ORIGINAL ARTICLE

Prevalence, Knowledge, Attitude and Practices of Hepatitis B Virus Infection among Undergraduate Students in a Private Universuty in Abuja, Nigeria

Ogunkoya Oluseun Funke[1], Muhammad Baba Salihu[1], Muhammad-Taaha Nabeelah[1]

ABSTRACT

Despite the widespread awareness of Hepatitis B virus, there still arises significant knowledge gaps, risky behaviors and poor vaccination coverage among university students. This study aims to determine the prevalence of hepatitis B virus (HBV) infection among undergraduate and to assess their knowledge, attitudes, risk factors, awareness, and vaccination status, with the goal of providing evidence-based recommendations for HBV prevention and control. This descriptive, cross-sectional study was conducted among 250 undergraduate students of Baze university in Abuja, Nigeria, selected through simple random sampling, between February and July of 2025. Data were collected using a structured, pre-tested questionnaire covering socio-demographics, medical history, behavioral risk factors, knowledge, and awareness of HBV. In addition, participants were screened for hepatitis B surface antigen (HBsAg) using a rapid immunochromatographic test kit (Labacon), with confirmatory testing performed for positive results. Of the 250 students screened, only one (0.4%) tested positive for HBV. Awareness was high, with 96% of respondents reporting knowledge of HBV, and 80.4% identifying the virus as the causative agent. However, significant misconceptions persisted, particularly regarding modes of transmission; 10.8% believed HBV could spread through casual contact, and 14.8% cited contaminated food or water. While 72% were aware of the availability of an HBV vaccine, only 38% were fully vaccinated and 50.8% remained unvaccinated. Notably, 75.6% expressed willingness to undergo free screening, and 82% recognized that university students are at heightened risk. Despite high levels of awareness, knowledge gaps and low uptake of vaccination and testing persist among university students, underscoring the need for targeted educational interventions, on-campus vaccination drives, and routine screening programs to reduce HBV risk in this population.

Keywords: Hepatitis B virus, university students, vaccination, awareness, risk factors

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INTRODUCTION

Viral hepatitis has become a significant global health concern, impacting hundreds of millions of people worldwide, with a notable prevalence among teenagers and tertiary institution students [1]. Viral hepatitis contributes significantly to global morbidity and mortality, arising from both acute infections and long-term complications such as chronic active hepatitis and cirrhosis, particularly in cases of hepatitis B, C, and D. Hepatitis B virus (HBV) and hepatitis C virus cause 96% of the mortality from this viral hepatitis. [2]

The global prevalence of HBV surface antigen (HBsAg) is estimated at 3.61%, with the highest rates in the Western Pacific (5.26%), and Africa (8.83%) [3] Nigeria, in Sub-Saharan Africa, is hyper-endemic for HBV infection [4] with an average approximately 19 million people are living with HBV infection with prevalence rate ranging from 11% to 13% [5] and a reported prevalence of 4.8% in Abuja [6].

Hepatitis B virus (HBV) is a member of the hepadnavirus group, double-stranded DNA viruses and replicate, unusually, by reverse transcription. The replication of HBV occurs in

1. Department of Medical Laboratory Science, Faculty of Allied Health Sciences, College of Health Sciences, Baze University, Abuja, Nigeria.

Correspondence to: Ogunkoya Oluseun Funke, Department of Medical Laboratory Science, Faculty of Allied Health Sciences, College of Health Sciences, Baze University, Abuja, Nigeria. Email: oluseun.ogunkoya@bazeuniversity.edu.ng

the liver cells (hepatocytes), causing damage and potentially leading to death [7] [8].

Chronic hepatitis B infection is the leading cause of liver cirrhosis and hepatocellular carcinoma, with over 248 million people living with chronic HBV infection globally. [3]. The incubation period of hepatitis B is variable with a range of 1 to 6 months. Persistent carriage of hepatitis B, defined by the presence of hepatitis B surface antigen (HBsAg) in the serum for more than six months, have been estimated to affect about 350 million people worldwide[9]. The condition can be self-limiting or can progress to fibrosis (scaring), cirrhosis or liver cancer.

