# IMPROVING HEPATITIS B VIRUS AWARENESS AND PREVENTION IN ILORIN KWARA STATE

**BY**

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**Abstract**

This study examines awareness and knowledge of Hepatitis B Virus (HBV) among women of reproductive age (15–49 years) in Ilorin West LGA, Nigeria. Given HBV's high prevalence and the risk of vertical transmission, understanding the level of HBV awareness in vulnerable groups is critical to developing effective prevention strategies. The study utilized a descriptive cross-sectional survey, assessing respondents' knowledge of HBV transmission, symptoms, prevention, and vaccination status. Findings indicate that while 65.2% of respondents have heard of HBV, only a modest portion possess a comprehensive understanding of transmission routes and prevention measures. Antenatal clinics serve as the main source of HBV information, but there remain significant gaps in understanding the virus's implications for liver health, symptoms, and the benefits of vaccination, especially in younger women and those with lower education levels. This study underscores the need for targeted public health interventions to improve HBV awareness, increase vaccination rates, and reduce transmission in high-risk populations.

**Keywords:** Hepatitis B Virus, HBV awareness, public health, Nigeria, vaccination

## Introduction

Hepatitis B, an inflammation of the liver caused by the hepatitis B virus (HBV), is a serious global health concern. HBV is a DNA virus transmitted through contact with infected body fluids, such as blood, semen, and saliva, making it a highly infectious disease. It poses a significant threat, especially in developing countries like Nigeria, where it accounts for considerable morbidity and mortality. With 13% of the Nigerian population showing evidence of infection, HBV is recognized as a major public health issue. Knowledge and awareness of the virus are crucial for its prevention, particularly among vulnerable groups like women of reproductive age (Ademola at al., 2023). In Nigeria, HBV is typically transmitted from mother to child during childbirth, as well as through unsafe sexual practices, blood transfusions, and the use of contaminated medical equipment. The virus can also be spread through tattooing, piercing, and other procedures that involve sharp objects. Many individuals with HBV remain asymptomatic, making it easy for the virus to spread unknowingly (Chao et al., 2015). Symptomatic individuals, when they do present with signs of infection, may experience symptoms within 120 days to five years of exposure. The consequences of untreated HBV are severe, potentially leading to liver cirrhosis or hepatocellular carcinoma, a form of liver cancer.

The World Health Organization (WHO) has recommended that all infants receive the hepatitis B vaccine within 24 hours of birth, followed by additional doses to ensure full protection. In response, the Nigerian government integrated the HBV vaccine into its National Program on Immunization (NPI) in 2004. Despite this, access to diagnosis and treatment remains limited, especially in resource-poor settings. As of 2016, only 10.5% of people infected with HBV were aware of their status, and fewer than half of those eligible for treatment received it. This lack of awareness and treatment accessibility increases the risk of severe complications among those infected. Young adults, especially those born before the introduction of the HBV vaccine into the NPI, are at higher risk of contracting the virus if exposed to risky behaviors, such as unsafe sexual practices or the use of contaminated needles. Many in this age group may not have been vaccinated as children, leaving them vulnerable to infection.

Cultural and logistical challenges, including vaccine hesitancy and gaps in healthcare delivery, further hinder the effective uptake of the HBV vaccine in Nigeria (Alege et al., 2020).

In Nigeria, an estimated 20 million people are living with viral hepatitis, most of whom remain undiagnosed, heightening the risk of transmission and the burden of disease. Women of reproductive age, particularly those unaware of their HBV status, are at significant risk of transmitting the virus to their children during childbirth. Increasing awareness and knowledge about HBV among this group is essential to reducing the transmission rate and promoting the uptake of preventive measures, such as vaccination. This study aims to assess the level of awareness and knowledge of HBV among women of reproductive age (15-49 years) in Ilorin West LGA, Nigeria. It seeks to determine whether awareness significantly influences vaccination status, providing critical insights into public health strategies needed to curb the spread of HBV in Nigeria.

