MEDIA Campaigns and Hepatitis B Awareness in North-West Nigeria: (2019–2023)

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Abstract

Hepatitis B virus (HBV) infection remains a major public health concern in Nigeria, with the North-West geopolitical zone bearing one of the highest disease burdens in the country (NAIIS, 2018). Despite increasing government- and donor-funded media activities between 2019 and 2023, public awareness, vaccination uptake, and testing rates in the region remain disappointingly low. This study assessed the effectiveness of these media campaigns on Hepatitis B awareness, knowledge, attitudes, and behavioural outcomes among residents of Kano, Kaduna, and Katsina States.A mixed-methods design was adopted, integrating a quantitative survey of 387 respondents drawn from twelve wards across the three states using a multi-stage sampling technique, with twelve in-depth interviews conducted among health communicators, media producers, and public health officials, as well as a content analysis of thirty campaign materials, including radio jingles, television spots, billboards, and social media posts aired during the study period. The sample size was determined using Yamane's (1967) formula. Quantitative data were analysed using descriptive statistics and Pearson's correlation in SPSS version 26, while qualitative data were analysed thematically following Braun and Clarke (2006). Findings revealed moderate general awareness (74.1%), with radio (40.9%) and television (25.9%) serving as the dominant information channels. Campaign exposure was strongly correlated with knowledge of transmission routes ($r = 0.54$, $p < 0.001$) but only weakly correlated with actual vaccination uptake ($r = 0.21$, $p = 0.013$). The study concludes that the effectiveness of media campaigns in North-West Nigeria depends not only on broadcast frequency but also on the strategic alignment of channel, language, source credibility, and community structures.

Keywords: Hepatitis B; Media Campaign Effectiveness; Health Communication; North-West Nigeria

1.0 Introduction

Viral hepatitis is one of the most pressing public health challenges of the twenty-first century. The World Health Organization (WHO, 2022) reports that approximately 296 million people are living with chronic Hepatitis B globally and that 820,000 people die each year from complicationsincluding liver cirrhosis and hepatocellular carcinoma. The WHO has set the elimination of viral hepatitis as a public health threat by 2030 as a flagship Sustainable Development Goal target, urging Member States to scale up prevention, testing, and treatment services (World Health Organization, 2019).

Sub-Saharan Africa carries a disproportionate share of the global Hepatitis B burden, accounting for approximately 60% of the world's chronic HBV infections (Schweitzer et al., 2021). Within Sub-Saharan Africa, Nigeria is among the countries with the highest absolute number of infected persons. The Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS, 2018) reported a national Hepatitis B surface antigen (HBsAg) prevalence of 8.1%, placing Nigeria firmly within the high-endemicity category. The Nigeria National Hepatitis Elimination Profile (2022) estimates that approximately 20 million Nigerians are currently living with chronic Hepatitis B, with the majority unaware of their infection status.

The North-West geopolitical zone of Nigeria, comprising Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto, and Zamfara States, records the highest regional HBV prevalence in the country, estimated at 12.1% (Muhammad et al., 2021). This figure is significantly above the national average and is driven by a combination of low vaccination coverage, limited access to testing facilities, traditional practices that increase the risk of transmission (such as the sharing of sharp implements during traditional barbering and circumcision), and persistent gaps in public health communication.

Public awareness is a foundational determinant of disease prevention. In the absence of widespread awareness of how Hepatitis B is transmitted, how it can be prevented, and where vaccination and testing services can be accessed, even the most clinically effective interventions will fail to reach the populations that need them most (Glanz, Rimer, & Viswanath, 2015). Media campaigns encompassing radio jingles, television spots, newspaper publications, billboards, and, increasingly, social media content have historically served as the primary vehicles through which Nigerian health authorities and development partners have sought to reach populations at scale (Ajuwon, Yujuico, & Roper, 2021).

Between 2019 and 2023, a number of significant Hepatitis B campaigns were rolled out in Nigeria. These included annual World Hepatitis Day campaigns coordinated by the Federal Ministry of Health, state-level awareness drives by the Kaduna and Kano State Primary Health Care Development Agencies, and donor-supported initiatives by the World Hepatitis Alliance, the Society for Family Health, and Médecins Sans Frontières. However, the extent to which these campaigns translated into measurable changes in knowledge, attitudes, and vaccination behaviour, particularly in the high-burden North-West, has not been systematically evaluated.

This study addresses that empirical gap. It investigates the reach, content, and behavioural impact of Hepatitis B media campaigns in three of the most populous North-West states—Kano, Kaduna, and Katsina—over the five-year period from 2019 to 2023. By combining quantitative survey evidence with qualitative interviews and a content analysis of campaign materials, the study provides a comprehensive mixed-methods assessment of campaign effectiveness, with specific attention to the alignment among channel selection, language, source credibility, and audience characteristics.

The findings of this study are intended to inform government health agencies, media producers, donor organisations, and academic researchers about which aspects of recent Hepatitis B media campaigns have been effective, which have not, and what design adjustments are required to accelerate progress toward Nigeria's 2030 hepatitis elimination goals.

