

Adesina et al., *Cogent Social Sciences* (2020), 6: 1777814
<https://doi.org/10.1080/23311886.2020.1777814>




MEDIA & COMMUNICATION STUDIES | RESEARCH ARTICLE

Assessment of health communication practice on hepatitis B in Southwest Nigeria

Evaristus Adesina^{1*}, Olusola Oyero¹, Nelson Okorie¹, Lanre Amodu¹, Babatunde Adeyeye¹, Funke Omole¹ and Darlynton Yartey¹

Received: 10 January 2020
 Accepted: 01 June 2020

*Corresponding author: Evaristus Adesina, Department of Mass Communication, Covenant University, Ota, Nigeria
 Email: evaristus.adesina@covenantuniversity.edu.ng

Reviewing editor: Emmanuel O Amoo, Demography and Social Statistics, Covenant University, Ota, Nigeria

Additional information is available at the end of the article

Abstract: In line with the Sustainable Development Goal 3:3 of ending the epidemic of hepatitis by year 2030, there is a global call for strategic information to understand viral hepatitis. Existing studies on hepatitis B virus (HBV) in Nigeria have primarily focused on health practitioners and their patients, to the neglect of detailed empirical data on health communication practice, especially as it relates to semi-urban and urban demographic information. The study set to find out the communication strategies employed by government and non-government organisations working on HBV, as well as the preferred health communication channels for hepatitis B by semi-urban and urban residents. The study adopted a mixed method. The qualitative method assessed the communication strategies employed by government and non-government health-related agencies in informing people on HBV in Nigeria while, the survey examined the preferred health communication channels for HBV management among 582 semi-urban and urban residents in Lagos, Oyo, and Ogun States, Southwest Nigeria. Bivariate analyses were performed on demographic variables and preferred health communication channels for HBV by states. This study found that government agencies and non-government organisations working on hepatitis B predominantly make use of interpersonal communication in getting the people informed of HBV. Also, residents of Southwest Nigeria (elderly,

ABOUT THE AUTHOR



Evaristus Adesina

Adesina, Evaristus is a Researcher and a Lecturer of Mass Communication in Covenant University with high enthusiasm for identifying social problems and proffering solutions through positional and empirical research. Evaristus obtained his Bachelor of Science and Masters Degrees from Bowen University and the University of Lagos, respectively. He recently bagged his Ph.D. from the prestigious Covenant University, Ota, Nigeria. His areas of research include, among others; Health communication, Development Communication, Public relations, Mass Media and Society.

PUBLIC INTEREST STATEMENT

In response to the global call for strategic information to understand viral hepatitis, this study examined communication strategies employed by government and non-government related health agencies on hepatitis B management as well as the preferred health communication channels for hepatitis B by residents of three states in Southwest (Lagos, Oyo and Ogun) empirically known as having the most prevalent rate of HBV in Southwest. The finding of this study will help in the development of a national communication policy on hepatitis B targeted at ending the scourge of the disease in line with the 2030 global elimination mandate as contained in the Sustainable Development Goal 3. Furthermore, the study provides a focal point of direction for related health government and non-government organisations in channeling their viral hepatitis management messages, especially the need for people to be tested and vaccinated against the disease.

71.4% (Lagos), married couples, 53.7% (Ogun)) preferred the internet as a health communication source for hepatitis B information as against traditional means of television, radio and print platforms.

Subjects: Development Communication; Health Communication; Health & Development

Keywords: Communication strategies; government; information use; health communication; hepatitis B; non-government organisation

1. Introduction

Sustainable Development Goal 3:3, as enunciated by the United Nations General Assembly on the 25th of December 2015, aims at putting an end to the epidemic of hepatitis and other communicable diseases for all ages by the year 2030 (World Health Organisation, 2016a). Consequently, the World Health Organisation developed the first global health sector strategy on viral hepatitis. The strategy emerged from the increasing prevalence and complications of hepatitis as well as the “growing recognition of its massive public health burden and the huge opportunities for action” (WHO, 2016b).

