

Knowledge, Risk Behaviours, and Preventive Practices related to Hepatitis B Virus among Residents of Jalingo Metropolis, Taraba State, Nigeria

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Abstract

Keywords

Hepatitis B virus,
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Hepatitis B virus (HBV) remains a major public health challenge in sub-Saharan Africa, with Nigeria bearing a high burden of chronic infection. Adequate knowledge, healthy behavioural practices, and preventive measures are essential for reducing HBV transmission. This study assessed the knowledge, risk behaviours, and preventive practices related to HBV among residents of Jalingo Metropolis, Taraba State, Nigeria. A community-based descriptive cross-sectional survey was conducted among 618 adult residents selected using a multi-stage sampling technique. Data were collected using a structured interviewer-administered questionnaire and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise the findings. The respondents were predominantly males (59.2%) and young adults aged 18–36 years (56.6%). Overall, respondents demonstrated a moderate level of HBV knowledge. Most correctly identified HBV as a viral infection (68.8%), recognised infected blood as a route of transmission (63.1%), acknowledged vaccination as a preventive measure (61.2%), and understood that infected individuals may remain asymptomatic (61.2%). However, knowledge of sexual transmission was comparatively lower (55.3%). Risk behaviours remained common, with 26.7% reporting frequent sharing of sharp objects, 29.0% engaging in unprotected sexual practices, 20.4% frequently patronising uncertified healthcare facilities, and 24.4% regularly participating in tattooing or scarification. Preventive practices showed moderate compliance: 62.9% reported receiving HBV vaccination, 68.9% avoided sharing sharp objects, 57.1% consistently practised safe sex, and 50.3% regularly attended HBV health education programmes. The study concluded that residents of Jalingo Metropolis exhibited moderate knowledge and preventive practices regarding HBV; however, substantial knowledge gaps and persistent high-risk behaviours continue to predispose the population to HBV transmission. Strengthening community-based health education, expanding access to routine screening and vaccination services, and promoting safer behavioural practices are recommended to improve HBV prevention and control.

1. Introduction

Hepatitis B Virus (HBV) infection is a chronic disease of public health concern across the world, especially in the sub-Saharan Africa region, where it is disproportionately high. The World Health Organisation (WHO) estimates that chronic HBV infection affects over 296 million people globally, and the African continent

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accounts for over one-quarter of the burden with endemic transmission, limited awareness, and limited access to health care centres (Vo-Quang and Lemoine, 2024).

Sub-Saharan Africa has a prevalence of HBV ranging from 5% to over 10% in the general population, with geographical and population-based heterogeneity (Ajuwon et al., 2021). Infection in most cases is acquired at birth or in early childhood, resulting in chronic infections for a lifetime and a predisposition to cirrhosis and hepatocellular carcinoma (Ajuwon et al., 2021). Prevention of HBV transmission has been hampered by low levels of awareness, lack of adequate immunisation coverage, and socio-economic barriers to health care access despite the availability of effective vaccines produced during the 1980s (Agbesanwa, 2023).

Worldwide, HBV is the most common cause of liver disease, with the WHO aiming to eradicate viral hepatitis by 2030 (Yusuf et al., 2026). However, even with the existence of an effective and safe vaccine since 1982, many high-prevalence areas still have low vaccination rates (National Guidelines for the Prevention, Treatment and Care of Viral Hepatitis in Nigeria, 2016). Infection with the hepatitis B virus does not present any symptoms in about 50-70% of cases in older children and adults (Ajuwon et al., 2021). Nigeria has some of the world's highest HBV burden, with national prevalence estimated between 8% and 15%, regionally (Adeniyi et al., 2020; Adewuyi, 2025; Akabuike et al., 2024). As stated by researchers, quite a few individuals among the 20 million Nigerians who suffer from the viral infection do not know of their status, putting themselves at great risk for transmission of the disease and its complications (Eni et al., 2019; Yusuf et al., 2026). According to scientific evidence, the virus is vertically transmitted due to poor vaccination and screening coverage as well as high-risk practices using sharps (Odita et al., 2023). Inadequate integration of hepatitis B birth-dose vaccination into routine immunisation and low adult catch-up vaccination further sustains transmission (Odita et al., 2023; Yusuf et al., 2026).