World Health Organization has identified specific actions to prevent viral hepatitis in its "2030 Agenda for Sustainable Development Goals" to include implementation of prevention and control strategies for viral hepatitis such as raising awareness through public education, vaccination, blood transfusion safety strategies, and early diagnosis.[2] However, these are still far from achievable in Nigeria especially among students of tertiary institutions. High out-of pocket costs further exacerbate the issue, making HBV a critical public health threat.

Students in tertiary institutions are exposed to several risk factors that predispose them to Hepatitis B virus (HBV) infection. One of the most significant is unprotected sexual activity, particularly with multiple partners, which is a major route of transmission, owing to the fact that most of the tertiary students are young adults and often at the peak of sexual activity and experimentation, hence increases the risk to exposure [10]. In addition, overcrowded hostel environments also encourages the sharing of personal items such as razor blades, clippers, needles, or even toothbrushes is a common practice in hostels and salons, further increasing the risk. Although less prevalent in some settings, intravenous drug use and needle sharing represent another important behavioral risk. Substance and alcohol use may also impair judgment, thereby promoting unsafe sexual practices and other risky behaviors. Compounding this problem is the fact that a large proportion of students have not been screened or vaccinated against HBV, leaving them highly vulnerable[11]. Practices such as body piercing and tattooing, when performed with unsterilized equipment, are potential transmission routes. Similarly, traditional procedures like scarification and circumcision, often carried out with non-sterile instruments, present additional dangers. Gender differences have also been reported, with males sometimes showing a higher prevalence of infection, possibly due to greater engagement in high-risk practices. Many students have limited understanding of HBV transmission dynamics, often assuming it occurs only through blood transfusion, while underestimating sexual and household routes. Compared to HIV/AIDS, hepatitis B is frequently perceived as a less serious threat, despite being more infectious.[12] Limited access to screening and vaccination programs in many tertiary institutions further exacerbates this problem, leaving a significant number of students unprotected.[12] Terefore, this study aimed to determine the prevalence of hepatitis B virus (HBV) infection among students of Baze University, assess their knowledge and attitudes, identify major risk factors, evaluate their awareness and vaccination status, and generate evidence-based recommendations for HBV prevention and control.

METHODS

This cross-sectional, descriptive study was conducted between February and July of 2025, at Baze University, Abuja, Nigeria. Baze University is a private university, which offers a wide range of undergraduate and postgraduate programs through several faculties. Our study population consists of all undergraduate students enrolled at Baze University during the research period. The study population comprised undergraduate students from various departments from Medical laboratory science, law, computer science, psychology, public health, engineering, medicine, radiography and so on. Registered undergraduate students of Baze University aged 18 years and above who consented for this study were enrolled. Students who did not fill out completely the questionnaire and postgraduate students and staff were not included in this study. Finally, a total of 250 students were recruited for the study. The sample size was determined using Cochran's formula to be approximately 115 students. However, to enhance the reliability and generalizability of the findings, reduce sampling error, and ensure representation across various student demographics and faculties, the actual sample size was increased to 250 students. Participants were selected using simple random

sampling to ensure adequate representation across faculties and academic levels. A structured, self-administered questionnaire was used to collect data on socio-demographic characteristics, medical history, behavioral risk factors, awareness, knowledge, and vaccination status related to Hepatitis B virus (HBV). The questionnaire was pre-tested among a small group of students outside the study population for clarity and reliability before administration.

Laboratory Screening for HBV: Each participant underwent screening for HBV infection. Approximately 5 mL of venous blood was collected under aseptic conditions. Serum was separated and tested for Hepatitis B surface antigen (HBsAg) using commercially available rapid immunochromatographic test kit (Labacon). This test strip has a sensitivity of 96.2% and specificity of 99.3%. Positive samples were confirmed by repeat testing to ensure accuracy.

Completed questionnaires were coded and entered into the computer for analysis. Analysis was done using the Statistical Package for Social Sciences (SPSS) version 20.0 for windows. Descriptive statistics (frequencies, percentages, and charts) were generated for all variables. Data were represented in percentages and frequency tables..