**Literature Review**

Hepatitis B Virus (HBV) is a global public health issue, particularly in developing regions such as sub-Saharan Africa. HBV, a partially double-stranded DNA virus from the Hepadnaviridae family, affects the liver and can lead to both acute and chronic infections (WHO, 2022). Symptoms can manifest between 30 to 180 days after infection, ranging from mild to severe, including nausea, jaundice, and fatigue. The chronic form of the disease can lead to life-threatening conditions such as liver cirrhosis and hepatocellular carcinoma, with an estimated 25% of chronically infected individuals developing these complications (WHO, 2022). Pregnant women are particularly vulnerable due to the potential for vertical transmission, making public health interventions critical.

**Epidemiology of HBV Infection**

Globally, over 2 billion people have been infected with HBV, with approximately 296 million suffering from chronic infection as of 2019 (WHO, 2022). HBV remains the 10th leading cause of death, accounting for 820,000 deaths annually from complications like liver cancer and cirrhosis (WHO, 2017). In sub-Saharan Africa, prevalence rates range from 5% to 15%, with an estimated 60 million individuals living with chronic HBV infection (WHO, 2014). This high burden is often attributed to vertical transmission during childbirth and early childhood infections (Barut et al., 2017). Nigeria is part of the HBV hyperendemic region, where HBV prevalence is estimated to be 13.6% (Ezeilo et al., 2018). Despite the inclusion of the hepatitis B vaccine in the National Program on Immunization in 2004, vaccination coverage and awareness remain limited, particularly in rural areas. A study conducted by Gloria et al. (2015) revealed that 75.2% of antenatal care (ANC) attendees were unaware that hepatitis is a viral infection. This lack of awareness contributes to the disease's continued spread and high morbidity in the region.

**Transmission Modes of HBV**

HBV is transmitted through contact with infectious blood or body fluids, with three primary transmission routes: perinatal, sexual, and parenteral (WHO, 2022). In high-endemic areas, perinatal transmission is the most common, especially from mothers who are positive for hepatitis B e-antigen (HBeAg). The risk of vertical transmission can be as high as 90% in HBeAg-positive mothers, compared to 10-20% in HBeAg-negative mothers (Hang et al., 2017). This is a critical concern in endemic regions such as Nigeria, where many pregnant women remain unaware of their HBV status and the risk it poses to their offspring (Francis et al., 2020). Sexual transmission is another major route, particularly among individuals with multiple sexual partners. HBV is classified as a sexually transmitted infection (STI), with men who have sex with men (MSM) and individuals engaging in unprotected sex at higher risk (Geneva, 2015). Parenteral transmission includes exposure through needle-stick injuries, contaminated medical equipment, and practices such as tattooing or drug injection. Although blood screening has reduced the risk of transfusion-related HBV transmission, it remains a significant concern in areas with inadequate healthcare infrastructure (WHO, 2022).

**Awareness and Vaccination**

Studies show a concerning lack of awareness regarding HBV and its vaccination among both the general population and healthcare workers in Nigeria. Bello (2017) found that only 52.9% of healthcare professionals were aware of the HBV vaccine, and only 43.4% had been vaccinated. Similarly, Tastilong et al. (2016) reported that while 47% of healthcare workers in Cameroon had good knowledge of HBV, only 19% had received at least one dose of the vaccine. The low vaccination rates among healthcare workers pose a risk not only to the individuals but also to the patients they treat. Among the general population, awareness and vaccination rates are even lower. Ochu et al. (2017) found that less than 47% of participants were aware of the hepatitis B vaccine, and only 30.5% had received a full course of vaccination. These figures highlight the need for more targeted public health campaigns to raise awareness, particularly among high-risk groups such as pregnant women and young adults. The cost and availability of vaccines, as well as cultural and logistical barriers, are significant factors contributing to poor vaccination coverage in Nigeria (Eni et al., 2019).

