

Effect of Public Health Campaigns on Awareness and Uptake of Hepatitis B Vaccine in Africa: A Scoping Review

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Submitted: 18th January 2026

Accepted: 2nd May 2026

Published: 30th September 2026

[ID](#): Orcid ID

Abstract

Background: Hepatitis B virus infection remains a major public health challenge in Africa, contributing substantially to liver cirrhosis and hepatocellular carcinoma. Although effective vaccines exist, coverage, particularly for the hepatitis B birth dose, remains suboptimal due to low awareness, stigma, and health-system barriers. The effectiveness of public health in improving knowledge and vaccine uptake across African settings has not been comprehensively synthesised. This review aimed to map and synthesise evidence on the effects of public health campaigns on hepatitis B vaccine awareness, intention, uptake, completion, and timeliness in Africa.

Synthesis: A scoping review was conducted in accordance with PRISMA-ScR guidelines. Searches were performed in PubMed/Medline, PMC, Scopus, Web of Science, BMC, BMJ Open, ScienceDirect, Taylor & Francis, Frontiers, and Google Scholar, as well as key grey-literature sources. Studies published in English between 2015 and 2025 that evaluated public health campaigns or communication-based interventions promoting HBV vaccination in African populations were included. Data were charted and synthesised narratively by campaign modality, target population, and outcomes.

Thirteen studies from African countries met the inclusion criteria. Campaigns used community mobilisation, mass media, school-based education, peer-led outreach, and health-facility-based communication. Target populations included the general public, pregnant women and newborns, healthcare workers, and high-risk community groups. Most campaigns reported improvements in HBV knowledge and awareness, with increased intention to vaccinate. Several interventions also achieved higher vaccination uptake, better series completion, and improved timeliness of the hepatitis B birth dose. Community-engaged and culturally tailored campaigns were particularly effective in increasing trust and acceptance, while birth-dose advocacy programmes strengthened early infant protection. However, vaccine supply constraints, health-system capacity, misinformation, and stigma limited overall impact in some settings. Few studies employed rigorous designs to measure causal effects on vaccination uptake directly.

Conclusion: Public health campaigns can substantially improve hepatitis B vaccine awareness and uptake in Africa, especially when community engagement is integrated with accessible vaccination services and birth-dose delivery systems. Strengthening health-system readiness, ensuring timely birth-dose availability, and improving monitoring of vaccine completion are essential to maximise campaign impact. More robust evaluation designs are needed to guide scale-up and support Africa's progress toward hepatitis B elimination.

Keywords: Hepatitis B, Vaccination, Public health campaigns, Birth-dose vaccine, Health communication, Vaccine uptake, Africa, Scoping review

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Background

Hepatitis B virus (HBV) infection remains a major global public health threat and is particularly severe in sub-Saharan Africa, where it contributes substantially to cirrhosis and hepatocellular carcinoma (1). Timely administration of the hepatitis B birth-dose vaccine can prevent chronic HBV infection; however, low awareness, stigma, and limited access to health services continue to hinder vaccine uptake and completion (2). Recent studies demonstrate that addressing these barriers improves vaccination coverage and reduces the overall HBV burden (3, 4).

Public health initiatives play a critical role in improving knowledge, shaping social norms, and increasing vaccination demand. Their effectiveness is further enhanced when communication activities are integrated with accessible vaccination services. Evidence shows that mass media campaigns, community mobilisation, and school-based education are associated with substantial improvements in HBV awareness and adoption of preventive behaviours (5). However, although awareness often increases, persistent social, cultural, and logistical barriers can limit translation into actual vaccine uptake (6). Therefore, targeted research is needed to identify which campaign strategies most effectively convert knowledge into sustained vaccination coverage (7).

Public health campaigns are most effective when they clearly communicate HBV risks and the benefits of vaccination while also addressing cultural, economic, and structural barriers (8). In this review, the effect of public health campaigns is defined as measurable improvements in HBV awareness, intention to vaccinate, and actual vaccine uptake in African populations. Recent evidence consistently links campaign-driven outreach and education to improved vaccination outcomes (9).