RESULTS

A total of 250 students participated in the study. They were screened for Hepatitis B virus. Out of the total participants, only 1 student (0.4%) tested positive for HBV, while 248 students (99.2%) tested negative (Table 1). The majority of respondents (53.3%) were aged 20–24 years, followed by 15–19 years (35.2%), while smaller proportions were aged 25–29 years (4.9%) and 30 years and above (6.6%). Females constituted 60.0% of the study population, whereas males accounted for 40.0%. Most of the students were single (91.8%), with only 8.2% being married. With respect to faculty distribution, 34.8% were enrolled in Medical Laboratory Sciences, 30.0% in Medicine, 24.0% in Applied Sciences, and 11.2% in other faculties. Regarding academic level, the highest proportion of participants were in 300 Level (33.2%) and 400 Level (30.4%), followed by 200 Level (20.8%), 100 Level (10.0%), and 500 Level (5.6%). Ethnic distribution showed that Hausa students formed the largest group (23.8%), followed by Igbo (15.6%), Yoruba (9.8%), Fulani (9.0%), Ijaw (5.7%), Kanuri (4.1%), Ibibio (2.5%), Urhobo (2.5%), while 27.0% belonged to other ethnic groups. In terms of religion, more than half of the respondents (54.1%) were Muslims, 43.4% were Christians, and 2.5% reported other faiths (Table 2). A total of 6.8% of respondents reported a history of liver disease, while 5.2% had experienced jaundice. Blood transfusion was uncommon, reported by only 5.2% of participants. Surgical history was documented in 17.6% of respondents, and 40.4% reported prior hospitalization. The prevalence of chronic diseases was relatively low (6.8%), while 39.6% of participants had undergone dental procedures such as tooth extraction. Overall, the findings suggest that most participants had limited exposure to established clinical risk factors for HBV infection (Table 3). The findings from the HBV knowledge assessment demonstrate that overall awareness of hepatitis B virus among participants was high, with 96% having heard of the infection. Books and school (32%) and media outlets (25.2%) were the predominant sources of information, underscoring the influence of both formal and mass education. Despite this awareness, deeper knowledge was variable; only 20.8% rated their knowledge as very good, while a majority (34%) described it as average. Correct understanding of the cause and organ affected was relatively high, with 80.4% identifying HBV as viral and 95.2% linking it to the liver, though misconceptions such as bacterial causation (3.6%) and kidney or lung involvement persisted. Transmission knowledge was mixed: while most recognized sexual contact (70.4%), sharing needles (73.2%), and blood transfusion (69.6%) as risks, misconceptions about casual contact (10.8%) and contaminated food or water (14.8%) highlight gaps that could perpetuate stigma. Encouragingly, 89.2% correctly linked HBV to liver disease, but only half were aware that infection can be asymptomatic. Awareness of vaccination was high (72%), yet actual uptake was low, with just 38% fully vaccinated and 50.8% not vaccinated at all, often citing lack of availability, fear of side effects, or lack of perceived need. While nearly half had undergone HBV testing (46%), willingness to participate in free screening was strong (75.6%). Also majority (82.0%) believed that university students are at high risk of getting infected by HBV and that the university provides adequate information on HBV prevention (78.8%) (Table 4). With respect to sexual activity, 25(10%) of respondents admitted to engaging in unprotected sexual intercourse, 215 (86%) denied

this practice. A small group 10(4%) preferred not to disclose. Sharing of personal items like towels, tooth brushes was reported by 50(20%) of students. The majority 200(80%) did not engage in sharing items. A smaller proportion, 30(12%), reported having tattoos or body piercings with potentially non-sterile equipment. The majority 220(88%) reported no such practice. 25(10%) indicated having Multiple sexual partners while 225(90%) did not have Multiple sexual partners. 31 (12.4%) reported to have shared shaving insturments while 219 (87.6%) did not share shaving instruments (Table 5).