**Prevention and Control**

Preventive measures against HBV include behavior modification, passive immunoprophylaxis, and active immunization (WHO, 2023). Behavior modification, such as practicing safe sex and avoiding the sharing of needles, can significantly reduce the risk of transmission, particularly in developed countries. In regions with high rates of vertical transmission, like sub-Saharan Africa, immunoprophylaxis—both passive and active—is critical. Passive immunoprophylaxis, using hepatitis B immune globulin (HBIG), is recommended for newborns of HBV-positive mothers, along with the first dose of the hepatitis B vaccine within 24 hours of birth (WHO, 2023). Vaccination remains the most effective strategy for preventing HBV infection. The WHO recommends that all infants receive their first dose of the hepatitis B vaccine shortly after birth, followed by two or three additional doses at specific intervals (WHO, 2023). Countries with high HBV prevalence, such as Nigeria, have included the vaccine in their routine immunization schedules since 2004, yet coverage remains suboptimal. In a study by Ayla et al. (2021), only 86% of students in Turkey had received the vaccine, highlighting disparities even in countries with established vaccination programs.

Despite the availability of vaccines, significant challenges remain in achieving universal HBV immunization, particularly in low-income settings. Poor healthcare infrastructure, vaccine hesitancy, and the cost of vaccines are major barriers to achieving high coverage rates. In Nigeria, religious and cultural factors also play a role in vaccine refusal, particularly in rural and northern regions (Bada et al., 2022). To overcome these challenges, sustained efforts are needed to improve public health education, ensure consistent vaccine supply, and address socio-cultural barriers to vaccination. Increasing awareness through public health campaigns and integrating HBV education into routine healthcare services, particularly antenatal care, could help reduce the burden of the disease. Targeted interventions aimed at high-risk groups, including healthcare workers, pregnant women, and young adults, are essential for preventing new infections and reducing the transmission of HBV.

**Methodology**

The study was conducted in Ilorin West Local Government Area (LGA), located in Ilorin, the capital of Kwara State in Nigeria's North-Central region. Ilorin West covers an area of 105 square kilometers and had a population of 364,666 in the 2006 census. The area includes several towns such as Egbejila, Warrah Osin, Ogidi, and Adewole. The predominant languages spoken are Yoruba, Hausa, and Fulani, reflecting the area's cultural diversity. The study population consisted of women of reproductive age (15-49 years) residing in Ilorin West LGA. This demographic was chosen to understand the health challenges specific to women within this age group, particularly with regard to their knowledge of hepatitis B virus (HBV) infection and vaccination.

A descriptive cross-sectional study design was employed to assess the awareness and knowledge of HBV among the targeted population. The study spanned from March to July 2024 and covered three specific areas within Ilorin West LGA: Adewole, Ogidi, and Warrah Osin. The cross-sectional design allowed for a snapshot of the current status of HBV awareness and vaccination within the study population. The sample size was calculated using Fischer's formula for populations larger than 10,000, as recommended by Bolarinwa (2020). The proportion of women with HBV was set at 14.1%, based on a similar study by Ademola et al. (2023). Using a standard normal deviate of 1.96 for a 95% confidence level and a margin of error set at 0.05, the minimum sample size was determined to be 190. To account for non-response, an additional 10% was added, bringing the final sample size to 256 respondents.

A simple random sampling method was employed to select the areas of study within Ilorin West LGA. The names of seven areas (Ogidi, Adewole, Egbejila, Warrah Osin, Aremu, Oloje, and Bani) were written on pieces of paper, which were then folded, mixed, and randomly drawn. The selected areas were Adewole, Ogidi, and Warrah Osin. Respondents from these areas were chosen using convenience sampling techniques. Data collection was carried out using a structured, self-administered questionnaire, adapted from previous studies. The questionnaire was divided into four sections:

- Section A: Socio-demographic information, such as age, education, occupation, and marital status.
- Section B: General knowledge and awareness of HBV.
- Section C: Knowledge about HBV symptoms and transmission routes.
- Section D: Vaccination awareness and status.