Objective

This scoping review aims to systematically identify and synthesise evidence on the effects of public health campaigns on hepatitis B vaccine awareness and uptake in Africa. It examines key communication strategies, delivery platforms, and stakeholder engagement, including health workers, community leaders, civil-society organisations, birth-dose advocates, and mass media. Outcomes assessed include awareness, intention, uptake, completion, and timeliness of vaccination. The review also identifies evidence gaps to inform future research, policy development, and programmatic interventions.

Methods

Search Strategy

A comprehensive literature search was conducted between January and December 2025 across PubMed/Medline and PMC Open, BMC (Public Health and Global Health), Frontiers, BMJ Open, ScienceDirect, Nature/Springer, Taylor & Francis, Scopus, Web of Science, and Google Scholar. Grey literature was sourced from WHO and Global Hepatitis Programme reports, GlobalHep publications, Hepatitis B Foundation resources, civil-society coalition documents, and national policy reports. The search strategy combined keywords and Boolean operators as follows: ("hepatitis B" AND vaccine AND (campaign OR community OR media OR outreach OR "birth dose" OR advocacy) AND (Africa OR "sub-Saharan Africa")). Information specialists were consulted to optimise sensitivity and relevance.

Eligibility Criteria

Eligibility was guided by the Population-Concept-Context (PCC) framework. Included studies involved African populations, including the general public, pregnant women, newborns, adolescents, students, healthcare workers, and other at-risk groups.

Studies were eligible if they examined public health campaigns or structured communication or outreach interventions aimed at improving HBV awareness, intention, uptake, completion, or timeliness of vaccination, including the birth dose. Eligible designs included quantitative, qualitative, and mixed-methods studies, as well as grey literature reporting measurable outcomes. Only English-language publications from 2015 to 2025 were included. The review was limited to studies published between 2015 and 2025 to ensure the evidence reflects recent public health strategies and vaccination efforts for hepatitis B in Africa. This period coincides with increased global commitment toward hepatitis elimination, particularly following the WHO Global Health Sector Strategy on Viral Hepatitis, which influenced many awareness and vaccination campaigns across the continent. Focusing on the most recent decade helps capture current intervention approaches, health policies, and campaign strategies. Restricting the timeframe is therefore unlikely to affect the study's findings, as earlier studies may reflect outdated practices that are less relevant to current public health programs.

Studies focusing exclusively on clinical management without a campaign component, lacking empirical outcomes, published before 2015, or focused on other hepatitis viruses were excluded. Grey literature without evidence of implementation or outcomes was also excluded.

Study Selection and Data Charting

Two reviewers independently screened titles, abstracts, and full texts using predefined PCC criteria. Data were extracted using a standardised template capturing study characteristics, population, intervention type, campaign modality, delivery setting, implementation partners, and outcomes (awareness, intention, uptake, completion, timeliness, and reported barriers or facilitators).

Data Synthesis

A narrative synthesis was used. Campaigns were grouped by modality: mass media, community-based mobilisation, school-based education, peer-led outreach, and health-facility-based communication. Outcomes were summarised by awareness, knowledge, intention, uptake, completion, and timeliness, including the birth dose.

Following PRISMA guidance, 396 records were identified; 318 duplicates were removed, leaving

78 for screening. After title and abstract review, 49 full texts were assessed. Thirty-six were excluded, and 13 studies were included in the final syntheses, which are embedded in quantitative, qualitative, mixed studies, systematic reviews and scoping review studies. A total of 78 records were identified as potentially relevant and were retrieved for assessment. Titles and abstracts were screened, resulting in 49 studies meeting the criteria for full-text review. Predefined eligibility criteria were then applied to each article. In this phase, 36 records were excluded for not meeting population, concept, or context requirements, or for lacking campaign components or outcome measures. In the end, 13 studies satisfied all criteria and were retained for the scoping review.

The PRISMA flow diagram (Figure 1) shows this multi-stage process. It highlights the systematic and thorough approach used to identify, screen, and select studies for inclusion.