2.0 Statement of the Research Problem

Despite consistent investment in Hepatitis B awareness campaigns by Nigerian health authorities and development partners between 2019 and 2023, the North-West geopolitical zone continues to record the country's highest regional HBV prevalence [12.1%], the lowest birth-dose vaccination coverage, and the lowest testing rates (Federal Ministry of Health, 2022). This persistent gap between media campaign activity and public health outcomes constitutes the core research problem this study seeks to address.

Existing research on health communication in Nigeria has tended to focus on either HIV/AIDS [Ajuwon, Yujuico, and Roper, 2021), maternal and child health (Fatusi and Jimoh, 2022), or polio eradication. Studies specifically evaluating Hepatitis B media campaigns are scarce, and those that exist concentrate on the South-Western or South-Eastern zones [Adekanle, 2020; Okonkwo, 2022], leaving the North-West, the highest-burden region, empirically under-served. (Akinyem, 2022)

Moreover, the relatively few studies that have examined Hepatitis B awareness in the North-West [Ibrahim, Odigie, Aliyu, and Abubakar, 2019; Bawa, 2020; Muhammad et al., 2021] have focused predominantly on prevalence and knowledge levels among specific sub-populations such as pregnant women or healthcare workers, without examining the role and effectiveness of mass media campaigns as a communication strategy, or measuring their impact on the general population.However, the extent to which these campaigns translated into measurable changes in knowledge, attitudes, and vaccination behaviour, particularly in the high-burden North-West, has not been systematically evaluated.

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This study therefore fills three intertwined gaps. First, it addresses a geographical gap by focusing on the under-researched North-West. Second, it addresses a topical gap by providing a limited evaluation of Hepatitis B campaign effectiveness. Third, it addresses a methodological gap through the use of mixed-methods designs that combine survey, interview, and content analysis evidence within a single campaign environment.

3.0 Objectives of the Study

The general objective is to assess the effectiveness of media campaigns on Hepatitis B awareness in North-West Nigeria between 2019 and 2023.

3.1 Specific Objectives

1. To determine the level of public awareness of Hepatitis B among residents of Kano, Kaduna, and Katsina states.
2. To identify the media sources of information on Hepatitis B accessed by residents of the three states.
3. To examine the impact of media campaigns on the knowledge, attitudes, and vaccination behaviour of residents in relation to Hepatitis B prevention.

4.0 Literature Review

4.1 Mass Media

Mass media refers to the channels of communication through which large audiences are reached simultaneously with information, education, and entertainment content. The mass media include traditional broadcast channels such as radio and television, print platforms such as newspapers and magazines, outdoor formats such as billboards and posters, and increasingly, digital and social media platforms [Obafemi, 1994; Atwood and Bullion, 1982]. In the Nigerian context, mass media institutions are concentrated at both federal and state levels, with the Nigerian Broadcasting Commission [NBC]

regulating broadcast content, while a wide range of public and privately-owned stations operate across the country (Adepoju,2017).

4.2 Functions of Mass Media in Health Communication

The Mass Media perform several essential functions in society. According to McQuail's classic typology and the work of Nigerian communication scholars, these include the surveillance function, monitoring and reporting on events in the environment; the correlation function, interpreting events and prescribing responses; the cultural transmission function, passing values and norms across generations; and the mobilisation function, rallying audiences for collective action. In the public health context, the mobilisation and correlation functions are particularly relevant, as media campaigns seek both to inform audiences about health threats and to mobilise them toward preventive behaviours (Glanz, Rimer, and Viswanath, 2015, Yusuf,2021)

In health communication specifically, the mass media serve as the primary vehicle for the diffusion of preventive health information, the construction of social norms around healthy behaviours, and the mobilisation of public support for health policy interventions [Champion and Skinner, 2018]. Successful health campaigns in Nigeria such as the polio eradication drive and the COVID-19 response have demonstrated that well-designed multi-channel media interventions can produce measurable changes in knowledge and behaviour when adequately resourced and culturally grounded. However, the effectiveness of media campaigns is not automatic. As Ajuwon, Yujuico, and Roper note, campaign success depends critically on the choice of channel, the credibility of the source, the cultural and linguistic accessibility of the content, and the existence of complementary service delivery infrastructure. (Akinyemi, 2022,Olawale, 2021)

Campaigns that broadcast messages without accompanying access to testing or vaccination facilities tend to generate awareness without producing behavioural change, a phenomenon known in the literature as the "awareness–action gap". (Fogbound, 2021)

4.3 Hepatitis B

Hepatitis B is a potentially life-threatening liver infection caused by the Hepatitis B virus [HBV], a partially double-stranded DNA virus of the Hepadnaviridae family [Terrault, 2018; World Health Organization, 2022]. The virus is transmitted through exposure to infected blood and other body fluids, primarily via mother-to-child transmission during childbirth, sexual contact, sharing of contaminated needles and syringes, transfusion of unscreened blood and blood products, and the sharing of sharp objects such as razors, clippers, and traditional circumcision tools [Centers for Disease Control and Prevention [CDC], 2021; World Health Organization, 2022].

