

“FIND THE MISSING MILLIONS” MEDIA CAMPAIGN ON UNDERGRADUATE STUDENTS’ ATTITUDE TOWARDS HEPATITIS B SCREENING TEST IN NORTH-EASTERN NIGERIA

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Authors’ contributions

This study was a collaborative effort of the authors. The authors reviewed and approved the final version of the manuscript for publication.

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ABSTRACT

The study examined the relationship between undergraduate students’ exposure to the “Find the Missing Millions” media campaign and hepatitis B screening and vaccination in North-Eastern Nigeria. The study sought to determine the level of exposure to the campaign among the undergraduate students, identify the major channels through which they received campaign information and determine the proportion of the students who had undergone hepatitis B screening and vaccine. The study adopted a survey design. The study population comprised 65,708 undergraduate students across six purposively selected universities in North-Eastern Nigeria, and Taro Yamane’s formula for sample size determination yielded a sample of three hundred and ninety-three (398) respondents. A multistage sampling procedure was employed. Data were collected using a structured questionnaire and were analysed using descriptive statistics (frequency and percentage); 387 of the 398-questionnaire administered were usable, a response rate of 98.5 per cent. Because only students who had previously encountered campaign materials were eligible for inclusion, the students’ exposure level cannot be taken as an estimate of the campaign’s reach among the wider undergraduate population; the finding instead describes how already-exposed students responded to the campaign. Findings showed that 204 respondents (52.7%) had been screened for hepatitis B, while 183 (47.3%) had not. Of the 204 who were screened, only 30 (14.7%) went on to be vaccinated and 17 (8.3%) were receiving treatment, while 135 (66.2%) took no further action. T-shirts (20.7%), family/friends (20.7%), internet/social media (18.6%) and television (14.5%) were the most frequently reported sources of campaign information. The study concludes that, although exposure to the campaign was widespread among the undergraduate students, this did not reliably translate into screening, and screening did not reliably translate into vaccination or treatment. The study recommends that campaign messaging give clearer guidance on where and how students can obtain vaccination after screening, and that

campaign initiators should establish formal referral links with health facilities so that screened students can readily access vaccination or clinical care.

Keywords: Media campaign, exposure, hepatitis B screening, vaccination, undergraduate students

INTRODUCTION

Hepatitis B remains a serious public health concern worldwide. The infection can cause severe liver complications, including cirrhosis and liver cancer, yet it is generally preventable: available vaccines provide substantial protection against the virus, and early detection makes treatment and proper management possible (WHO, 2024; Coalition for Global Hepatitis Elimination 2025; WHO, 2019). Despite these preventive measures, an estimated 254 million people are living with hepatitis B globally, and many remain undiagnosed and untreated (World Hepatitis Foundation, 2021; WHO, 2024; World Hepatitis Alliance, 2019; Peck, 2018; WHO, 2026). The situation is particularly alarming in Africa because the Centers for Disease Control and Prevention (2022) estimates that about 82 million people living with hepatitis B are in Africa. Nigeria accounts for a considerable share of this burden, with over 20 million people reportedly living with the infection and thousands dying from related complications each year (Coalition for Global Hepatitis Elimination, 2025; WHO, 2022; World Hepatitis Alliance, 2019). The pattern within Nigeria is also uneven, as existing studies suggest that hepatitis B is more prevalent in the northern parts of the country than in the south (Isa et. al, 2015). These figures point to the continuing need for greater public awareness, screening, vaccination and improved health-seeking behaviour. Public health campaigns are among the principal means of addressing this challenge, since they allow health information to reach large and diverse populations through television, radio, print, billboards, banners, T-shirts and social media, and can encourage preventive action (Quattrin, Filiputti & Brusaferrro, 2015; Batta, 2013). However, awareness alone does not necessarily result in preventive health behaviour: students may be informed of the risks of hepatitis B and the value of screening without being sufficiently motivated to act on that information. It was against this background that the “Find the Missing Millions” campaign was launched in August 2018 as a three-year global advocacy and awareness initiative, seeking to improve knowledge of hepatitis B transmission, encourage screening and vaccination, promote early diagnosis and treatment, and identify people living with the virus who remained undiagnosed. There is a particular gap in knowledge concerning undergraduate students in North-Eastern Nigeria, who receive health information from a range of media but may respond to campaign messages in varying ways. While media campaigns have contributed to awareness of, and response to, infectious diseases in Nigeria (WHO, 2026), there is limited evidence on how undergraduate students in North-Eastern Nigeria have specifically responded to the “Find the Missing Millions” campaign. The question that matters are not simply whether students have encountered the campaign, but whether that exposure has been accompanied by screening and further preventive action.