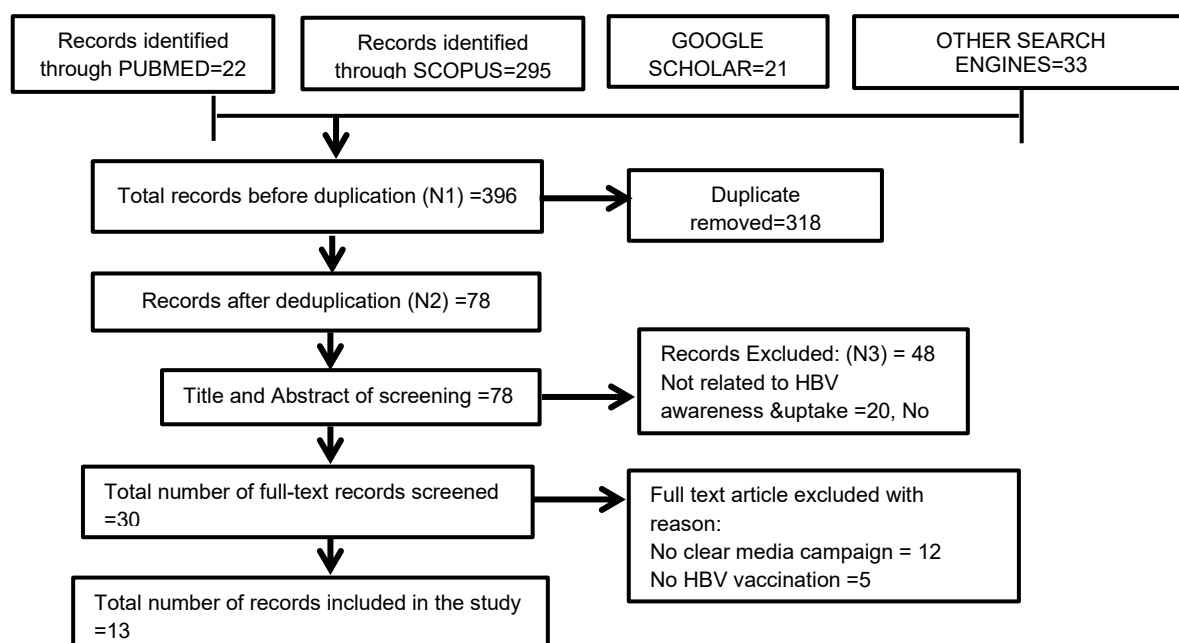


Fig. 1: PRISMA flow diagram identifies and selects relevant studies for this review

Results

This section synthesises the literature on public health campaigns that affect hepatitis B vaccine awareness and uptake in Africa. The review uses a systematic search and sets eligibility criteria. Thirteen studies met these criteria. They come from various African countries and target specific demographic groups: the general public, pregnant women, healthcare workers, students, and other at-risk populations.

The evidence shows that public health campaigns in Africa have used various strategies. These include community-based mobilisation,

mass media campaigns, health education in schools and workplaces, peer-led outreach, and integrated maternal and child health interventions. These campaigns also partnered with local health authorities or community leaders to strengthen engagement. Many incorporated culturally tailored campaigns to build trust. Studies showed measurable gains in HBV awareness and knowledge. Intent to vaccinate increased. In some cases, vaccine uptake, completion, and timely administration, especially of the birth dose, rose significantly. However, barriers such as logistical challenges,

misinformation, and social stigma limited the full campaign impact. The evidence shows that well-designed, context-specific public health campaigns can boost hepatitis B vaccine awareness and uptake in African populations. Sustained efforts, adequate funding, and targeted approaches are still needed to overcome structural and social obstacles. These steps can help improve outcomes.

The studies add important insights into hepatitis B vaccine awareness, uptake, campaign strategies, and HBV outcomes in Africa.