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Hepatitis B infection can be either acute or chronic. Approximately 5%–10% of adults who contract the virus go on to develop chronic infection, while the figure rises to over 90% among infants infected perinatally [Liu et al., 2021]. Chronic Hepatitis B is the leading cause of liver cirrhosis and hepatocellular carcinoma globally, and accounts for an estimated 820,000 deaths annually [World Health Organization, 2022; Schweitzer et al., 2021)

The Hepatitis B vaccine, available since 1982, is one of the safest and most cost-effective vaccines in clinical use. The World Health Organization recommends a birth-dose followed by two or three additional doses, conferring lifetime protection in over 95% of vaccinated persons (World Health Organization, 2022).The virus is transmitted through exposure to infected blood and other body fluids, primarily via mother-to-child transmission during childbirth, sexual contact, sharing of contaminated needles and syringes, transfusion of unscreened blood and blood products, and the sharing of sharp objects such as razors, clippers, and traditional circumcision tools (Centers for Disease Control and Prevention CDC, 2021; World Health Organization, 2022).Hepatitis B infection can be either acute or chronic. Approximately 5%–10% of adults who contract the virus go on to develop chronic infection, while the figure rises to over 90% among infants infected perinatally (Liu et al., 2021). Chronic Hepatitis B is the leading cause of liver cirrhosis and hepatocellular carcinoma globally, and accounts for an estimated 820,000 deaths annually (World Health Organization, 2022; Schweitzer et al., 2021).

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4.4Prevalence and Impact of Hepatitis B in North-West Nigeria

The North-West geopolitical zone of Nigeria records the highest regional HBV prevalence in the country. The Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS,2018) reported a zonal Hepatitis B surface antigen prevalence of 12.1%, more than double the global average of 3.5% and significantly above Nigeria's national average of 8.1%. Within the zone, Kano, Kaduna, and Katsina states account for approximately 70% of the population and a comparable share of the disease burden [Muhammad et al., 2021; Ibrahim, Odigie, Aliyu, and Abubakar, 2019].[HBsAg]

The drivers of this high prevalence are well documented in the literature. Bawa (2020) and Aliyu (2021) identify several converging factors: low vaccination coverage, especially in rural communities; the persistence of traditional barbering, scarification, and circumcision practices that involve the sharing of sharp implements; high rates of unscreened blood transfusion in private health facilities; limited access to diagnostic services; and the cultural stigmatisation of liver disease, which discourages testing.The impact of Hepatitis B on individuals and communities in the North-West is substantial. Affected individuals frequently progress to chronic disease, cirrhosis, and liver cancer, with the median age of liver cancer diagnosis in the region being significantly lower than the global average [Ibrahim, Odigie, Aliyu, and Abubakar, 2019]. Healthcare costs for managing advanced Hepatitis B sequelae are catastrophic for most affected households, and the working-age mortality associated with the disease contributes to economic productivity losses across the zone [Nwankwo, Nwankwo, and Ani, 2019].

4.5 The Role of Public Awareness and Media Campaigns in Hepatitis B Prevention and Control

Public awareness and media campaigns play a pivotal role in preventing and controlling Hepatitis B by influencing knowledge, attitudes, and protective behaviours at scale (Champion and Skinner, 2018; Ajuwon, Yujuico, and Roper, 2021). Effective campaigns increase population literacy about transmission routes, symptoms, and severity; reduce stigma associated with diagnosis and disclosure; promote vaccination, testing, and screening uptake; and mobilise political and community support for stronger prevention infrastructure

Globally, successful examples include Taiwan's mass immunisation programme, which was supported by sustained public awareness messaging and reduced childhood HBV prevalence from 9.8% to less than 1% within three decades, and (Wong, 2020). In Nigeria, the polio

eradication campaign represents an important model of multi-channel, locally adapted health communication, although replication of its success in the case of Hepatitis B has been elusive [Akinyemi, 2022; Fagbamigbe, 2022].

Recent regional studies offer encouraging but partial evidence. Nwokedi et al. (2020) found that exposure to radio campaigns in Kano significantly increased awareness of HBV transmission routes among traders. Djo (2022) and Okoye (2021) showed that targeted social media campaigns in urban Kaduna increased self-reported vaccination intentions among university students. However, these studies were small in scale, focused on specific sub-groups, and did not measure actual vaccination uptake or behaviour change at population level. By leveraging both traditional and digital media and engaging communities through credible messengers, well-designed campaigns can play a central role in moving North-West Nigeria toward the WHO 2030 elimination targets. This study contributes to that evidence base by providing a region-wide, mixed-methods assessment of campaign effectiveness across the high-burden states of Kano, Kaduna, and Katsina.

5.0 Theoretical Framework: The Health Belief Model

5.1 Origin and Definition of the Health Belief Model

This study is anchored on the Health Belief Model [HBM], one of the most widely applied theoretical frameworks in health communication and behaviour change research. The HBM was originally developed in the 1950s by Godfrey Hochbaum, Irwin Rosenstock, and Stephen Kegels, social psychologists working with the United States Public Health Service, to explain why people failed to take up free tuberculosis screening services despite well-publicised availability [Hochbaum, Rosenstock, and Kegels, 1952; Rosenstock, 1974]. The model has since been refined and applied to a wide range of health behaviours, including vaccination uptake, screening for chronic diseases, sexual health practices, and adherence to treatment regimens [Janz and Becker, 1984; Champion and Skinner, 2018; Glanz, Rimer, and Viswanath, 2015].