For centuries, hepatitis has been a major disease affecting humankind. The World Health Organisation (WHO) has described the Hepatitis B classification as a major health challenge that causes a chronic infection exposing people to a high risk of deaths as a result of cirrhosis and liver cancer (WHO, 2016b). Globally, although 2 billion people retrospectively have traces of HBV infection, an estimated 257 million people are noted to be living with the chronic type (Niizuma et al., 2020; WHO, 2017b). Approximately, 887,000 deaths were reported to have resulted from HBV in the year 2015 (Hyun et al., 2019).

Viral hepatitis in the WHO African region is a highly endemic public health problem, similar to other major communicable diseases, including HIV, tuberculosis and malaria (WHO, 2017a). Though all hepatitis viruses have been noted to be in existent in the region, however, hepatitis B is more endemic with its prevalence among 5–8% of the population (Lemoine et al., 2015). Sub-Saharan Africa has also been reported to have the highest prevalence rate of 6.1% (WHO, 2017b).

The 22.6 million seroprevalence level of hepatitis disease in Nigeria, as observed by the Federal Ministry of Health, has been proven by scientific studies conducted over 40 years ago till date (Anaedobe et al., 2015; Ikobah et al., 2016; Olayinka et al., 2016). Also, a systematic review and meta-analysis of cross-sectional studies on hepatitis B between the year 2000 and 2013 conducted by Musa et al. (2015) reveal that the overall burden base of Nigeria, with an estimated population of 200 million people, is 21million citizens. The implication is 13% of the entire population is infected. The global prevalence categorisation of chronic HBV infection, as noted by Umego et al. (2018), is intermediate (2–7%) and high ($\geq 8\%$). Umego et al. (2018), while citing Mbaawuaga et al. (2008), revealed that Lagos had a 14% incidence rate of hepatitis B, while Ogun and Oyo states had prevalence rate at 8.0% and 8.3% respectively (Anaedobe et al., 2015). Some of the boggling questions are: what are the communication strategies employed by governmental agencies and non-governmental organisations (NGOs) in informing and influencing people on hepatitis disease in Nigeria? What is the preferred health communication channels for hepatitis B management by residents of Southwest Nigeria? The study, therefore, examined the communication strategies adopted by government and non-government organisations in managing hepatitis B as well as investigate the preferred health communication practice on hepatitis B in three Southwest states in Nigeria.

2. Methods and materials

2.1. Research design

The mixed method was used in this study. An in-depth interviews (IDIs) was used to find out the communication strategies and channels adopted by health-related governmental institutions, non-

governmental organisations, in disseminating the message of hepatitis B to patients and the heterogeneous audience. Key health stakeholders in health-related governmental agencies such as the Nigeria Centre for Disease Control (NCDC), a Teaching hospital in Lagos state, and a State hospital in Ogun were selected. Each states in Nigeria has at least 2 Teaching hospitals and 1 was randomly selected in Lagos State for the study. Also, there is a State hospital in each of the 4 regions in Ogun State and one was randomly selected. In addition, key stakeholders in 4 registered non-governmental organisations related to hepatitis disease made up the study population, 3 of such were randomly selected in Lagos state and 1 in Oyo state. The choice of 3 in Lagos is as due to many NGOs located in Lagos state.

The Nigeria Centre for Disease Control, was chosen as a result of its mandate of responding to public health challenges, thereby enhancing Nigeria's preparedness and timely response. They are also charged with detection as well as control of communicable and non-communicable diseases to which hepatitis belongs. The Teaching hospital and the State hospital were also selected because the institutions have a special infectious diseases department, which is made of gastroenterologists. A gastroenterologist is a human health expert with specialized training and unique experience in the management of diseases of the liver and intestinal tract diseases. The non-governmental organisations, were selected based on their vision of ensuring a hepatitis-free Nigeria through the provision of value-added strategies for the prevention of hepatitis. Also, they carry out programmes aimed at educating Nigerians on preventive methods as well as encouraging them to always go for regular screening.

In addition, a cross-sectional study was conducted among 600 respondents in Lagos, Oyo and Ogun States Southwest of Nigeria, out of which only 582 were processable. The three states were purposively chosen because they have a high prevalence of hepatitis B among the other 36 states in Nigeria (Anaedobe et al., 2015; Okocha et al., 2012; Umego et al., 2018). The choice of the three states was further premised on the increased number of advocacy campaigns on the elimination of hepatitis B in the region (Idris & Adejumo, 2020). Such campaigns were carried out by Association for the Study of Liver in Nigeria (ASLIN), Development Africa (DA), Trinity Health Foundation, Live Well Initiative (LWI); Women in Hepatitis Africa (WIHA); Mega Life Sciences.