Table 1 presents a summary of the reviewed studies on hepatitis B awareness, vaccination,

and communication strategies across different regions. The table highlights key details such as the authors, year of publication, study title, research type, study location, journal of publication, and sources of access. A total of thirteen studies were reviewed, spanning from 2017 to 2025. The majority of the studies were conducted in Nigeria, reflecting a strong research focus on hepatitis B within the country. Other studies were carried out in countries such as Saudi Arabia, Uganda, and Tanzania, while several addressed the broader African region.

Table 1: Summarises each study and lists the author, year, title, research site, and journal

Author(s)	Year	Title	Study	Place of study	Journal published	Source or access
Abere et al. (9)	2025	Hepatitis B Vaccine Awareness and Uptake: Insight from a World Hepatitis Day Community Survey	Review	Nigeria	Asian Journal of Medicine and Health	Research gate
Abukarah et al. (10)	2025	Awareness of Hepatitis B Among the General Population in Riyadh, Saudi Arabia	Review	Saudi Arabia	PUBMED	NIH
Akabuike et al. (11)	2024	Evaluating hepatitis B screening, prevalence, vaccination coverage, and linkage to care in Abuja, Nigeria: insights from a cross-sectional study	Review	Nigeria	BMC	Springer nature
Asogwa & Oluwakemi (12)	2017	Media Public Enlightenment Campaign and Awareness of Hepatitis B	Review	Nigeria	Eksu Journal of Mass Communication	Google scholar
Ekezie et al. (13)	2024	Vaccination Communication Strategies and Uptake in Africa: A Systematic Review	Review	Africa	Pub med	NIH
Coalition for Global Hepatitis Elimination (14)	2025	Partnering with Civil Society Organisations in Africa to Increase Hepatitis B Birth Dose Vaccination	Review	Africa	Globalhep.org	
Coalition for Global Hepatitis Elimination (15)	2023	Hepatitis B Birth Dose in the African region: Bridging science and advocacy to eliminate mother-to-child transmission of HB	Webinar report, 2023	African Region (Uganda, Malawi, Gambia and Ethiopia)	Globalhep.org	Webinar report,2023
Issa et al. (16)	2021	Hepatitis B vaccination status among health workers in Nigeria: a nationwide survey between January and June 2021	Review	Nigeria	Biomedical (BMC)	Springer Nature
Kemira et al. (17)	2024	Prevalence and factors associated with hepatitis B vaccination uptake and completion among communities targeted for mass vaccination in Gulu: a cross-sectional study	General population	Uganda	Biomedical (BMC)	Springer nature

Quadril et al. (18)	2021	Promoting Hepatitis B Awareness: Evaluating an Educational Approach through Health Care Workers	Review	Tanzania	PMC	NIH
Shah et al. (19)	2020	Increasing Birth-Dose Hepatitis B Vaccination in Nigeria: Qualitative Analysis of Data from a Crowdsourcing Open Call	Review	Nigeria	Oxford academic	Google scholar
Solomon-Rakiepe et al. (4)	2023	Towards contextualised complex systems approaches to scaling-up hepatitis B birth-dose vaccination in the African region: a qualitative systematic review	Campaign	African	Frontiers in Public Health	Front. Public Health
Zovich et al. (20)	2024	The Role of Culturally Appropriate Mediated Communication Strategies to Reduce Hepatitis B and Liver Cancer Disparities	Review	West Africa	Taylor & Francis online	Journal of Health Communication

Most of the studies employed review-based methodologies, including systematic reviews and qualitative analyses, while a few utilised cross-sectional designs and survey approaches. The findings across these studies focused on hepatitis B vaccine awareness, uptake, screening, prevalence, and communication strategies. Notably, some studies emphasised the role of media campaigns, healthcare workers, and culturally appropriate communication in improving awareness and vaccination rates.

In terms of publication outlets, the studies were published in reputable journals and platforms such as BMC, Frontiers in Public Health, Asian Journal of Medicine and Health, Oxford Academic, and PubMed-indexed sources. Access to these studies was primarily through platforms like NIH, Springer Nature, Google Scholar, ResearchGate, and organisational

reports such as those from the Coalition for Global Hepatitis Elimination.