5.2 Major Assumptions of the Health Belief Model

The Health Belief Model proposes that an individual's likelihood of engaging in a recommended health-related action depends on six interacting cognitive constructs:

1. Perceived Susceptibility: The individual's subjective belief about the likelihood of contracting a particular disease. The more susceptible an individual perceives themselves to be, the more likely they are to take preventive action.

2. Perceived Severity: The individual's belief about the seriousness of contracting the disease and its potential consequences, both medical and social.

3. Perceived Benefits: The individual's belief about the efficacy of the recommended action in reducing the threat of the disease.

4. Perceived Barriers: The individual's belief about the tangible and psychological costs of the recommended action,

including financial cost, time, inconvenience, pain, and embarrassment.

5. Cues to Action: External stimuli, such as media campaigns, advice from health workers, the illness of a family member, or community announcements that trigger the individual to engage in the recommended behaviour.

6. Self-Efficacy: Introduced into the model by Bandura (1977, 1986), this refers to the individual's confidence in their ability to successfully perform the recommended behaviour.

5.3 Justification of the Health Belief Model for this Study

The Health Belief Model is particularly suited to this study because the principal phenomenon under investigation — the effectiveness of media campaigns in driving hepatitis B awareness and preventive behaviour — falls squarely within the model's explanatory scope. Media campaigns operate as cues to action; their content directly attempts to shape audiences' perceived susceptibility to hepatitis B, their perception of its severity, their belief in the benefits of vaccination and testing, and their assessment of the barriers to action. By framing the analysis through the HBM, the study can systematically examine which constructs are being adequately addressed by current campaigns and which are being neglected.

5.4 Criticism of the Health Belief Model

Despite its widespread application, the HBM has attracted significant criticism. Carpenter (2020) argues that the model places excessive weight on cognitive factors while neglecting the emotional, social, and structural determinants of health behaviour. Critics have also questioned whether individuals make rational and logical decisions based on careful weighing of perceived costs and benefits, noting that real-world health decisions are often shaped by habit, peer influence, and resource constraints [Rosenstock, 1974; Glanz, Rimer, and Viswanath, 2015]. The model's emphasis on linear progression from belief to behaviour has been challenged by more recent ecological and structural frameworks that prioritise socio-environmental context. Nonetheless, the HBM remains analytically useful when applied with awareness of its limitations and supplemented with structural and qualitative inquiry as is done in this study.

5.5 Relevance of the Health Belief Model to this Study

The Health Belief Model provides a relevant lens through which to understand how residents of North-West Nigeria respond to hepatitis B media campaigns and the factors influencing the uptake of preventive behaviours such as vaccination, testing, and avoidance of risky exposures.

In terms of perceived susceptibility, many residents may not perceive themselves to be personally at risk of contracting hepatitis B, particularly where the disease is poorly understood or culturally stigmatised. Media campaigns that communicate concrete prevalence statistics, for example, that the North-West zone has a 12.1% infection rate, can heighten individuals' sense of personal risk and motivate protective action.Regarding perceived severity, campaigns that clearly explain the long-term consequences of untreated hepatitis B, including liver cirrhosis and hepatocellular carcinoma, are

likely to increase the perceived gravity of the disease. In communities where hepatitis B is often asymptomatic or attributed to spiritual causes, educational messages delivered through trusted channels such as radio, mosques, and churches can correct misconceptions and reinforce the seriousness of the condition.

The perceived benefits construct supports the importance of campaigns that clearly communicate the advantages of vaccination and early testing. Specifically, messaging that the hepatitis B vaccine is safe, effective, and increasingly available can motivate individuals to take preventive action. Conversely, perceived barriers such as cost, distance to vaccination centres, fear of needles, religious and cultural reservations, and stigma must be directly addressed in campaign messaging to reduce obstacles to action.

Finally, cues to action are directly provided by media campaigns themselves. Radio jingles, television spots, community announcements by town criers, and messages from religious leaders all serve as cues that remind and encourage audiences to seek vaccination or testing. Combined with attention to self-efficacy building — audiences' confidence that they can navigate the vaccination process — the HBM offers a structured lens through which the design, delivery, and impact of hepatitis B campaigns in the North-West can be evaluated.

6.0 Research Methodology

6.1 Research Design

This study adopted a mixed-methods research design integrating quantitative and qualitative approaches to provide a comprehensive assessment of the effectiveness of media campaigns on hepatitis B awareness in North-West Nigeria between 2019 and 2023. The quantitative component involved a structured questionnaire survey administered to a representative sample of residents across selected communities in Kano, Kaduna, and Katsina states. The qualitative component comprised 12 in-depth interviews with health communicators, media producers, and public health officials, supplemented by a content analysis of 30 campaign materials — radio jingles television spots, billboards, and social media posts — aired within the study period. A survey research design served as the primary strategy, as it is well-suited to generating measurable, generalisable data on awareness levels, media exposure patterns, and health-related behavioural outcomes across a large and geographically dispersed population [Ibrahim and Olorunfemi, 2019].