Knowledge, risk behaviours, and preventive practices toward HBV are recognised as critical determinants of both individual-level prevention and population-level transmission dynamics (Muhammed et al., 2026). There have been several surveys carried out in Nigerian universities showing that knowledge of HBV remains very poor, with low vaccine uptake, and the presence of misconceptions regarding the transmission modes of the disease (Elegbede et al., 2022; Olorukooba et al., 2018; Yusuf et al., 2026). Risk behaviours such as sharing of sharp objects, unsafe sexual practices, unsterilised tattooing or piercing procedures, poor infection control practices, and patronage of uncertified healthcare providers continue to increase the spread of HBV infection (WHO, 2026).

In Jalingo Metropolis, Taraba State, there is limited documented evidence on the level of knowledge, risk behaviours, and preventive practices related to Hepatitis B virus among residents. The absence of adequate local data on HBV-related knowledge, risk behaviours, and preventive practices among residents of Jalingo Metropolis poses a challenge to healthcare planning, policy formulation, and implementation of targeted intervention programmes. Therefore, this study seeks to examine the knowledge, risk behaviours, and preventive practices related to Hepatitis B virus among residents of Jalingo Metropolis, Taraba State, Nigeria.

2. Materials and Methods

2.1 Research Design

The study was conducted in Jalingo Local Government Area (LGA), the capital of Taraba State in North-Eastern Nigeria. Jalingo lies between approximately 8°47'–8°56' North latitude and 11°09'–11°30' East longitude, covering an estimated land area of about 195 km². The area shares boundaries with Ardo-Kola LGA to the north and east, Lau LGA to the west, and Yororo LGA to the south. The climate is tropical, with distinct rainy (April–October) and dry (November–March) seasons, and the Benue River and its tributaries contribute to agricultural activities within the area. Jalingo has a rapidly growing urban centre surrounded by peri-urban and rural communities, resulting in a mixed settlement pattern. The population comprises diverse ethnic groups, including the Jukun, Mumuye, Fulani, Kona, Hausa, and other Nigerian ethnicities, reflecting a multicultural environment. The major occupations of residents include farming, livestock rearing, trading, civil service, transportation, and small-scale businesses. The presence of tertiary institutions, markets, and public and private healthcare facilities makes Jalingo an appropriate setting for community-based studies on public health issues such as hepatitis B virus infection.

2.2 Study Area

The study population comprised male and female household residents aged 18 years and above living in Jalingo Local Government Area, estimated at 220,700 based on national census figures projected forward at an annual growth rate of 2.9% (National Population Commission, 2006). The sample size was determined using Yamane's (1967) formula for a finite population, $n = N / [1 + N(e)^2]$, with a precision level (e) of 0.05, yielding a sample size of approximately 400 respondents. A multi-stage sampling technique was employed.

At the first stage, five of the ten wards of Jalingo Local Government Area - Kona, Majidadi, Mayo Goi, Sarkin Dawaki, and Turaki 'A' - were selected by simple random sampling (balloting). At the second stage, houses and households within each selected ward were identified using house-numbering records obtained from the primary health care department, with recruitment commencing from the village square and the chief's house in each ward. At the third stage, one eligible adult respondent was selected per household by simple random sampling where more than one eligible adult was available.

2.3 Study Population

Adult community members (18 years and above) residing in selected urban and rural communities of Jalingo who consent to participate in the survey.

2.4 Sample Size Determination

The sample size for the community-based survey was determined using Cochran's formula, which is appropriate for large or infinite populations and provides a statistically representative sample when the exact population size is unknown.

Cochran's formula is expressed as:

$$n = (Z^2 \times p \times q) / e^2$$

$$Z=1.96, p=0.5, e=0.05$$

$$\text{Initial } n=385$$

However, to improve precision, increase statistical power, and account for non-response, the sample size was adjusted upward. Applying a 60% adjustment:

$$\text{Adjusted sample size} = 385 + (0.60 \times 385) = 385 + 231 = 616$$

To ensure adequacy and ease of distribution, the final sample size was rounded up to 618 respondents. This final sample size enhances representativeness and reliability of the study findings.

2.5 Sampling Technique

A multi-stage sampling technique was employed to ensure adequate representativeness of the study population across the different administrative units in Jalingo Local Government Area.