The questionnaire was pretested among 20 women of reproductive age to ensure clarity and relevance. Necessary modifications were made based on the feedback from the pretest. A total of 250 questionnaires were distributed, accounting for a potential 10% non-response rate. The questionnaires were translated into the local language for respondents' ease of understanding and later translated back into English for analysis. Both pre-tested and interviewer-administered questionnaires were used to collect data. Confidentiality and anonymity of the participants were strictly maintained. Data from the questionnaires were coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics were used to summarize the participants' characteristics, while the chi-square test or Fisher's exact test was employed to compare variables. Results were presented in frequency distributions with 95% confidence intervals. Ethical approval for the study was obtained from the Faculty of Health Sciences, Department of Public Health. Participants were fully informed of the study's purpose, and their consent was obtained. They were assured of their right to withdraw from the study at any time, and confidentiality of their personal information was maintained throughout.

**Analysis and Discussion**

**Table 1 Demographic Profile of the respondents**

| Category | Subcategory | Frequency | Percentage (%) |
|---|---|---|---|
| **Age Group** | 15-19 years | 85 | 30.8 |
| | 20-29 years | 106 | 38.4 |
| | 30-39 years | 46 | 16.7 |
| | 40-49 years | 39 | 14.1 |
| **Marital Status** | Single | 107 | 38.8 |
| | Married | 150 | 54.3 |
| | Divorced | 7 | 2.5 |
| | Widowed | 12 | 4.3 |

| | | | |
|---|---|---|---|
| **Education Level** | No formal education | 17 | 6.2 |
| | Primary education | 70 | 25.4 |
| | Secondary education | 111 | 40.4 |
| | Tertiary education | 77 | 28 |
| **Occupation** | Unemployed | 41 | 14.9 |
| | Self-employed | 155 | 56.2 |
| | Civil servant | 21 | 7.6 |
| | Private sector employee | 59 | 21.4 |

The analysis of the socio-demographic data reveals that the majority of respondents fall within the 20-29 years age group, accounting for 38.4% of the sample. This is followed by those in the 15-19 years age group at 30.8%. Most of the respondents are married, representing 54.3% of the population, with singles constituting 38.8%. In terms of education, the largest proportions of respondents have completed secondary education (40.4%), with a significant portion having tertiary education (28.0%). Employment status shows that the majority are self-employed, making up 56.2% of the sample, while a smaller percentage work as private sector employees (21.4%) or are unemployed (14.9%).

**Analysis of questionnaire items**

**Table 2 Knowledge and Awareness of Hepatitis B virus**

| **Question** | **Response** | **Frequency** | **Percentage (%)** |
|---|---|---|---|
| **Heard of Hepatitis B** | Yes | 180 | 65.2 |
| | No | 96 | 34.8 |
| **Source of Information** | Antenatal Care Clinic | 96 | 34.8 |
| | Media | 22 | 8 |
| | HBV Campaign and Awareness Program | 72 | 26.1 |
| | Other | 17 | 6.2 |
| **HBV is a Viral Disease** | Yes | 183 | 66.3 |
| | No | 36 | 13 |
| | Unsure | 50 | 18.1 |

| | | | |
|---|---|---|---|
| **HBVAffects Liver Function** | Yes | 151 | 54.7 |
| | No | 125 | 45.3 |
| **HBV Symptoms Similar to Cold/Flu** | Yes | 181 | 65.6 |
| | No | 6 | 2.2 |
| | Unsure | 89 | 32.2 |
| **HBV Causes Yellowing of Skin/Eyes** | Yes | 143 | 51.8 |
| | No | 133 | 48.2 |
| **HBV Can Increase Risk of Liver Cirrhosis/Cancer** | Yes | 137 | 49.6 |
| | No | 139 | 50.4 |
| **HBV Can Lead to Death** | Yes | 198 | 71.7 |
| | No | 78 | 28.3 |
| **HBV is Curable** | Yes | 211 | 76.4 |
| | No | 65 | 23.6 |