6.2 Study Area and Population

The study population comprises residents of Kano, Kaduna, and Katsina states, which were purposively selected from the seven states of the North-West geopolitical zone [Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto, and Zamfara] on the grounds of their significantly higher hepatitis B burden, their combined population size, and the concentration of media infrastructure within these states. According to the National Population Commission of Nigeria (2024) and the National Bureau of Statistics (2022), the total population of the three states stood at 34,862,900 at the time of fieldwork, as presented in Table 1.

Where n = required sample size; N = total population (34,862,900); e = margin of error (0.05, at 95% confidence).

Substituting:n = \frac{34,862,900}{1+34,862,900(0.0025)} = \frac{34,862,900}{87,158.25} \approx 400

A downward adjustment was applied to account for anticipated non-response, incomplete questionnaires, and logistical attrition, yielding a final sample size of 387 respondents. This figure is consistent with comparable community-based health communication surveys conducted in North-West Nigeria [Nwankwo, Nwankwo, and Ani, 2019; Ibrahim and Olorunfemi, 2019] and provides sufficient statistical power for descriptive and inferential analyses at the 95% confidence level.

6.4 Sampling Technique

A multi-stage sampling technique was employed:

Stage 1 — Selection of States: Kano, Kaduna, and Katsina were purposively selected on the basis of HBV prevalence and population size.

Stage 2 — Selection of Local Government Areas: Two LGAs were purposively selected from each state using data from State Ministries of Health on hepatitis B burden, yielding six LGAs in total.

Stage 3 — Selection of Wards: Two wards were selected from each LGA using simple random sampling, yielding 12 wards (2 wards × 6 LGAs).

Stage 4 — Selection of Respondents: The 387 questionnaires were distributed proportionally across the 12 wards, yielding approximately 32 respondents per ward. Within each ward, households were selected using systematic random sampling, and one adult respondent per household participated.

6.5 Data Collection Instruments

Two instruments were used. The structured questionnaire captured socio-demographic data, awareness, and media exposure, knowledge of transmission routes, attitudes, and vaccination behaviour. It was administered in English and Hausa to ensure inclusivity. The in-depth interview guide was semi-structured and used with 12 key informants: four health communicators, four media producers, and four public health officials drawn proportionally from the three states. Interviews were audio-recorded with consent and transcribed verbatim. Thirty campaign materials (12 radio jingles, eight television spots, six billboards, and four social media posts) aired between 2019 and 2023 were obtained from State Ministries of Health and broadcaster archives for content analysis.

6.6 Data Analysis

Quantitative data were coded and analysed using SPSS version 26. Descriptive statistics (frequencies and percentages) summarised socio-demographic data and awareness levels, and Pearson's correlation tested the relationships between media campaign exposure and knowledge and behavioural outcomes. Qualitative data were analysed thematically following the six-phase process of Braun and Clarke (2006): familiarisation, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.

7.0 Results/Findings

A total of 387 questionnaires were administered across Kano, Kaduna, and Katsina States, of which 374 were returned and found valid, representing a response rate of 96.6%. The findings are presented in nine tables corresponding to the study's three specific objectives, followed by an interpretation paragraph and a verbatim interview quote.

Table 1: Socio-Demographic Profile of Respondents (N = 374)

Variable	Category	Frequency (n)	Percentage (%)
State	Kano	132	35.3
	Kaduna	121	32.4
	Katsina	121	32.4
	Total	**374**	**100.0**
Gender	Male	201	53.7
	Female	173	46.3
	Total	**374**	**100.0**
Age Group	18 – 25 years	90	24.1
	26 – 35 years	120	32.1
	36 – 45 years	90	24.1
	46 – 55 years	56	15.0
	56 years and above	18	4.8
	Total	**374**	**100.0**
Residence	Urban	206	55.1
	Rural	168	44.9
	Total	**374**	**100.0**
Education	No formal education	45	12.0
	Primary	60	16.0
	Secondary	112	29.9
	Tertiary	139	37.2
	Postgraduate	18	4.8
	Total	**374**	**100.0**
Occupation	Student	79	21.1
	Civil servant	94	25.1
	Trader / Farmer	112	29.9
	Unemployed	67	17.9
	Traditional / Religious leader	22	5.9
	Total	**374**	**100.0**

Source: Field Survey, 2024

The respondents were spread roughly equally across the three states. Males constituted the slight majority (53.7%); the modal age group was 26–35 years (32.1%); 55.1% lived in urban areas; 71.9% had at least secondary-level education; and traders and farmers formed the largest occupational group (29.9%),

reflecting the economic structure of the study area.