2.2. Sampling technique and participants selection

A multistage sampling technique was used in delimiting the population to a manageable size. At the first level, the researcher stratified Oyo, Ogun and Lagos states into senatorial districts. Oyo State has three senatorial districts, namely Oyo South, Oyo Central and Oyo North. Ogun East, Ogun Central and Ogun West make up the senatorial districts of Ogun State. While Lagos State has Lagos Central, Lagos West and Lagos East. Using the lottery method of random sampling, the researcher selected two senatorial districts from each state understudy, making a total of six senatorial districts.

In the second stage, the researcher stratified these senatorial districts into local government areas. Two local government areas from each senatorial district were selected. Twelve local governments were selected in all across the states. In the third stage, the researcher further stratified the local governments into wards. Using the lottery method of the simple random sampling technique, two wards were selected from each local government. This makes the total wards chosen to be 24.

Furthermore, the researcher stratified the selected wards into two streets, each using the lottery method. This resulted in 48 selected streets. In the fifth stage, the streets were stratified into residential houses; the researcher made use of the systematic sampling technique to select the residential houses that fall into the sample.

2.3. Ethical consideration

Ethical clearance with the protocol number: **CHREC/014/2018** to conduct the study was obtained from the Covenant University Research and Ethics Committee. A written informed consent form was given to each respondent to confirm their voluntary participation in the study. The entire research procedure was explained to the respondents with the option of withdrawal if they were

no longer comfortable. Data anonymity and security were maintained, as data collected was anonymised, entered and kept in a security-protected electronic platform.

2.4. Data analysis procedure

Qualitative data was generated from the transcript of the IDI, transcribed and analysed using the

Systematic content analysis procedure (Fingeld-Connett, 2014). The transcripts were critically read for depth understanding of the content and extraction of useful themes. The common themes were employed explicitly in answering the question on the communication strategies.

The quantitative data were generated from copies of the questionnaire administered, which were analysed with the use of SPSS23. Data analysis took the combination of two primary statistical techniques of univariate and bivariate analyses. The univariate segment features descriptive statistics, such as frequencies. This was used to profile the demographic and cultural characteristics of the respondents and the distribution of other relevant variables of the study. In the bivariate analysis, a set of cross-tabulations were run to identify the patterns of relationship between selected background variables and conjugal relationship indices.

3. Results

The result is presented in two formats, namely: the results from the in-depth interview that examined the communication strategies being adopted by government and non-government organisations for the hepatitis B virus. The quantitative result presents the preferred health communication channels for hepatitis B by semi-urban and urban residents.

The agencies and institutions selected are the Nigeria Centre for Disease Control, Abuja; Lagos State Teaching Hospital; Ogun State Hospital, Abeokuta. The non-government organisations are Viral Hepatitis Association of Nigeria Lagos; Viral Hepatitis Association of Nigeria, Oyo; Trinity

Health Care Foundation Lagos; and Amazing Care Foundation. The participants selected include

1 program officer, 3 medical officers, and 4 agency coordinators. Details of the demographic characteristics of the participants are shown in Table 1:

3.1. The use of interpersonal communication

This study indicated that most government health agencies examined utilised the interpersonal means of communication in getting the people to be aware of hepatitis B. This is mostly done for patients who have been found positive. For instance, according to Woman Respondent, at the Ogun State Hospital Abeokuta,

“ ... what we do is one-on-one communication and this is done on patients who have been found positive with the disease. ... We tell the patients about the condition and what to do”. (Woman, Medical Officer, Ogun)

The statement of Woman, Head of Gastroenterology was further corroborated in Ogun State Hospital Abeokuta by Deputy medical director, who stated that:

“ ... generally, the patients that come to the hospital have that good opportunity of being educated on hepatitis B”. (Male, Medical Officer, Ogun)

This study, however, discovered that the Ogun State Hospital, Abeokuta does not place importance on hepatitis B communication. In the submission of medical officer, Ogun State Hospital, “the last time we marked World Hepatitis Day was in the year 2014”. He attributed this to financial constraints in printing flyers, banners, posters, T-shirts and other campaign materials.