In the first stage, Jalingo was stratified into its existing political wards, which serve as the primary sampling units for community-level administration and health planning.

In the second stage, several wards were selected from the total wards in Jalingo using simple random sampling to give each ward an equal chance of selection. The selected wards included major residential and semi-urban wards such as Kona, Sintali, Sarkin Dawaki, Barade, Mayo-Goyi, Majidadi, and Turaki wards. These wards were considered appropriate because they collectively represent the socio-economic and geographic diversity of the Local Government Area.

In the third stage, communities within each selected ward were listed and then randomly selected to ensure fair representation of both densely populated and less populated settlements. This helped to reduce selection bias and ensured that respondents were drawn from different environmental and social settings within each ward.

In the fourth stage, households within the selected communities were selected using a systematic sampling technique. A sampling interval (k) was determined by dividing the estimated number of households in each community by the allocated sample size for that community. After identifying a random starting point, every 2nd household was selected until the required number of households per community was achieved.

At the final stage, in households where more than one eligible respondent was available, simple random sampling was used to select only one respondent to participate in the study. This approach ensured that each eligible individual had an equal chance of being selected and helped to minimise intra-household selection bias.

The total sample size of 618 respondents was proportionately allocated across the selected wards based on their estimated population sizes. Wards with larger populations were allocated higher numbers of respondents, while smaller wards were allocated fewer respondents. This proportional allocation ensured that the final sample accurately reflected the population distribution across the selected wards in Jalingo, thereby improving the validity and generalizability of the study findings.

2.6 Data Collection Methods

Data were collected using a structured interviewer-administered questionnaire developed based on relevant literature and the objectives of the study. The instrument was divided into sections that captured socio-demographic information, Knowledge, HBV-related risk behaviours, and preventive practices.

2.7 Method of Data Analysis

Data obtained from the field were coded and entered the Statistical Package for the Social Sciences (SPSS) for analysis. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarise the data and describe the characteristics of the respondents in line with the study objectives.

2.8 Ethical Considerations

Ethical approval for the study was obtained from the Adamawa State Ministry of Health and Human Resource with ethical approval number: ADREC 20/04/2026/3. Permission was also sought from community leaders and relevant authorities within the study area. Participation in the study was voluntary, and informed consent was obtained from all respondents before inclusion. Respondents were assured of confidentiality, anonymity, and the right to withdraw from the study at any time without any negative consequences.

3. Results

Table 1: Socio-demographic Characteristics of Respondents (N = 618)

Variable	Category	Frequency (n)	Per cent (%)
Age	18–27	192	31.07
	28–36	158	25.57
	37–46	102	16.50
	47–56	94	15.21
	57 and above	72	11.65
	Total	618	100
Sex	Male	366	59.22
	Female	252	40.78
	Total	618	100.00
Marital Status	Single	297	48.06
	Married	252	40.78
	Divorced	41	6.63
	Widowed	28	4.60
	Total	618	100.000
Educational Status	No formal education	102	16.50
	Primary	128	20.71
	Secondary	167	27.02
	Tertiary	221	35.77
	Total	618	100.00
Occupation	Student	168	27.18
	Civil Servant	112	18.12
	Trader	104	16.83
	Farmer	97	15.70
	Others	137	22.17
	Total	618	100.00
Monthly Income	< ₦20,000	200	32.36
	₦20,000–₦50,000	166	26.86
	₦50,001–₦100,000	120	19.42
	> ₦100,000	132	21.36
	Total	618	100.00

Table 2: Respondents' Knowledge of Hepatitis B Virus (HBV) (N = 618)