Table 2 summarises the included studies across different regions, particularly Nigeria and other African settings, highlighting varied target populations and campaign approaches such as community outreach, mass media, policy advocacy, and vaccination programs. Generally, the interventions were effective in increasing hepatitis B awareness and initial vaccine uptake; however, many studies reported low completion rates and suboptimal vaccination despite improved knowledge. This indicates that while awareness campaigns are beneficial, more sustained, culturally appropriate, and follow-up strategies are necessary to achieve long-term behavioural change and improved vaccination outcomes.

Table 2: Presents the summary of the included studies covering author, year of publication, study location, target population, campaign modality, and reported outcomes.

Author(s)	Year	Study Location	Target population	Campaign Modality	Key Outcomes
Abere et al. (9)	2025	Nigeria	General population	World Hepatitis Day Community Outreach Survey	Improve HBV vaccine awareness and uptake
Abukaram et al. (10)	2025	Saudi Arabia	General population (age 18 and above)		Increase awareness, but need to leverage the public health campaign
Akabuike et al. (11)	2024	Nigeria	Age 18 and above	Screening and on-site vaccination	Vaccination was high at the first dose and declined subsequently
Asogwa & Oluwakemi (12)	2017	Nigeria	General population	Mass media public enlightenment, such as television, radio, social media and banners.	Increased knowledge while vaccination uptake remained low, indicating that awareness alone was insufficient and that more intensive media campaigns were needed to improve preventive behaviours.
Ekezie et al. (13)	2024	Africa	General population	Community-based strategies using social mobilisation	Increased timely HepB-BD coverage, reduced missed opportunities
Coalition for	2025	Multi-	General	Policy advocacy + civil-	Strengthened national HepB

Global Hepatitis Elimination (14)		country (Senegal, Botswana, Nigeria)	population and policymakers	society campaigns	strategies, improved vaccine timeliness, and sustainability of campaigns
Coalition for Global Hepatitis Elimination (15)	2023	Uganda, Gambia, Ghana and Nigeria	Pregnant women/newborns	Birth-dose advocacy & MoH implementation	Increased timely HepB-BD coverage, reduced missed opportunities
Issa et al. (2021) (16)		Nigeria	Health workers	Electronic data capture	Increasing awareness and suboptimal HBV vaccine uptake
Kemira et al. (17)	2024	Gulu, Uganda	General population	Community mass vaccination campaign	Improved initial uptake, completion of the vaccine series remained low, indicating the need for stronger follow-up strategies and sustained community engagement.
Quadri et al. (18)	2021	Tanzania	Health workers	Educational approach	Improve HBV awareness
Shah et al. (19)	2020	Nigeria	General public, market traders	Community-engaged (faith/community leaders, peer educators, market/outreach days)	Increased HBV awareness, improved screening uptake, and higher willingness to vaccinate
Solomon-Rakiepe et al. (4)	2023	African region	General population	Systematic Review	scale-up HepB BD vaccination programs
Zovich et al. (20)	2024	West Africa	Faith communities, general public	Mass media (radio, social media, culturally tailored messages)	It provides insight into the community preference, such as information that is culturally and linguistically structured, that can be accessed on social platforms and for health education.

The review identified multi-country advocacy efforts and national campaigns conducted throughout different African settings through a crowd-sourced open call in Ghana. At a continental scale, initiatives documented by Global Hepatitis Reports on Partnering to Increase Hepatitis B Birth Dose Vaccination in Africa (15), and regional policy analyses emphasised civil-society engagement and Ministry of Health collaboration. These efforts seek to accelerate HBV elimination. National-level campaigns were identified in Nigeria (16, 19), Ghana (20), Uganda, Malawi, and the Gambia (15). The studies reflected heterogeneous epidemiological contexts and varied health system capacities. Urban-focused interventions frequently use media. Rural settings emphasised outreach and facility-based birth dose initiatives (21). A study from Saudi Arabia reported an increased awareness but a need to leverage public health campaigns (10). Another study from Gulu, Uganda, showed that initial uptake and completion of the vaccine series remained low, indicating the need for stronger follow-up strategies and sustained community engagement (17).