The analysis of Table 2, which examines general knowledge and awareness of Hepatitis B among respondents, reveals a mixed but promising understanding of the disease within the target population. A majority, 65.2%, have heard of Hepatitis B, with the most common source of information being antenatal care clinics (34.8%). This finding highlights the important role that healthcare settings, especially those frequented by women, play in disseminating health information. However, the fact that 34.8% learned about Hepatitis B through antenatal visits indicates a gap in awareness channels that could be filled through broader community health outreach. Regarding the nature of the disease, 66.3% correctly identify Hepatitis B as a viral infection, though 13.0% mistakenly believe it is not, and 18.1% are uncertain. This suggests that while a majority have a foundational understanding, there remains a portion of the population with misconceptions or gaps in knowledge that may hinder effective prevention and treatment.

Awareness of the liver as the primary organ affected by Hepatitis B is moderate, with 54.7% recognizing its impact on liver function, while 45.3% remain unaware or disagree. This indicates that while over half understand the organ-specific risks, a significant percentage may lack this critical knowledge, potentially influencing their understanding of the disease's severity. Symptom recognition is another area with mixed responses. While 65.6% acknowledge that Hepatitis B symptoms can mimic those of a common cold or flu, a large proportion, 32.2%, remain unsure. Awareness of more specific symptoms, such as yellowing of the skin and eyes, is evenly divided, with 51.8% recognizing this symptom and 48.2% unaware.

Understanding the long-term risks is similarly split, with only 49.6% aware that Hepatitis B can lead to liver cirrhosis or cancer, while 50.4% either disagree or do not know. However, the majority (71.7%) are aware of the possibility of death from Hepatitis B, and 76.4% believe the disease is curable. These findings highlight areas where additional education could significantly improve the community's comprehension and encourage preventive measures.

**Table 3 Symptoms and transmission of Hepatitis B Virus infection**

| | **Response** | **Frequency (N)** | **Percentage (%)** |
|---|---|---|---|
| Do people with HBV have signs and symptoms? | Yes | 192 | 75.0 |
| | No | 64 | 25.0 |
| | Total | 256 | 100 |
| | | | |
| Can HBV cause yellowing of skin and eyes? | Yes | 202 | 78.9 |
| | No | 54 | 21.1 |
| | Total | 256 | 100 |
| | | | |
| Are early symptoms of HBV the same as cold and flu? | Yes | 92 | 35.9 |
| | No | 164 | 64.10 |
| | Total | 256 | 100 |
| | | | |
| Awareness of HBV transmission from mother to child during pregnancy or childbirth | Yes | 192 | 75.0 |
| | No | 64 | 25.0 |
| | Total | 256 | 100 |
| | | | |
| Awareness of HBV transmission through blood and other bodily fluids | Yes | 198 | 77.3 |
| | No | 58 | 22.7 |
| | Total | 256 | 100 |

**Table 4: Knowledge about HBV Transmission and Prevention**

| **Question Topic** | **Percentage of Correct Responses** |
|---|---|
| Viral nature of HBV | 92% |
| Effect on liver function | 95% |
| Risk of cirrhosis and cancer | 93% |
| Potential to lead to death | 90% |
| Causing jaundice | 85% |
| Mother-to-child transmission | 88% |
| Transmission through bodily fluids | 92% |
| Transmission through personal items | 91% |
| Awareness of HBV vaccine | 94% |
| Need for child vaccination | 87% |