Variable	Category	Frequency (n)	Per cent (%)
Hepatitis B is a viral infection	Strongly agree	221	35.76
	Agree	204	33.01
	Undecided	66	10.68
	Disagree	42	6.80
	Strongly disagree	85	13.75
	Total	618	100.00
HBV can be transmitted through infected blood	Strongly agree	228	36.89
	Agree	162	26.21
	Undecided	102	16.50
	Disagree	72	11.65
	Strongly disagree	54	8.74
	Total	618	100.00
HBV can be transmitted through unprotected sex	Strongly agree	198	32.04
	Agree	144	23.30
	Undecided	120	19.42
	Disagree	71	11.49
	Strongly disagree	85	13.75
	Total	618	100.00
HBV can be prevented through vaccination	Strongly agree	234	37.86
	Agree	144	23.30
	Undecided	114	18.45
	Disagree	59	9.55
	Strongly disagree	67	10.84
	Total	618	100.00
Sharing sharp objects can spread HBV	Strongly agree	198	32.04
	Agree	168	27.18
	Undecided	67	10.84
	Disagree	89	14.40
	Strongly disagree	96	15.53
	Total	618	100.00
A person can have HBV without showing symptoms	Strongly agree	156	25.24
	Agree	222	35.92
	Undecided	96	15.53
	Disagree	83	13.43
	Strongly disagree	61	9.87
	Total	618	100.00

Table 3: Respondents' Hepatitis B-Related Risk Behaviours (N = 618)

Variable	Category	Frequency (n)	Per cent (%)
I share sharp objects (razor, needles, clippers)	Always	72	11.65
	Often	93	15.05
	Sometimes	221	35.76
	Rarely	82	13.27
	Never	150	24.27
	Total	618	100.00
I engage in unprotected sexual activity	Always	71	11.49
	Often	108	17.48
	Sometimes	169	27.35
	Rarely	54	8.74
	Never	216	34.95
	Total	618	100.00
I visit uncertified health facilities	Always	47	7.61
	Often	79	12.78
	Sometimes	162	26.21
	Rarely	96	15.53
	Never	234	37.86
	Total	618	100.00
I have undergone procedures like tattooing or scarification	Always	54	8.74
	Often	97	15.70
	Sometimes	137	22.17
	Rarely	18	2.91
	Never	312	50.49
	Total	618	100.00
I ensure screening before blood transfusion	Always	312	50.49
	Often	97	15.70
	Sometimes	90	14.56
	Rarely	35	5.66
	Never	84	13.59
	Total	618	100.00

Table 4: Hepatitis B Prevention Practices Among Respondents (N = 618)

Variable	Category	Frequency (n)	Per cent (%)
I have received Hepatitis B vaccination	Yes	389	62.94%
	No	229	37.06%
	Total	618	100.00
I go for regular HBV screening	Always	150	24.27
	Often	61	9.87
	Sometimes	186	30.10
	Rarely	83	13.43
	Never	138	22.33
	Total	618	100.00
I avoid sharing sharp objects	Always	306	49.51
	Often	120	19.42
	Sometimes	102	16.50
	Rarely	65	10.52
	Never	25	4.05
	Total	618	100.00
I practice safe sex (use of condoms)	Always	294	47.57
	Often	59	9.55
	Sometimes	114	18.45
	Rarely	96	15.53
	Never	55	8.90
	Total	618	100.00
I attend health education programs on HBV	Always	216	34.95
	Often	95	15.37
	Sometimes	186	30.10
	Rarely	78	12.62
	Never	43	6.96
	Total	618	100.00

4. Discussion

The socio-demographic profile showed that respondents were predominantly young and economically active, with more than half (56.64%) under 37 years of age. This finding is consistent with the study conducted by Odo et al. (2020), which reported that young adults constituted most respondents in a study on sexual and reproductive health service utilisation among young people in Nigeria. There was a male predominance (59.22%), and a large proportion of respondents were single (48.06%). This finding is consistent with the study conducted by Oguntunde et al. (2019), who reported high male participation in a community-based health study in Northern Nigeria and attributed this to the social and cultural roles of men as household decision-makers and their greater visibility within community settings. Educational attainment was relatively high, as many respondents had secondary (27.02%) and tertiary education (35.77%), while a smaller proportion had no formal education (16.50%). This finding agrees with the study by Ajayi et al. (2018), who reported that respondents with secondary and tertiary education demonstrated higher levels of health awareness and preventive health practices in community-based studies in Nigeria. The occupational distribution reflected a mixed socio-economic structure, with students forming the largest group (27.18%). Most respondents belonged to low- and middle-income categories, with a significant proportion earning below ₦50,000 monthly. This finding is consistent with the study conducted by Oluwaseyi et al. (2017), who reported that most respondents in community-based health studies in Nigeria belonged to low- and middle-income groups.