Table 1: Prevalence of HBV among Baze University students (n=250)

Test results	Frequency	Percentage
Positive	1	0.4%
Negative	248	99.2%
Total	250	100%

Table 2: Socio-demographic characteristics of respondents (n=250)

Variable	Category	Frequency	Percentage
Age Group			
	15-19	43	35.2
	20-24	65	53.3
	25-29	6	4.9
	30 and above	8	6.6
Gender			
	Male	100	40.0
	Female	150	60.0
Marital Status			
	Single	230	91.8
	Married	20	8.2
Faculty			
	Medicine	75	30.0
	Medical Lab Sciences	87	34.8
	Applied Sciences	60	24.0
	Others	28	11.2
Academic Level			
	100 Level	25	10
	200 Level	52	20.8
	300 Level	83	33.2
	400 Level	76	30.4
	500 Level	14	5.6
Ethnicity			
	Hausa	60	23.8
	Igbo	40	15.6
	Yoruba	24	9.8
	Fulani	22	9.0
	Ibibio	6	2.5
	Urhobo	6	2.5
	Kanuri	10	4.1
	Ijaw	14	5.7
	Others	68	27.0
Religion			
	Islam	136	54.1
	Christianity	108	43.4
	Others	6	2.5

Table 3: Medical history of respondents (n=250)

Variable	Category	Frequency	Percentage
Ever had liver disease			
	Yes	17	6.8
	No	233	93.2
Ever experienced jaundice			
	Yes	13	5.2
	No	237	94.8
Ever had blood transfusion			

Variable	Category	Frequency	Percentage
	Yes	13	5.2
	No	237	94.8
Surgical operation			
	Yes	44	17.6
	No	206	82.4
Ever hospitalized			
	Yes	101	40.4
	No	149	59.6
Chronic disease			
	Yes	17	6.8
	No	233	93.2
Dental procedures (e.g., extraction)			
	Yes	99	39.6
	No	151	60.4

Table 4: Knowledge, awareness, and vaccination status of HBV of respondents (n=250)

Variable	Category	Frequency	Percentage
Heard of HBV			
	Yes	240	96.0
	No	10	4.0
Sources of Information			
	Media (TV/Radio)	63	25.4
	Books/School	80	32
	Friends/Peers	30	12.0
	Journals	6	2.5
	Others	71	28.5
Self-Rated Knowledge of HBV			
	Very Good	52	21
	Good	75	30
	Average	85	34
	Poor/None	38	15
Knowledge of HBV Cause			
	Virus *(Correct)*	201	80.4
	Bacteria *(Incorrect)*	9	3.6
	Don't Know	40	16.4
Organ Primarily Affected by HBV			
	Liver *(Correct)*	238	95.5
	Kidney	7	2.8
	Lungs	5	2
Transmission Modes			
	Unprotected Sex	176	70.5
	Sharing Needles/ blade, sharp objects	183	73
	Mother-to-Child	131	52.4
	Casual Contact	27	10.8
	Blood transfusion	174	69.6
	Sharing personal items like towels, toothbrush	115	46.0
	Coughing/ sneezing	39	15.6
	Contaminated food or water	37	14.8
	Don't Know	33	13.2
HBV Leads to Liver Disease			
	Yes	223	89.2
	No	27	10.8
Can Hepatitis B Infection Be Asymptomatic?			
	Yes	125	50
	No	20	8
	Don't Know	105	42
Is there a vaccine for Hepatitis B?			
	Yes	180	72
	No	5	2
	I don'know	65	26
Vaccination Status			

Variable	Category	Frequency	Percentage
	Fully Vaccinated	95	38
	Partially Vaccinated	28	11.2
	Not Vaccinated	127	50.8
Why have you not been vaccinated?			
	Lack of availability	33	13.2
	High cost	7	2.8
	Fear of side effects	33	13.2
	I have immune defense	5	2.0
	No reason	188	75.2
	I do not believe I need it	32	12.8
Ever Tested for HBV			
	Yes		46
	No		54
Willingness to Participate in Free HBV Screening			
	Yes	189	75.6
	No	61	24.4
Belief That University Students Are at High Risk			
	Yes	205	82.0
	No	45	18.0
Belief That University Provides Adequate Information on HBV Prevention			
	Yes	197	78.8
	No	53	21.2

Table 5. Behavioral factors associated with HBV among Baze University students (n=250)

Variable	Category	Frequency	Percentage
Unprotected sex			
	Yes	25	10.0
	No	215	86.0
	Others (Prefer not to say)	10	4.0
Shared personal items (razors, toothbrushes, needles)			
	Yes	50	20.0
	No	200	80.0
Tattoo/body piercing			
	Yes	30	12.0
	No	220	88.0
Multiple sexual partners			
	Yes	25	10.0
	No	225	90.0
Shared shaving instruments			
	Yes	31	12.4
	No	219	87.6
Shared chewing gum/ candies			
	Yes	64	25.6
	No	186	74.4
Do you smoke?			
	Yes	17	6.8
	No	233	93.2
Do you consume alcohol?			
	Yes	215	86.0
	No	35	14.0