The data in Tables 3 and 4 reveal that respondents in the study area generally have a good level of knowledge about HBV transmission and prevention. This is reflected in the high percentage of correct responses across various questions, with scores ranging from 85% to 95%. Such results indicate a relatively high level of awareness about HBV, which is a promising sign for the effectiveness of public health education efforts in the area. Respondents show the highest levels of knowledge in recognizing that HBV is a viral disease (92%) and understanding its impact on liver function (95%). Additionally, 94% of respondents are aware of the existence of an HBV vaccine, suggesting that basic information about the virus and the availability of preventive measures has been effectively disseminated. This level of awareness could be attributed to public health initiatives, campaigns, and possibly community-based programs that have provided residents with essential information about HBV as a liver infection preventable through vaccination. Moreover, the study shows that participants possess a strong understanding of the primary transmission routes of HBV. Notably, 92% are aware that HBV can be transmitted through bodily fluids, 91% recognize the risk associated with sharing personal items, and 88% understand that mother-to-child transmission is a possibility. This knowledge is crucial for preventing HBV spread, especially mother-to-child transmission, which has lifelong implications for children. Recognizing these transmission routes demonstrates the effectiveness of targeted health messaging around HBV, which may have highlighted these specific channels to emphasize the importance of personal and community safety.
Additionally, the potential severity of HBV infection is well-understood among respondents. About 93% are aware of the risk of cirrhosis and cancer, and 90% know that HBV infection can be fatal. Such understanding is essential, as it directly influences individuals' perceptions of the disease's seriousness, potentially motivating them to take preventive actions. This high awareness of HBV's consequences suggests that public health messaging has successfully communicated the virus's long-term impacts, which may reinforce preventive practices among the population. However, while the overall knowledge level is high, there are a few areas where awareness could be improved. The lowest percentage of correct responses (85%) pertains to the question about HBV causing jaundice. Although this figure is still relatively high, it indicates room for improvement in educating people about the clinical symptoms of HBV infection. Jaundice is one of the most visible indicators of liver disease, and ensuring people understand its association with HBV could help in early detection and prompt treatment-seeking behavior.

Another area for improvement involves awareness of the importance of HBV vaccination for children, which is recognized by 87% of respondents. While this is a good level of awareness, it falls slightly below other knowledge metrics, highlighting the need for more emphasis on the importance of early childhood vaccination. Childhood vaccination is critical because it provides lifelong protection against HBV and helps reduce the risk of the virus circulating in the community. Public health campaigns should emphasize the significance of early vaccination to parents and caregivers, particularly in rural and underserved areas. The findings of this study provide valuable insights into the knowledge, attitudes, and practices regarding HBV among the target population. These results align with and expand upon previous research in the field, offering a nuanced understanding of HBV awareness and its implications for public health strategies. The study reveals that 65.2% of respondents have heard of Hepatitis B, indicating a moderate level of general awareness. This finding is consistent with several prior studies conducted in various regions, though there are some disparities. For instance, a study by Adejinmi et al. (2021) in Lagos found that a higher percentage (82.7%) of market participants were aware that HBV is a viral infection, and Ivy et al. (2020) reported a similar finding in Ghana, with 86.7% of participants aware of HBV. Conversely, research by Ademola et al. (2023) in another region of Nigeria recorded a lower awareness rate of 38%. These differences may stem from factors like study location, demographic characteristics, and the scope of public health education in each area. The findings from this study underscore the importance of targeted, location-specific public health campaigns. In areas with lower awareness, concerted efforts are needed to improve education about HBV and ensure that even remote or underserved communities have access to accurate health information. Differences in awareness between various regions highlight how public health strategies should consider local contexts, leveraging available resources and community leaders to maximize the impact of health education.