"It was easier to reach urban respondents than rural ones. Several rural household heads were initially reluctant to participate, which partly explains the slight urban tilt in the sample." — Public Health Official, Kaduna, 2024

Table 2: General Awareness of Hepatitis B (N = 374)

Awareness Item	Yes (n)	Yes (%)	No (n)	No (%)	Total (n)
Ever heard of Hepatitis B	277	74.1	97	25.9	374
Knows HBV is a viral infection	217	58.0	157	42.0	374
Knows HBV primarily affects the liver	191	51.1	183	48.9	374
Aware HBV can lead to liver cancer	150	40.1	224	59.9	374
Aware HBV can be prevented by a vaccine	172	46.0	202	54.0	374
Aware of mother-to-child transmission	135	36.1	239	63.9	374

Source: Field Survey, 2024

Table 2 reveals moderate general awareness, with 74.1% having heard of Hepatitis B. However, deeper knowledge was weaker: only 40.1% knew that Hepatitis B could lead to liver cancer, and just 36.1% were aware of mother-to-child transmission. Over half (54.0%) did not know that a preventive vaccine exists. Basic name recognition is widespread, but campaigns between 2019 and 2023 did not translate this into substantive health literacy.

"Many have heard the name 'Hepatitis B' from the radio, but when you ask what it does to the body or how it is prevented, they go blank. The campaigns raised the name, not the knowledge." — Health Communicator, Kano, 2024

Table 3: Knowledge of Hepatitis B Transmission Routes (N = 374)

Transmission Route	Aware (n)	Aware (%)	Not Aware (n)	Not Aware (%)	Total (n)
Sharing of needles / syringes	243	65.0	131	35.0	374
Unprotected sexual intercourse	232	62.0	142	38.0	374
Transfusion of unscreened blood	210	56.1	164	43.9	374
Sharing of sharp objects (razors, clippers)	199	53.2	175	46.8	374
Mother-to-child transmission	135	36.1	239	63.9	374
Casual contact (handshake, sharing food)	71	19.0	303	81.0	374

Source: Field Survey, 2024.

Knowledge of the most-publicised transmission routesneedles (65.0%) and sexual contact (62.0%) was comparatively higher, likely reflecting overlap with

HIV/AIDS messaging. Knowledge of mother-to-child transmission was low (36.1%). Crucially, 19.0% held the misconception that Hepatitis B can be contracted through casual contact, indicating persistent myths that campaigns have not corrected.

"Confusion between Hepatitis B and other diseases like HIV is still very common. People think any virus that spreads through blood also spreads through touching. We need messages that specifically correct this." — Media Producer, Katsina, 2024

Table 4: Primary Sources of Hepatitis B Information (N = 374)

Media Source	Frequency (n)	Percentage (%)
Radio	153	40.9
Television	97	25.9
Health workers / Clinics	71	19.0
Friends / Family	60	16.0
Religious institutions	49	13.1
Social media	45	12.0
Newspapers / Magazines	26	7.0
Community town announcers	22	5.9
Billboards / Posters	15	4.0
Total responses	**538***	—

** Multiple-response item; total exceeds N. Source: Field Survey, 2024.*

Radio was the dominant source (40.9%), consistent with its wide reach in both urban and rural areas. Television was second (25.9%), followed by health workers (19.0%). Social media reached only 12.0% of respondents, reflecting limited digital penetration in rural communities.

"Radio is the backbone of health communication in this region. Even people without electricity use battery-powered radios. If you want to reach North-West Nigeria, you start with radio—everything else is supplementary." — Media Producer, Kano, 2024

Table 5: Frequency of Exposure to Hepatitis B Campaign Messages (N = 374)

Frequency of Exposure	Frequency (n)	Percentage (%)
Daily	45	12.0
Several times a week	71	19.0
Once a week	90	24.1
A few times a month	94	25.1
Rarely	56	15.0

Never	18	4.8
Total	**374**	**100.0**

Source: Field Survey, 2024

Most respondents (55.1%) encountered Hepatitis B campaign messages at least once a week. However, 15.0% encountered them only rarely and 4.8% reported never having seen any Hepatitis B campaign—a non-trivial coverage gap particularly affecting rural communities.

"There are weeks when we broadcast nothing on Hepatitis B. Campaigns come in bursts during World Hepatitis Day and then go silent for months. The public needs consistent, sustained messaging, not annual noise." — Public Health Official, Katsina, 2024

Table 6: Channel Preference by Residence (N = 374)

Channel	Urban (n=206)	Urban (%)	Rural (n=168)	Rural (%)	Total (n)
Radio	76	36.9	77	45.8	153
Television	70	34.0	27	16.1	97
Social media	39	18.9	6	3.6	45
Religious institutions	23	11.2	26	15.5	49
Community announcers	7	3.4	15	8.9	22
Health workers / Clinics	41	19.9	30	17.9	71
Total responses	**256***	100	**181***	100	**437***

* *Multiple-response item. Source: Field Survey, 2024.*

A pronounced urban–rural divide is evident. Television was strong in urban areas (34.0%) but weaker in rural (16.1%). Social media reached only 3.6% of rural respondents versus 18.9% urban. Rural respondents relied more on radio (45.8%), religious institutions (15.5%), and town criers (8.9%).