Target Audiences

The campaigns engaged a wide range of target populations. The general public was reached

through mass media, health fairs, and community sensitisation. In addition, pregnant women and newborns were a primary focus, and advocacy and implementation campaigns were specifically aimed at improving the timely administration of the HepB birth dose (14, 19). Furthermore, students and adolescents were reached through school-based vaccination education and outreach (11). Healthcare workers (HCWs) were both direct beneficiaries through vaccination campaigns and indirect facilitators of community messaging, as their influence helped shape community trust (16, 18, 19). Finally, other campaigns targeted faith-based groups and market traders, leveraging trusted community and religious leaders to improve awareness and acceptance (13, 19, 20).

Campaign Modalities

Four main modalities of campaigns were identified:

Community-engaged campaign

These initiatives mobilise faith leaders, community elders, peer educators, and local influencers to increase trust, uptake, and relevance of HBV vaccination messaging (7). These campaigns frequently leveraged outreach events, market days, and household visits, making them especially effective in low-literacy or

rural settings where conventional health communication channels are not easily reachable (22). Community-engaged approaches. Campaigns mobilised faith leaders, peer educators, and community influencers to improve trust, credibility, and uptake. Activities included market outreach days, household visits, and culturally tailored education sessions (13, 19, 20).

Mass media and mediated campaigns

Widespread campaigns used radio, television, digital channels, and social media to disseminate culturally tailored messages about HBV prevention and vaccination. By using local languages, storytelling, and engaging accounts, these campaigns helped address misinformation and broaden their reach, notably among younger populations active on digital media channels (7). Mass media and mediated campaigns are Initiatives that use radio, television, digital media, and social media to reach large audiences, often customising content into local languages and formats that connect with target groups (12, 19, 20).

Birth-dose advocacy and implementation initiatives

Civil society organisations, often in collaboration with Ministries of Health, focused on advocacy for the timely administration of the hepatitis B birth dose (HepB-BD) and scale-up of HepB BD vaccination programs. These campaigns focused on the critical nature of vaccinating newborns within 24 hours of birth and often included capacity-building for health facilities, supply chain improvements, and awareness campaigns targeting expectant mothers (23). Birth-dose advocacy and implementation initiatives.

There are several campaigns specifically focused on strengthening HepB-BD delivery within 24 hours of birth. These efforts included policy advocacy, health worker training, and maternal education, often coordinated by civil society and Ministries of Health (4, 15, 19).

Health worker-facing campaigns

Specific campaigns targeted HCWs by improving their knowledge of HBV risks, prevention, and vaccine recommendations. These initiatives had a dual purpose. The objective was to protect HCWs through vaccination and to equip them with evidence-based knowledge. This knowledge allowed them to educate patients and advocate for HBV vaccination in their communities (24). Health worker-facing campaigns targeted at improving HCW knowledge and vaccine uptake. These interventions protected HCWs as an at-risk group and equipped them with accurate

information for patient education and advocacy (16, 18, 19).

Outcomes of Campaigns

Geography of Campaigns

Across campaigns, outcomes were reported as awareness, intention, uptake, and vaccination timeliness. Community and media-driven campaigns generally improved knowledge and risk perception, with some reporting significant increases in willingness to vaccinate (4).

Birth-dose campaigns showed improvements in timely HepB-BD coverage, although logistical obstacles, such as cold-chain availability and facility delivery rates, limited impact in some contexts (19). Health worker-focused campaigns improved knowledge scores, vaccination coverage among HCWs, and community-level trust in vaccination services (11, 17). Despite positive outcomes, continuing obstacles included limited funding, vaccine supply shortages, logistical constraints in rural areas, and stigma associated with hepatitis B. These barriers highlight the requirement for continuous, multi-pronged strategies that combine policy advocacy, public participation, and health system strengthening (20).