DISCUSSION

In the present study, a prevalence of 0.4% among Baze University undergraduate students was found notably low compared to previous research conducted in other universities. For instance, studies reported higher prevalence rates at Federal University Oye-Ekiti, Ekiti State (2.23%),[13] Ahmadu Bello University (12.5%) [14], a University in Lagos reported 2.2% [15] and University of Jos, (16.7%). [16] Broader community data from Abuja shows an HBV prevalence of 4.3% among adults aged 20–39 years. [17].

Nationally, Nigeria's pooled HBV prevalence is around 9.5%. [18] This relatively low prevalence compared to the general population may be likely due to differences in exposure to risks factors as students in private institutions may engage less in high-risk behaviors compared to those in larger public universities. The majority of respondents were in the 21–23 years age group, aligning with the typical age of university students. Female respondents constituted a larger proportion (60%) compared to males (40%), which reflects greater female enrollment in Baze University. There was student representation across the various departments whilst majority was from Medical Laboratory Science (34.8%) and Medicine (30%), suggesting that many participants already had some health-related background that could potentially influence their knowledge of HBV.

Regarding ethnicity, although students form the northern part of Nigeria predominates this is expected due to the location of the school in the northern part of Nigeria. There were also significant respondents from other ethnic groups of Nigeria. This reflects Nigeria's ethnic diversity within the university.

In our study, although only a small proportion of students reported a history of liver disease (6.8%), jaundice (5.2%), blood transfusion (5.2%), or chronic diseases (6.8%), a relatively large number (40.4%) had been hospitalized at some point, and 39.6% reported undergoing dental procedures. Overall, the findings suggest that most participants had limited exposure to established clinical risk factors for HBV infection. These are relevant because hospitalization, dental procedures, and surgery may pose risks for HBV transmission if infection prevention and control measures are inadequate. Awareness of HBV was very high, with 96% of respondents having heard of the virus. This is consistent with previous studies as reported by Ali et al. who found that 98.6% of nursing students in Karachi knew that a virus is the cause of Hepatitis-B [19] and that conducted by Olanrewaju et al. in which 90 % of students were aware of HBV infection.[20] This suggests an increasing general awareness of the virus.

The media (25.4%) and school/academic sources (32%) were the main sources of information underscoring the influence of both formal and mass education. This reliance on mass media for health information aligns with findings by Alhowaish et al. [21] suggesting that media plays a pivotal role in health education. This level of awareness, however, did not correlate with knowledge because only 21% rated their knowledge as very good, while a majority (34%) described it as average and 26% admitted poor or no knowledge.

Despite the high level of awareness, knowledge gaps were evident. While 80.4% correctly identified HBV as viral, 3.6% thought it was bacterial, and 16.4% did not know. This level of awareness is higher when compared with studies conducted by Olanrewaju et al.in which 73.7% of university students in North-Central Nigeria did not recognize HBV as a virus and that conducted by Arinze et al. in which 90% didn't know how HBV is transmitted. Most respondents correctly identified liver as the primary organ affected (95.2%). Misconceptions still persist, with a minority attributing the kidneys and lungs as the organ primarily affected by HBV.

The lack of understanding in the causative agent of HBV can lead to misconceptions about transmission and prevention, underscoring the importance of targeted educational interventions to address these gaps.

Transmission knowledge also showed inconsistencies. Although unprotected sex (70.5%), sharing needles or sharp objects (73.%), and blood transfusion (69.6%), Mother-to-Child (52.4%) were correctly identified as risk factors, a notable proportion (10.8%) wrongly believed casual contact or contaminated food and water (14.8%), Coughing/sneezing (15.6%) could transmit the infection. Encouragingly, 89.2% of respondents correctly identified the liver as the primary organ affected by HBV, a finding consistent with two previous studies. [22,23] However, the persistence of misinformation despite relatively high awareness highlights significant gaps in fundamental knowledge about HBV among Nigerian students. Such misconceptions may contribute to stigma and discrimination against HBV-positive individuals and hinder the adoption of effective prevention strategies. Notably, 42% of participants were unaware that HBV infection can be asymptomatic, a critical gap given that asymptomatic carriers may unknowingly transmit the virus, thereby complicating control measures. These findings underscore the urgent need for

targeted educational interventions to dispel misconceptions and improve understanding of HBV transmission and disease dynamics.[21]