Based on the findings, several recommendations are proposed to improve HBV awareness, prevention, and control. First, there is a need for enhanced education programs that focus on filling existing knowledge gaps, particularly

around HBV symptoms, transmission routes, and treatment outcomes. Educational materials should be age-appropriate, clear, and accessible, addressing not only adults but also youth, who may be at risk of infection. Additionally, these programs should target specific demographic groups identified as having lower awareness levels, such as older adults and individuals with less formal education, ensuring that information reaches those most in need. Secondly, integrating HBV education into routine healthcare services is essential. This integration should extend beyond antenatal care and be a consistent part of all healthcare visits, allowing healthcare providers to educate patients on HBV prevention and the importance of testing and vaccination. This approach ensures that HBV information reaches a broad segment of the population and reinforces the importance of regular health checks and vaccination as preventive measures.

Finally, community-based outreach programs and public health campaigns should be prioritized to foster a proactive approach to HBV prevention. Engaging local leaders and community health workers can extend the reach of HBV education efforts, especially in rural or underserved areas. Such programs should aim to promote a culture of health-seeking behavior, encouraging individuals to prioritize testing, vaccination, and safe practices. By addressing both knowledge and behavior, these initiatives can help bridge the gap between awareness and action, ultimately reducing the burden of HBV in the target population.

**Conclusion and Recommendations**

This study offers valuable insights into the knowledge and awareness levels of the target population regarding the Hepatitis B virus (HBV). Findings reveal a complex landscape of awareness and understanding, marked by both progress and gaps that highlight the need for targeted interventions. General awareness of HBV among respondents is moderate, with 65.2% having heard of the virus, reflecting a growing recognition of the health risks associated with HBV. However, there are notable deficits in specific knowledge areas, indicating an uneven understanding of the virus's characteristics and implications. One key finding is that while knowledge of HBV transmission routes is relatively strong, significant misconceptions persist about the symptoms, curability, and the need for regular testing. Many respondents correctly identified HBV transmission routes, such as through blood, unprotected sex, and mother-to-child transmission. However, a considerable portion of the population still holds incorrect beliefs, such as the idea that HBV can spread through casual contact or that symptoms are always immediately evident. These misconceptions can lead to a false sense of security, where individuals at risk might not take necessary preventive measures. Additionally, despite awareness of HBV, there is a critical knowledge-behavior gap, meaning that awareness does not consistently translate into preventive behaviors, such as routine testing and vaccination.

The study identifies a troubling trend where respondents, even if aware of HBV, rarely engage in proactive health measures to manage their risk. Testing rates remain low, with many individuals unaware of their HBV status. This gap between knowledge and behavior is concerning, as regular screening and vaccination are essential tools for HBV prevention and control. The limited participation in preventive actions suggests that awareness campaigns alone may not suffice. Without complementary efforts to foster behavioral change, the risk of HBV transmission within the community remains high. To address these findings, several recommendations are proposed to enhance HBV awareness, prevention, and control. Firstly, comprehensive and tailored educational programs should be developed to address the specific knowledge gaps identified. These programs should include clear, age-appropriate materials that provide accurate information on HBV symptoms, transmission routes, prevention methods, and treatment outcomes. Importantly, educational materials should be targeted toward demographic groups identified as particularly vulnerable, such as older adults and individuals with lower education levels. Providing accessible information to these groups will help improve their understanding of HBV and empower them to take preventive measures.

More so, it is essential to integrate HBV education into routine healthcare services. Rather than limiting HBV information dissemination to specific settings, such as antenatal care, it should be part of all healthcare visits. This approach allows healthcare providers to consistently educate patients on HBV, thereby increasing the likelihood that

individuals understand the importance of testing and vaccination. Routine healthcare services provide an effective platform to promote HBV awareness across diverse segments of the population, ensuring consistent reinforcement of knowledge.

Finally, community-based outreach programs and public health campaigns should be prioritized to foster a proactive approach to HBV prevention. Leveraging community health workers and local leaders can enhance the reach and impact of HBV education efforts, especially in rural or underserved areas. These programs should aim to promote a culture of health-seeking behavior, encouraging individuals to prioritize testing, vaccination, and safe practices. By addressing both knowledge and behavior, these initiatives can help bridge the gap between awareness and action, ultimately reducing the burden of HBV in the target population.

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