According to a recent cross-sectional study conducted in Gulu, Northern Uganda, research on hepatitis B vaccination campaigns in African contexts frequently focuses on evaluating factors associated with vaccine uptake, but there remain significant gaps in study designs. Few studies, especially randomised controlled trials or quasi-experimental designs, prioritise vaccine uptake as their main outcome. While some studies document hepatitis B awareness and uptake, none implement campaigns to increase uptake; most are surveys rather than active interventions (4). Additionally, reporting on timely HepB-BD administration is limited, and there is little cost-effectiveness data available for campaign components.

Discussion

Campaigns are most effective when they blend community partnership through co-design and peer or faith leadership with easy access, such as mobile teams, facility fast-track, and provider readiness. In these contexts, mass media, especially radio, remain potent when messages are locally tailored and include specific information about where and when to get vaccinated. For birth-dose campaigns, synchronised demand generation and delivery preparedness, such as night and weekend coverage, cold-chain readiness, and maternity staff buy-in, are also important, underscoring the importance of alignment across campaign elements.

To build on these strategies, in-depth appraisal designs such as stepped-wedge or difference-in-differences are necessary to measure impact. Incorporating outcomes related to completion and timeliness, standardised message frameworks (including stigma-aware and myth-busting strategies), health care worker vaccination as a campaign asset, and digital reminders further strengthen these campaigns.

Based on these findings, several clear policy and research recommendations arise

Ministries and partners should: firstly, fund community-co-led hepatitis B virus (HBV) vaccine campaigns; secondly, pair messaging with same-day vaccination opportunities; thirdly, institutionalize hepatitis B birth dose (HepB-BD) advocacy and availability steps; fourthly, systematically track the progression from first dose to completion; and finally, strictly appraise communication channels (such as radio, social media, and interpersonal communication) and support for health care workers (HCWs).

Limitations

This scoping review prioritised HBV-specific evidence from Africa. It also considered relevant lessons from broader immunisation campaigns to inform the interpretation of results. However, some limitations should be noted. Grey literature may be under-captured, and outcome measures may vary among studies, which could influence the comprehensiveness of the review.

Conclusion

Public health campaigns across Africa can substantially improve hepatitis B vaccine awareness and uptake, particularly when community engagement is integrated with health-system delivery strategies. Future efforts should prioritise birth-dose timeliness, full series completion, and healthcare-worker engagement, supported by stronger evaluation designs to sustain progress toward HBV elimination.

List of Abbreviations

BMC: BioMed Central
BMJ: British Medical Journal
HCWs: Healthcare Workers
HBV: Hepatitis B Virus
Hep-BD: Hepatitis B Birth Dose
NIH: National Institutes of Health
PCC: Population-Concept-Context
PMC: PubMed Central
PRISMA: Preferred Reporting Items for systematic reviews and meta-analyses
WHO: World Health Organisation

Declaration

Ethics approval and consent to participate

Not applicable.

Consent for publication

All authors gave consent for the publication of this work under the Creative Commons Attribution Non-Commercial 4.0 International license.

Availability of data and materials

The data supporting the findings of this scoping review are derived from publicly available published articles, reports, and online databases cited within the manuscript references. No primary datasets were generated during the current study. Extracted data tables and screening records used for the review are available from the corresponding author upon reasonable request.

Competing interests

Nil.

Funding

Nil.

Authors' contributions

Conceptualisation: AOO, Methodology: AOO, Resources: PO and OT, Data curation: AOO, Writing and original draft preparation: AOO, Review and editing: SPE, Visualisation: OK, Supervision: SPE. All authors have read and agreed to the published version of the manuscript.

Acknowledgments

We thank Dr Rafiat Anokwuru, Dean of the School of Nursing, Babcock University, Ogun State, Nigeria and postgraduate course coordinator Dr Oluwatomisin O Ope-Babadele of the School of Nursing, Babcock University, Ilishan-Remo, Ogun State, Nigeria. We appreciate them for their support and guidance in carrying out this study.

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