"In rural communities, we depend on the town crier and mosque announcements. Television is in the city. WhatsApp is for the young with smartphones. For the farmer or market woman in the village, radio and the masjid are the strongest channels." — Health Communicator, Kaduna, 2024

Table 7: Vaccination and Testing Behaviour (N = 374)

Variable	Category	Frequency (n)	Percentage (%)
Ever vaccinated against HBV?	Yes	90	24.1
	No	284	75.9
	Total	**374**	**100.0**
Reason for not vaccinating (n=284)	Did not know vaccine exists	108	38.0
	Cost / affordability	77	27.1
	Did not know where to get it	65	22.9
	Fear of side effects	20	7.0

	Religious / cultural reasons	14	4.9
	Total	**284**	**100.0**
Ever tested for HBV?	Yes	105	28.1
	No	269	71.9
	Total	**374**	**100.0**
Intention to vaccinate in future?	Yes	206	55.1
	No	56	15.0
	Unsure	112	29.9
	Total	**374**	**100.0**

Source: Field Survey, 2024

Vaccination uptake was low, with only 24.1% of respondents ever vaccinated. The most common barrier was lack of awareness that a vaccine exists (38.0%), followed by cost (27.1%) and not knowing where to get it (22.9%). Testing was similarly low at 28.1%, although 55.1% expressed intention to vaccinate in the future.

"We see people who say they heard about the vaccine on the radio but thought it was only for babies, or only for the already sick. The campaigns never clearly told them that healthy adults can and should be vaccinated." — Public Health Official, Kano, 2024

Table 8: Attitudes Towards Hepatitis B Prevention (N = 374)

Responses on a 5-point Likert scale (5 = Strongly Agree; 1 = Strongly Disagree).

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)	Total (n)	Mean
Media campaigns increased my awareness of HBV	28.1	36.1	17.9	12.0	5.9	374	3.69
HBV is a serious health threat	32.1	29.9	20.1	11.0	7.0	374	3.69
I feel personally at risk of contracting HBV	13.9	21.9	25.1	24.1	15.0	374	2.96
The Hepatitis B vaccine is safe and effective	20.1	28.1	29.9	13.9	8.0	374	3.38
Campaign messages were in a language I understand	17.9	24.1	21.1	21.9	15.0	374	3.08
Religious / traditional leaders are trusted info sources	36.1	34.0	16.0	9.1	4.8	374	3.88
I would recommend HBV vaccination to family	29.9	35.0	20.1	9.1	5.9	374	3.74

Source: Field Survey, 2024

Respondents generally agreed that campaigns increased their awareness (mean = 3.69) and that HBV is a serious threat (mean = 3.69). However, perceived personal susceptibility was low (mean = 2.96). Language accessibility scored only

3.08—with 36.9% disagreeing or strongly disagreeing that messages were in a language they could understand. Religious and traditional leaders scored the highest trust rating (mean = 3.88) yet were accessed as a primary source by only 13.1% of respondents (Table 4)—a striking gap between trust and reach.

"The gap between trust and reach is the real problem. Everyone trusts the Imam, but the Imam is rarely given the training or materials to talk about Hepatitis B properly. We are not using our most credible messengers." — Media Producer, Kaduna, 2024

Table 9: Pearson Correlation — Campaign Exposure and Knowledge / Behaviour Outcomes (N = 374)

Variable Pair	Pearson r	Sig. (p)	Interpretation
Exposure ↔ Knowledge of transmission routes	0.54	0.001	Strong positive, significant
Exposure ↔ Perceived severity of HBV	0.47	0.001	Moderate positive, significant
Exposure ↔ Intention to vaccinate	0.38	0.001	Moderate positive, significant
Exposure ↔ Actual vaccination uptake	0.21	0.013	Weak positive, significant
Exposure ↔ Stigma reduction	0.18	0.028	Weak positive, significant
Language accessibility ↔ Behaviour change	0.44	0.001	Moderate positive, significant

Correlation significant at the 0.05 level (2-tailed). Source: Field Survey, 2024.

Campaign exposure had a strong, statistically significant association with knowledge of transmission ($r = 0.54$, $p < 0.001$) and a moderate association with perceived severity ($r = 0.47$, $p < 0.001$). However, exposure was only weakly associated with actual vaccination uptake ($r = 0.21$, $p = 0.013$) and stigma reduction ($r = 0.18$, $p = 0.028$). The moderate correlation between language accessibility and behaviour change ($r = 0.44$, $p < 0.001$) reinforces the language-gap pattern observed in Table 8.

"Information without access is meaningless. A jingle in English or standard Hausa on a Kaduna FM station does not reach the Fulani herdsman or the woman in a rural Katsina community. Behaviour change needs messages that speak to people in their own voice." — Public Health Official, Katsina, 2024

8. Discussion

The findings illuminate the operational reality of Hepatitis B media campaigns in North-West Nigeria over the 2019–2023 period and reveal a consistent pattern of strong awareness generation accompanied by weak behavioural translation. This pattern aligns closely with the predictions of the Health Belief Model (Champion & Skinner, 2018) and with previous research on the awareness–action gap in Nigerian health communication (Fagbohun, 2021; Ajuwon, Yujuico& Roper, 2021).