Table 1. Demographic characteristics of participants

| Variables | Lagos | Ogun | Oyo | Abuja | Total |
|--------------------|--------------|-------------|------------|--------------|--------------|
| Profession | | | | | |
| Gastroenterologist | 1 | 2 | - | - | 3 |
| Counselor | 1 | - | - | - | 1 |
| Gynecologist | 1 | - | - | - | 1 |
| Medical Doctor | 1 | - | 1 | - | 2 |
| Risk Communicator | - | - | - | 1 | 1 |
| Total | 4 | 2 | 1 | 1 | 8 |
| Gender | | | | | |
| Male | 3 | 1 | 1 | - | 5 |
| Female | 1 | 1 | - | 1 | 3 |
| Total | 4 | 2 | 1 | 1 | 8 |
| Designation | | | | | |
| Program Officer | - | - | - | 1 | 1 |
| Medical Officer | 1 | 2 | - | - | 3 |
| Agency Coordinator | 3 | - | 1 | - | 4 |
| Total | 4 | 2 | 1 | 1 | 8 |

In an interview done with a Male medical officer from the teaching hospital, it was discovered, also, that people were mainly communicated with through the interpersonal means. According to the Gastroenterologist, “Thursday was usually dedicated to communicating with patients who have liver-related health challenges”. **Banner on World Hepatitis Day**

In addition, the respondent stated that World Hepatitis Day was another means of interpersonally communicating to the people on HBV. He, however, noted that the event was marked last in the year 2015. According to him,

“ ... during the 2015 World Hepatitis Day, there was a banner posted at the gate about hepatitis. I think there was also a screening that was done for everybody that walked into the hospital”. (Male, Medical Officer, Lagos)

Explaining the inadequate attention given to hepatitis B communication strategies by the government as compared to Human Immunodeficiency Virus, the Gastroenterologist in the Teaching Hospital in Lagos submitted that: “I am very sure that Nigerians would want to know their hepatitis B status. But then, the government is not looking into hepatitis B. We are asking the government to make hepatitis B communication and screening free and I don’t think we are asking too much from the government. I believe the state government should be able to take responsibility for (sic) developing a viable communication strategy for hepatitis in all general hospitals. It is just that we are in a system where people are after their selfish interests”. **(Male, Medical Officer, Lagos)**

The study further enquired into the communication strategies adopted by the Nigeria Centre for Disease Control (NCDC), which has a mandate of responding to public health challenges. It was, however, discovered that NCDC does not have a programme, let alone communication strategies towards hepatitis B in Nigeria. In an interview with the Director of Programmes of the agency, it was stated that hepatitis had not been included in the disease catalogue. According to her,

“ ... what the centre is currently focusing on are diseases such as Ebola virus, Lassa fever, Cholera, HIV/AIDS, Meningitis, Avian influenza and Guinea worm. We hope to include it very soon”. (Woman, Program Officer, Abuja)

3.2. NGOs’ use of interpersonal communication

In finding out the communication strategies adopted by non-governmental organisations to effectively communicate about hepatitis B, the interview revealed that most of the NGOs utilise the interpersonal communication means of seminars, religious programmes, conferences, schools, and public gatherings. According to Agency Coordinator at the Viral Hepatitis Association of Nigeria (VHAN), Lagos State Chapter:

“ ... We do seminars every time. In fact, we will be in a place where we will screen more than one thousand people this coming Saturday. And on Sunday, we should be in a church to create awareness and test them. Last month, we did a screening for not less than eight hundred people. Also, even though Lagos State does not allow the pasting of stickers, we still have a way of pasting our stickers, especially on commercial buses. (Male, Agency Coordinator, Lagos)

He went further to state that:

“ ... we talk to the drivers and the passengers that are there during the time we are pasting those posters about hepatitis. So, we have different means of creating awareness”. (Male, Agency Coordinator, Lagos)

He was, however, quick to submit that the communication strategies presently in use are not in tandem with the rate of hepatitis B's spread. He asserted that "all these means are not enough to create the required awareness".