In our study, awareness of the vaccine was also high (72%), but uptake was very low. Only 38% were fully vaccinated, 11.2% partially vaccinated, and a striking 50.8% were not vaccinated at all. Similarly, only 46% of respondents had ever been tested for HBV, This indicates poor uptake of preventive measures despite widespread awareness. Willingness to participate in free screening was strong (75.6%), reflecting a receptive population for preventive interventions

This study aligns with similar studies done by Osei et al., [24] who reported that 30.5% of respondents had received complete doses of vaccine, 13.7% received incomplete doses while 55.8% of respondents were unvaccinated. Another study done by Ali et al. [19] also followed this pattern in which the general awareness was high, their understanding of its transmission was poor but only few has been vaccinated.

When compared with studies done internationally, the number of unvaccinated individuals in this study is higher (38%). A study in Al-Jouf University reported that 10.9% had never received an HBV vaccine. [25] The predominant reasons for non-vaccination included lack of availability (13.2%), fear of side effects (13.2%), and low perceived need (12.8%). These findings are consistent with other studies in Nigeria, where lack of availability, cost, and fear of side effects have been identified as major barriers to HBV vaccine uptake. [26]

These findings confirm a global pattern: that although general awareness is high, depth of knowledge especially around preventive measures such as vaccination uptake is lacking and that awareness does not always translate to protective behavior. The data highlights the need to correct misconceptions and promote actual vaccine uptake, especially in youth populations. This emphasizes the importance of sustained university-level vaccination programs and targeted health campaigns that go beyond awareness-raising to encourage tangible preventive actions. By addressing the barriers to vaccination and promoting a culture of health and safety, universities can play a critical role in reducing the risk of HBV infection among students.

While nearly half had undergone HBV testing (46%), willingness to participate in free HBV screening, was quite high (75.6%). This reflects that the population was receptive for preventive interventions. This is encouraging, as screening remains a critical entry point for both prevention and management of HBV infection. It also underscores the value of removing financial and accessibility barriers to testing. This aligns with previous reports that cost and convenience are major determinants of screening uptake among young adults in Nigeria and similar contexts. The perception of risk was also notable, with 82.0% acknowledging that university students are at heightened risk of HBV infection. Such awareness is encouraging, as perceived susceptibility is a strong predictor of preventive health behaviors. Furthermore, 78.8% of respondents believed the university provides adequate information on HBV prevention. This reflects positively on institutional efforts.

A few high-risk practices were identified in our study. About 10% admitted to unprotected sexual intercourse, while 12% reported having tattoos or body piercings with possibly non-sterile instruments. Similarly, 12.4% acknowledged sharing shaving instruments, and 20% shared personal items like toothbrushes or towels. These behaviors are well-documented risk factors for HBV transmission. Interestingly, 25.6% reported sharing chewing gum or candies, which does not constitute a scientifically recognized transmission route, reflecting possible misconceptions. The prevalence of risky behaviors among students in this study was relatively low compared to other research. For instance, Eni et al. [27] reported that 33% of students engaged in risky behaviors such as sharing sharp objects and unprotected sex. Similarly, Osei et al. [24] found that 25% of students reported tattoo/piercing practices, while Iroezindu et al. [28] reported that 46.5% of students admitted to unprotected sex, sharing of unsterilized sharp instruments was 70.5%, In contrast, students at Baze University reported lower levels of risky behavior. The relatively lower prevalence of risky practices in this study could be attributed to access to preventive measures among private university students and greater awareness of health risks as a result of cultural differences However, the persistence of behaviors such as sharing personal items highlights ongoing vulnerabilities that require targeted interventions. These findings

suggest that private university students may exhibit different behavioral patterns compared to their counterparts in public institutions, potentially due to differences in environment, access to resources, or socioeconomic factors.