The “Find the Missing Millions” campaign aimed not only to raise awareness of hepatitis B but also to encourage individuals to know their status through screening and, where necessary, to pursue preventive measures. For undergraduate students in North-Eastern Nigeria, however, it is not established that exposure to the campaign has been followed by screening, or that screening has been followed by vaccination or further preventive action. Existing Nigerian studies have examined hepatitis B knowledge, prevalence, vaccination status and general attitudes towards vaccination among university students, but little research has examined students’ exposure specifically to the “Find the Missing Millions” campaign, the channels through which they receive its messages, and whether such exposure is followed by screening. This gap limits understanding of whether the awareness created by the campaign is translating into preventive health behaviour among undergraduate students in the region. Against this background, this study examines undergraduate students’ exposure to the “Find the Missing Millions” media campaign in North-Eastern Nigeria.

Previous Nigerian studies have examined hepatitis B knowledge, screening, vaccination and attitudes among university students, generally within individual institutions and often among students in medical or health-related disciplines (for instance, Akintola, Akinwaare & Ede, 2021; Okwori et al., 2022; Otaigbe et al., 2023; Ayeni et al., 2025; Sani et al., 2025). Much less is known about undergraduate students across North-Eastern Nigeria as

a region, and, more specifically, about how they have responded to the “Find the Missing Millions” campaign. Existing studies do not adequately explain the extent to which these students encounter the campaign, the channels through which they receive its messages, or whether exposure is followed by screening and further preventive action. This study addresses that gap by examining students’ exposure to the campaign, the channels through which they receive its messages and whether they are vaccinated.

METHODOLOGY

The study adopted a survey research design to examine undergraduate students’ exposure to the “Find the Missing Millions” media campaign and their attitude towards hepatitis B screening and vaccination in North-Eastern Nigeria. The study population comprised 65,708 undergraduate students across universities in North-Eastern Nigeria.

Sample size. Using Taro Yamane’s formula, $n = N / (1 + N(e)^2)$, with $N = 65,708$ and a margin of error $e = 0.05$:
 $n = 65,708 / (1 + 65,708 \times 0.0025) = 65,708 / 165.27 \approx 397.6$

Sampling procedure: A multistage sampling technique was adopted. At the first stage, six universities were purposively selected to represent six of the six states of North-Eastern Nigeria: University of Maiduguri (Borno State), Federal University Wukari (Taraba State), Gombe State University (Gombe State), Yobe State University (Yobe State), American University of Nigeria, Yola (Adamawa State) and Abubakar Tafawa Balewa University Bauchi (ABTU).

Table 1: Population, Sample and Valid Responses

University	Population	Allocated sample	Valid responses
University of Maiduguri	14,455.7	87.56	85
Federal University Wukari	11,827.44	71.64	70
Gombe State University	6,570.8	39.8	38
Yobe State University	6,50.8	39.8	39
American University of Nigeria, Yola	9,856.2	59.7	58
			97
ATBU Bauchi	16427	99.5	
Total	65,708	398	387

At the third stage, simple random sampling was used to select individual respondents within each university. Because the study examined how students responded after encountering the campaign, only students who had previously been exposed to “Find the Missing Millions” campaign materials were eligible for inclusion. This eligibility criterion, applied at the point of questionnaire administration, accounts for the 100 per cent exposure recorded among respondents; it does not represent the exposure level of the wider undergraduate population, most of whom were not sampled.

Instruments: A structured questionnaire was adopted for the study. The questionnaire comprises; their exposure to the campaign and their major sources of campaign information.

Data analysis: A total of 398 copies of the questionnaire were administered, of which 387 were correctly completed, returned and usable, a response rate of 98.5 per cent. Descriptive data were analyzed using frequency counts and percentages.

RESULTS

Of the 398 questionnaires administered, 387 were completed, returned and usable, a response rate of 98.5 per cent. Results are presented below.