The high level of general awareness (74.1%) suggests that campaigns succeeded in performing the most basic communicative function: making Hepatitis B a recognisable name in the public consciousness. However, the depth of knowledge as measured by understanding of transmission routes, severity, and

prevention was substantially weaker. Only 36.1% of respondents knew about mother-to-child transmission, and 19.0% held the dangerous misconception that Hepatitis B can be transmitted through casual contact. These patterns indicate that campaigns over the period concentrated on surface-level recognition rather than on systematic public education.

Viewed through the HBM, the low score on perceived susceptibility (***M*= 2.96)** is particularly significant. Despite the very high regional prevalence of Hepatitis B (NAIIS, 2018), most respondents did not perceive themselves to be personally at risk. This failure to internalise personal susceptibility helps explain the weak correlation between campaign exposure and actual vaccination uptake (r = 0.21). The model predicts that without a sense of personal risk, even highly persuasive messages about severity and benefits will not translate into action.(Borghouts, J., Eikey, E., Mark, G., De Leon, C., Schueller, S. M., Schneider, M., ... & Sorkin, D. H. (2021).

The channel pattern observed in this study reinforces longstanding findings about the centrality of radio in Nigerian health communication (Akinyemi, 2022; Nwokedi et al., 2020). Radio was the dominant source overall, and the most-used channel in rural areas (45.8%). Television played a strong role in urban areas (34.0%) but only a marginal one in rural communities (16.1%). Social media was negligible in rural areas (3.6%) and modest even in urban ones (18.9%), confirming that digital channels cannot yet substitute for traditional broadcast media in the North-West.

A striking finding is the disconnect between trust and reach in the case of religious and traditional leaders. These figures recorded the highest trust rating of all information sources (mean = 3.88) but were accessed as a primary source by only 13.1% of respondents. Campaign designers between 2019 and 2023 underutilised the region's most credible messengers—a strategic oversight with measurable consequences for behavioural outcomes. This finding echoes Adekanle (2020) and Okonkwo (2022) on the importance of trusted local intermediaries in Nigerian health communication.

The language barrier emerges as a second critical structural weakness. With 36.9% of respondents disagreeing that campaign messages were in a language they could understand, and a moderate correlation between language accessibility and behaviour change **(*r* = 0.21)**the evidence is clear that campaigns produced primarily in English and standard Hausa systematically failed to reach speakers of other local languages, including Fulfulde and Tiv-speaking sub-populations in border areas (Bawa, 2020).

Finally, the dominant barriers to vaccination lack of awareness that a vaccine exists (38.0%), cost (27.1%), and not knowing where to access vaccination services (22.9%) point to a critical failure to integrate campaign messaging with service delivery information. The HBM predicts that high perceived benefits combined with high perceived barriers result in inaction, which is precisely the pattern observed.

9. Conclusion

This study assessed the effectiveness of media campaigns on Hepatitis B awareness in North-West Nigeria between 2019 and 2023, with empirical focus on Kano, Kaduna, and Katsina States. In relation to the first objective, the study found a moderate level of general awareness of Hepatitis B (74.1%) but substantially weaker depth-of-knowledge across transmission routes, severity, and prevention. Campaign exposure generated name recognition but did not translate adequately into substantive health literacy.

In relation to the second objective, radio (40.9%) and television (25.9%) emerged as the dominant information channels, with health workers, religious institutions, and family/social networks playing secondary supporting roles. Social media reach was limited overall and especially weak in rural areas, where traditional channels and community announcers remained central.

In relation to the third objective, media campaign exposure was significantly correlated with knowledge gains ($r = 0.54$) and with perceived severity of Hepatitis B ($r = 0.47$), but only weakly correlated with actual vaccination uptake ($r = 0.21$) and stigma reduction ($r = 0.18$). The findings show an awareness–action gap driven by three converging structural failures: an urban-skewed channel mix, inadequate localisation of language, and the systematic underuse of religious and traditional leaders who are the most trusted but least deployed information sources in the region.

The overall conclusion is that media campaign effectiveness in North-West Nigeria depends not on broadcast frequency alone, but on the strategic alignment of channel selection, language, source credibility, and community structures. Until campaigns reflect these alignments, the region's high Hepatitis B burden is unlikely to fall significantly, and Nigeria's progress toward the WHO 2030 elimination target will remain constrained.

10. Recommendations

1. Government and Health Agencies should integrate Hepatitis B campaign messaging with concrete service-delivery information (locations, hours, cost) and ensure vaccination is available at all primary health centres in the three high-burden states. Sustain campaigns year-round rather than concentrating activity around World Hepatitis Day.
2. Media and Campaign Designers should adopt a multilingual, multi-channel design strategy. Campaign content should be produced in Hausa, Fulfulde, and at least one additional local language per state, and disseminated through radio, religious institutions, town criers, and digital platforms in parallel. Use trusted local messengers - Imams, traditional rulers, and community-respected medical practitioners - rather than political or technocratic figures.
3. NGOs and Development Partners should provide training, briefing notes, and culturally adapted materials to religious and traditional leaders to operationalise the high-trust–low-reach gap identified by this study. Support community-level Hepatitis B testing and vaccination drives co-located with campaign messaging.

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