CONCLUSION

This study revealed that although awareness of hepatitis B virus (HBV) among Baze University students is relatively high, actual knowledge regarding its transmission and prevention remains inadequate. Misconceptions, particularly the belief that HBV can be spread through casual contact, reflect a knowledge gap that may perpetuate stigma and discourage affected individuals from seeking appropriate care. Furthermore, the low uptake of HBV vaccination and limited testing among students indicate that awareness has not translated into protective health behaviors. The persistence of knowledge gaps observed in other domains of the study suggests that existing health education may not be comprehensive or sufficiently targeted. Strengthening structured HBV awareness campaigns within universities could therefore enhance both preventive practices and uptake of vaccination and screening services. Addressing both the knowledge gaps and the behavioral barriers identified in this study is critical for achieving effective HBV control among young adults in Nigeria.

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Ethical Approval: Ethical approval for this study was obtained from the Research Ethics Committee of Baze University, Abuja, Nigeria. Written informed consent was obtained from all participants prior to enrolment. Confidentiality and anonymity were strictly maintained throughout the study. Students who tested positive for HBsAg were counseled and referred to appropriate health facilities for further evaluation and management.

Authors' Contribution: All authors contributed to this study. Muhammad-Taaha Nabeelah contributed to data collection and processing. Ogunkoya Oluseun Funke analyzed and interpreted the data. Ogunkoya Oluseun Funke and Muhammed Baba Salihu was involved in writing and editing of the manuscript. Ogunkoya Oluseun Funke wrote the final draft and submitted the manuscript. The authors have read and approved the manuscript.

REFERENCES

1. Umer A, Teklemariam Z, Ayele F, Mengesha MM. Prevalence of hepatitis B infection and its associated factors among pregnant mothers attending antenatal care at public hospitals at Hararghe, Eastern Ethiopia. Front Glob Womens Health. 2023;4:1056488.
2. World Health Organization (WHO). Hepatitis B Fact Sheet.; 2021. Avaialble at: https://www.who.int/news-room/fact-sheets/detail/hepatitis-b
3. Musa B, Bussell S, Borodo M, Samaila A, Femi O. Prevalence of hepatitis B virus infection in Nigeria, 2000-2013: a systematic review and meta-analysis. Niger J Clin Pract. 2015;18(2):163.
4. Ajuwon BI, Yujuico I, Roper K, Richardson A, Sheel M, Lidbury BA. Hepatitis B virus infection in Nigeria: a systematic review and meta-analysis of data published between 2010 and 2019. BMC Infect Dis. 2021;21(1):1120.
5. Odukoya OO, Odeyemi KA, Odubanjo OM, Isikekpei BC, Igwilo UU, Disu YM, et al. Hepatitis B and C seroprevalence among residents in Lagos state, Nigeria: a population-based survey. Niger Postgrad Med J. 2022;29(2):75-81.
6. Anthony OI, chi Mercy IOU, Okechukwu OK. Prevalence and risk factors of hepatitis B virus infection among a cohort of primary health care workers in Nigeria. Texila Int J Public Health. 2013;11:1.
7. Adeyemi AB, Enabor OO, Ugwu IA, Bello FA, Olayemi OO. Knowledge of hepatitis B virus infection, access to screening and vaccination among pregnant women in Ibadan, Nigeria. J Obstet Gynaecol. 2013;33(2):155-9.
8. Ullah N, Khan I, Kakakhel MA, Xi L, Bai Y, Kalra BS, et al. Serological prevalence of hepatitis B virus (HBV) in Mardan district, Khyber Pakhtunkhwa, Pakistan. Braz J Biol. 2021;82:e245813.
9. Devarbhavi H, Asrani SK, Arab JP, Nartey YA, Pose E, Kamath PS. Global burden of liver disease: 2023 update. J Hepatol. 2023;79(2):516-37.
10. Atiba BP, Ajao KO, Babalola RN, Awosusi AE, Ayeni OO, Ijadunola KT. Hepatitis B Virus infection and its modes of prevention among clinical students of Obafemi Awolowo University (OAU), Ile-Ife, Nigeria. Afr J Med Med Sci. 2014;43(Suppl 1):31-7.
11. Makan N, Song E, Kramvis A. Knowledge, attitudes and practices of undergraduate health sciences students on hepatitis B vaccination at a South African university highlight the need for improvement of policies, implementation and co-ordination. S Afr Med J. 2023;113(5):39-45.
12. Ojerinde AO, Ojo SKS, Udewena LU, Oladeji SJ. A cross-sectional study on the prevalence of HIV and hepatitis B virus (HBV) co-infection among students of a tertiary institution in Ekiti State, South-West Nigeria. Pan Afr Med J. 2023;44:7.
14. Aminu M, Okachi EE, Abubakar SM, Yahaya A. Prevalence of