Table 2: Screening Status of Respondents (N = 387)

Screening Status	Frequency	Percentage (%)
Screened for Hepatitis B	204	52.7
Not screened for Hepatitis B	183	47.3
Total	387	100

Among respondents who met the study's exposure eligibility criterion, 204 (52.7%) reported having undergone hepatitis B screening, while 183 (47.3%) had not.

Table 3: Post-Screening Response of Screened Respondents (n = 204)

Post-Screening Response	Frequency	Percentage (%)
Screened only (no further action reported)	135	66.2
Screened and vaccinated	30	14.7
Screened and receiving treatment	17	8.3
Screened, other outcome reported	22	10.8
Total	204	100

The above table shows that of the 204 respondents who had been screened, only 30 (14.7%) went on to be vaccinated and 17 (8.3%) were receiving treatment, while 135 (66.2%) reported no further preventive action after screening.

Table 4: Respondents' Main Sources of Information about the "Find the Missing Millions" Campaign (N = 387)

Source of Information	Frequency	Percentage of Respondents (%)
Television	56	14.5
Radio	42	10.9
Newspaper/printed materials	8	2.1
Billboard	0	0.0
Banner	49	12.7
T-shirt	80	20.7
Family/Friends	80	20.7
Internet/Social media	72	18.6
Traditional media	8	2.1
Total	387	100

Table 4 indicates that T-shirts (20.7%), family/friends (20.7%), internet/social media (18.6%) and television (14.5%) were the most frequently reported sources of campaign information, while billboards (0.0%) and newspapers/printed materials (2.1%) were the least reported. These figures indicate the sources respondents most often selected; they are not, on their own, evidence that these channels are the most *effective* means of reaching students.

DISCUSSION

Findings from the study indicated that only students who had encountered the campaign were eligible for inclusion, all sampled respondents had, by design, been exposed to it. This is consistent with the eligibility criterion described rather than with a measurement of exposure among the wider undergraduate population. Within this exposed sample, and consistent with Agenda Setting Theory, the campaign's messages appear to have reached students through several concurrent channels. Media channels through which students received

campaign information include; T-shirts, family/friends, internet/social media and television were the most frequently reported sources, while billboards and print media were the least reported. This is broadly consistent with the view that multi-channel campaigns can support awareness and knowledge more effectively than single-channel approaches (Health Communication Capacity Collaboration, 2013; Batta, 2013b). It differs from Nwodu's (2008) finding, reported in a university-based HIV/AIDS campaign, that billboards were the most effective channel through which students know about health-related campaign. On screening following exposure to the campaign, Table 1 shows that just over half of respondents (52.7%) had been screened for hepatitis B, while 47.3 per cent had not, despite all having met the study's exposure criterion. This gap mirrors findings among Nigerian university students more broadly: Okwori *et al.* (2022) found that 62.5 per cent of University of Abuja undergraduates were exposed to hepatitis B campaign yet, only 10.3 per cent were fully vaccinated, and Otaigbe *et al.* (2023) found very high hepatitis B knowledge among Babcock University students that did not correspond to similarly high vaccination levels. The present findings extend this pattern to screening itself: exposure to a hepatitis B campaign does not guarantee that students will act on it by seeking screening.

CONCLUSION

Undergraduate students sampled across six universities in North-Eastern Nigeria who had encountered the "Find the Missing Millions" media campaign received its messages through a combination of interpersonal, print, broadcast and digital channels, with T-shirts, family/friends, social media and television the most frequently reported sources. However, exposure did not reliably translate into hepatitis B screening, and screening did not reliably translate into vaccination: just over half of respondents had been screened, and of those, fewer than one in six had gone on to be vaccinated.

RECOMMENDATIONS

- i. The "Find the Missing Millions" campaign should be sustained among undergraduate students in North-Eastern Nigeria, continuing to use the channels shown to reach students most effectively in this sample particularly peer/family networks, social media and campus-based materials.
- ii. Campaign organisers should establish clear referral links with health facilities and university clinics so that students who undergo screening can readily access appropriate vaccination or clinical care.
- iii. Campaign messaging should place greater emphasis on the specific steps required to obtain vaccination after screening, including where and how students can access the vaccine.

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