccinated against HBV?	21	10.4	10.4	10.4
I have received the complete doses of vaccine	15	7.4	7.4	17.8
I have no complete my doses	15	7.4	7.4	25.2
I have not been vaccinated at all	13	6.4	6.4	31.7
I dont know there is vaccine for HBV	8	4.0	4.0	35.6
I know there is vaccine but its expansive	16	7.9	7.9	43.6
I know there is vaccine but its not save	26	12.9	12.9	56.4
I know there is vaccine but its not effective	25	12.4	12.4	68.8
i know there is vaccine but i am scared	29	14.4	14.4	83.2
I know there is vaccine but i'm busy	34	16.8	16.8	100.0
Total	202	100.0	100.0	

Source: SPSS Computation, 2025

Table 2 shows response to the perception to HBV vaccination among undergraduate students of Al-Hikmah University, Ilorin-Nigeria. The outcomes reveal that 21(10.4%) of the respondents have been vaccinated against HBV. 15(7.4%) of the respondents answered that they have received the complete doses of vaccine. Additionally, another 15(7.4%) of the respondents answered that they have not completed their doses, while 13(6.4%) of the respondents answered that they have not been vaccinated at all. Similarly, 8(4.0%) of the respondents answered that they don't know there is vaccine for HBV. 16(7.9%) of the respondents answered that they know there is vaccine but it's expensive. Furthermore, 26(12.9%) of

the respondents answered that they know there is vaccine but it's not safe. 25(12.4%) of the respondents answered that they have the knowledge that there is vaccine but it's not effective. However, 29(14.4%) of the respondents answered that they know that there is vaccine but they were scared, while 34(16.8%) of the respondents answered that know there is vaccine but they were busy.

#### Testing of Hypotheses

$H_01$ : Undergraduate Students of Al-Hikmah University have no significant knowledge of causative agent of Hepatitis B infection

**Table 3: Relationship between Undergraduate Students Knowledge and Vaccination of Hepatitis B infection**

	N	Mean	SD	df.	r-cal.	Sig. (p)	Decision
Students' Knowledge	202	4.10	1.010	201	0.453	.000	Rejected
Causative of Hepatitis B Infection	202	22.98	4.997				

Source: SPSS Computation, 2025

Table 3 showed that the calculated r-value of 0.45. The calculated p-value of 0.00 is greater than (r.cal.=0.45;  $p < 0.05$ ) level of significant. Thus, the hypothesis one is rejected. The result showed that, there was a significant knowledge of causative agent of Hepatitis

B infection among undergraduate students of Al-Hikmah University, Ilorin.

$H_02$ : Undergraduate students of Al-Hikmah University have no significant Poor Perceptions towards vaccination against Hepatitis B infection

**Table 4: Association between Perceptions of Undergraduate Students and Vaccination against HBV**

	N	Mean	SD	df.	r-cal.	Sig. (p)	Decision
Students' Perception	202	6.27	3.055	201	.436	.000	Rejected
Vaccination of HBV	202	22.98	4.997				

Source: SPSS Computation, 2025

Table 4 showed that the calculated r-value of 0.44. The calculated p-value of 0.00 is less than 0.05 level of significant ( $r.cal. = 0.44$ ;  $p > 0.05$ ). Thus, the hypothesis two is rejected. The result showed that, there was a significant poor perception of undergraduate students towards vaccination against hepatitis B infection.

$H_03$ : There is no significant association between knowledge and perception towards vaccination among Undergraduate Students of Al-Hikmah University, Ilorin

**Table 5: PPMC of Association between Level of Knowledge and Perception towards vaccination among Undergraduate Students of Al-Hikmah University, Ilorin**

	N	Mean	SD	df.	r-cal.	Sig. (p)	Decision
Students' Knowledge	202	4.10	1.010	201			Not Rejected
Perception to Vaccination of HBV	202	6.27	3.055				

Source: SPSS Computation, 2025

Table 5 shows that the calculated r-value of -0.15. The significant level is 0.07. The significant level of 0.07 is greater than 0.05 ( $r.cal. = -0.15$ ;  $p > 0.05$ ). Thus, the hypothesis three is not rejected, which indicated that,

there is no significant association between level of knowledge and perception towards vaccination among undergraduate students.

### Discussion of Key Findings

The study showed that there was a significant knowledge of causative agent of Hepatitis B infection among undergraduate students of Al-Hikmah University, Ilorin. However, this study finding is in contrast to the results of Obed et al, (2020) who showed that the level of knowledge of HBV among the majority of undergraduates of the University of Benin assessed in the year 2024 was poor. Similarly, Timbiri (2024) submitted that the students' poor knowledge of HBV could be because many of them may not have been vaccinated.

The study indicated that there was a significant poor perception of undergraduate students towards vaccination against hepatitis B infection. The calculated correlation coefficient ( $r.cal. = 0.44$ ) indicates a weak students' perception and the factors examined. This is also in contrast with the finding of Ayeni et al. (2025) whose study demonstrated positive perceptions towards both Hepatitis B and vaccination among respondents.

The study revealed that there was no significant association between knowledge of HBV infection and perception of undergraduate students towards vaccination against hepatitis B infection. The calculated correlation coefficient ( $r.cal. = -0.15$ ) shows a very weak and negative relationship, while the p-value ( $p > 0.05$ ) confirms that the relationship is not statistically significant. This means that knowledge students about causative agent of HBV Infection does not necessarily influence their perception toward receiving HBV vaccination. This is in agreement with Elegbede et al. (2022) who found out that just a little over a quarter (26. 9%) of the respondents have taken one or more doses of hepatitis B vaccine (Elegbede et al., 2022). It is also in agreement with Naqid et al. (2023) whose study shows that more than half of the students were not vaccinated despite good knowledge demonstrated by higher number of the students. However, this study is in contrast with the findings of Adenlewo et al. (2017) in a study conducted in a Nigerian University among medical and dental students in which over eighty percent (83.2%) of the participants had at least a dose of the HBV vaccine while 79.65% completed the 3 doses.

### Conclusion

The study was a descriptive cross sectional which adopted self-administered questionnaire to assess level of knowledge and perception of Undergraduate students of Al-Hikmah University on HBV and vaccination. The students demonstrated knowledge of HBV infection with poor perception to vaccination which infers no association between knowledge and perception.

### Recommendations

1. University managements should adopt continuous public health education and sensitization programmes to ensure that all undergraduate students have adequate and accurate information, especially on causative agent of HBV Infection.
2. University management should set aside a course free period to allow undergraduate students go for HBV tests and vaccinations as most of them complain that busy schedules prevent them from HBV vaccination. This will change their poor perception toward HBV vaccination.
3. Public health students should be allowed to have a day for public campaign specifically on the dangers of HBV to liver, cirrhosis, or liver cancer.

### Public Health Impact

Discovery of knowledge of causative agent of HBV infection among undergraduate students of Al-Hikmah University, Ilorin-Nigeria underscores the need for public health practitioners to intensify their efforts on comprehensive health education and vaccination campaigns within the university. Providing accurate information through seminars, workshops, and peer education, alongside offering free or subsidised vaccination programmes in the campus, would likely improve students' perceptions and increase vaccination uptake against HBV infection.

### Conflict of Interest

The author has no conflict of interest to disclose.

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