hepatitis B virus surface antigen among healthy asymptomatic students in a Nigerian University. Ann Afr Med. 2013;12(1):55-6.

15. Ashaka O, Ezeanya-Bakpa C, Olukoya F, Awodesu CI, Abdulkadir OA, Mbata PI, et al. Prevalence and risk implications of hepatitis B and C viruses in a university community in Lagos, Nigeria. Babcock Univ Med J. 2024;7(2):155-63.
16. Ekuma OO, Mawak JD, Uwakwe A, Ogbu O, Okoh FN, Agah MV, et al. Prevalence of Hepatitis B surface antigen among the newly admitted students of University of Jos, Nigeria. Afr J Life Sci. 2014;2(1):35-9.
17. Akabuike OM, Aworh MK, Uzoebo NL, Erwat J, Agukwe O, Ngong K, et al. Evaluating hepatitis B screening, prevalence, vaccination coverage, and linkage to care in Abuja, Nigeria: insights from a cross-sectional study. BMC Public Health. 2024;24(1):3475.
18. Elegbede OE, Alabi AK, Alao TA, Sanni TA. Knowledge and associated factors for the uptake of hepatitis B vaccine among nonmedical undergraduate students in a private university in Ekiti State, Nigeria. Niger J Med. 2022;31(4):401-5.
19. Ali J, Shah A, Khan S, Ali Y, Khan AU, Mustafa G, Badshah K. Knowledge regarding hepatitis B virus infection and its prevention among nursing students in Karachi. NRS. 2024:4(1):36-40.
20. Olanrewaju OM, Adekunle GS, Abdul-Rasheed OT, Ejiro O, Adedayo AA, Olarewaju TA. Knowledge of hepatitis B virus infection among university students in North-Central Nigeria. Afr J Educ Manag Teach Entrep Stud. 2025;14(2):392-409.
21. Alhowaish MA, Alhowaish JA, Alanazi YH, Alshammari MM, Alshammari MS, Alshamari NG, et al. Knowledge, attitudes and practices toward prevention of hepatitis B virus infection among medical students at Northern Border University, Arar, Kingdom of Saudi Arabia. *Electron Physician*. 2017;9(9):5388-94.
22. Babudieri S, Longo B, Sarmati L, Starnini G, Dori L, Suligoi B, et al. Correlates of HIV, HBV, and HCV infections in a prison inmate population: Results from a multicentre study in Italy. J Med Virol. 2005;76(3):311-7.
24. Osei E, Niyilapah J, Kofi Amenuvegbe G. Hepatitis B knowledge, testing, and vaccination history among undergraduate public health students in Ghana. BioMed Res Int. 2019;2019:7645106.
25. Al-Hazmi A. Knowledge, attitudes, and practice of medical students regarding occupational risks of hepatitis B virus in College of Medicine, Aljouf University. Ann Med Health Sci Res. 2015;5(1):13-9.
26. Onwuegbuna AA, Apakama AI, Eze UA, Ezeude CM, Ochiogu BC, Udeaja AC. Hepatitis B Virus Vaccination Awareness and Coverage among Adults Attending Ophthalmology Clinic in Southeast, Nigeria. Asian J Med Princip Clin Pract. 2024;7(1):104-13.
27. Eni AO, Soluade MG, Oshamika OO, Efekemo OP, Igwe TT, Onile-ere OA. Knowledge and awareness of hepatitis B virus infection in Nigeria. Ann Glob Health. 2019;85(1):56.
28. Iroezindu MO, Daniyam CA, Isa ES, Okeke EN, Agbaji OO. High-risk behaviour among hepatitis B virus-infected patients in a Nigerian tertiary hospital. Jos J Med. 2012;6(1):8-12.