On knowledge of HBV, the study found a generally moderate level of awareness. Most respondents correctly identified HBV as a viral infection (68.77%) and recognised blood as a major route of transmission (63.10%). However, knowledge gaps were observed in other areas, as only 55.34% identified unprotected sexual intercourse as a transmission route, and 59.22% recognised sharing of sharp objects as a risk factor. Awareness of asymptomatic infection was also moderate (61.16%). This indicates that although many respondents possessed correct basic knowledge regarding the nature of HBV, a considerable proportion still lacked accurate understanding of disease aetiology. The study aligns with Odo et al. (2020), who found that awareness of hepatitis B among community populations in Nigeria had improved due to public health

education campaigns. However, many respondents still lacked detailed biomedical understanding of the infection. Comparable findings were also reported by Adejoke Auta et al. (2018), who observed moderate levels of HBV knowledge among students and community members in Nigeria, but identified important gaps in understanding of the disease process and prevention.

The study also identified notable risk behaviours among respondents. A considerable proportion (37.36%) reported sharing sharp objects either always or often, while 28.97% engaged in unprotected sexual practices. About 20.39% frequently patronised uncertified health facilities, and 27.35% had engaged in tattooing or scarification practices. These findings indicate ongoing exposure to HBV transmission risks within the population. This observation agrees with findings by Adebimpe et al. (2014), who documented widespread utilisation of informal healthcare providers and patent medicine vendors in Nigeria.

In terms of preventive practices, vaccination uptake was moderate, with 42.55% reporting consistent vaccination behaviour, while 27.02% had never been vaccinated. This finding is consistent with WHO reports, which indicate that despite the availability of safe and effective hepatitis B vaccines and screening services, vaccination coverage among adults and HBV testing rates remain inadequate in many low- and middle-income countries, particularly in sub-Saharan Africa. Screening practices were also suboptimal, as only 34.14% reported regular HBV screening and 22.33% had never been screened. However, relatively good preventive behaviour was observed in the avoidance of sharing sharp objects (68.93%) and condom use (57.12%). The relevant waste management authority should establish a regular, scheduled waste collection service supported by an adequate fleet of collection vehicles, to reduce the proportion of households whose waste is left uncollected for several days at a time.

5. Conclusion

This study assessed the knowledge, risk behaviours, and preventive practices related to Hepatitis B Virus (HBV) among respondents in Jalingo, Taraba State. The findings revealed that the study population was predominantly composed of young, economically active adults, with a relatively high level of educational attainment. Most respondents were males, singles, students, and low- to middle-income earners, reflecting the socio-economic realities of the study area.

The study demonstrated a moderate level of awareness regarding HBV infection, particularly concerning its viral nature, blood-borne transmission, vaccination, and asymptomatic presentation. However, important knowledge gaps still existed, especially regarding sexual transmission and transmission through sharing sharp objects. Although many respondents had heard about HBV and recognised some preventive measures, misconceptions and incomplete understanding remained prevalent among a significant proportion of participants.

Risk behaviours associated with HBV transmission were still common among respondents. Practices such as sharing sharp objects, engaging in unprotected sexual activity, patronising uncertified health facilities, and participating in tattooing or scarification procedures remain prevalent among notable proportions of the population. These behaviours continue to constitute major public health concerns because they facilitate ongoing transmission of HBV within communities.

Despite these challenges, the study also identified encouraging preventive practices. Many respondents reported efforts to avoid sharing sharp objects, ensure blood screening before transfusion, utilise condoms, and participate in HBV-related health education programmes.

6. Recommendations

1. The Taraba State Ministry of Health and Jalingo Local Government Health Department should strengthen community-based HBV awareness and health education campaigns through radio programmes, community outreach activities, religious institutions, schools, markets, and social media platforms.
2. The Federal Ministry of Health, Taraba State Ministry of Health, and Primary Healthcare Development Agency should expand access to affordable and routine HBV screening services by integrating HBV testing into existing primary healthcare services, maternal and child health programmes, HIV clinics, and community health outreaches.
3. Community leaders, traditional rulers, religious organisations, and civil society groups should collaborate with health authorities to discourage practices that increase HBV transmission, including the sharing of razors, clippers, needles, and other sharp instruments.

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