Similarly, the Viral Hepatitis Association of Nigeria, Oyo chapter utilises the interpersonal means of communication in informing the citizens on the endemic nature of hepatitis B and the need to be vaccinated. In the words of the coordinator:

"Our general approach is any possible means of reaching people and getting them aware of hepatitis, but we are into the presentation of seminars in an organised setting like organisations, companies, associations, or any gathering of people where we are formally invited. We go to give them awareness about hepatitis B. Also, we embark on outreaches to talk to people. This setting might be one-on-one where we talk to people and then we distribute flyers and also, people visit our centre for awareness". (Male, Agency Coordinator, Oyo).

Another interview conducted with the Agency Coordinator, of Amazing Care Foundation, located in Lagos, revealed the different interpersonal communication means adopted in spreading the hepatitis B message. According to the coordinator,

"First of all, we have to meet with the gatekeepers of any community, organisation, or institution. We meet with the gatekeeper or decision makers to discuss with them, pay a kind of advocacy visit, or what we call entry visit. We create awareness most at the time (sic) with a kind of rally, group communication. Sometimes, we have focus group discussions, we can have community dialogues. We also create awareness through youths. Youths mainly champion this, or we do a one-on-one conversation. Sometimes, we go [from] house to house". (Female, Agency Coordinator, Lagos)

As a result of financial constraints, NGOs rarely use traditional mass media such as radio, television and print channels of communication. Explaining this, Agency Coordinator of Amazing Care Foundation, asserted that:

"... we like to do, but for the money involved, and like I said earlier, it is an NGO. When you get to the media, they will show you thousands and thousands, they wouldn't understand that you are running a humanitarian service. That was why we resort (sic) to interpersonal or community interaction and let's- do- it-on-one-on-one (sic) as the case may be". (Female, Agency Coordinator, Lagos)

In a separate interview, the Agency Coordinator, Trinity Health Care Foundation, he explained that the organisation also adopts the interpersonal means such as through symposia, religious gatherings, schools, market places, among others. In his words, he stated that:

"... we try to as much as possible to take advantage of any gathering. We go to churches. We have been to several churches and try to organise symposiums, we talk to them about Hepatitis B. So, we want to commence going to mosques very soon. That one comes with a lot of hitches particularly if the person going is not a Muslim". (Male, Agency Coordinator, Lagos)

3.3. NGOs and online hepatitis B advocacy

Speaking on the online advocacy strategies being adopted, Trinity Health Care Foundation, asserted that:

"... we engage in online advocacy. A lot of people may not be able even to have [the] grace to attend seminars, programmes, even when you organise (sic). Still, in the comfort of their homes, offices, marketplace, business locations, they can stream on their phones and get nearly all the same information you would have passed. So, what we do is that we create posts, stories, videos, which can be streamed. (Male, Agency Coordinator, Lagos)

He further explained that online advocacy channels include social media platforms such as Facebook, WhatsApp, Instagram, among others. In his words,

“ ... We take pictures, design graphics, infographics that try to depict the hepatitis B message we want to convey. And then, we utilise the social media page, even though some sorts of (sic) like Facebook, WhatsApp, Instagram are highly infiltrated by unserious people. However, we ensure that it is still a means which we can still send our information across. So, we create awareness on HBV on social media and through instant messaging, email messaging, and YouTube”. (Male, Agency Coordinator, Lagos)

Speaking further on the methods of online communication strategies, Director Trinity Health Care Foundation said that the organisation adopts the edutainment techniques by building communication about the hepatitis B disease around short storylines. According to him:

“We create videos because we know that people love movies, pictures. We create stories because we believe that sometimes people get bored when they read a lot of things, so we believe sometimes, painting a story or picture, using a story can attract people to read and find more. If you go to our Facebook page, you will see stories. Many of our posts start with a story. People love to listen to stories; so, once they read the story, it galvanises their interest, and in the end, we are able to pass out (the) message on Hepatitis B”. (Male, Agency Coordinator, Lagos)

Trinity Health Care Foundation further justified the adoption of the edutainment technique by stating that: *“People may not want to read. A lot of people don’t love reading books, but they love watching movies. Why? Because they love to see movies in pictures. So, we create those that convey the message on hepatitis B”. (Male, Agency Coordinator, Lagos)*

3.4. Government and non-government organisations HBV communication strategies

Figure 1 explains the communication approaches of government-related agencies working on hepatitis and non-government organisations. Government institution fundamentally employs the interpersonal communication technique in providing treatment information for patients who willingly come for the test. Non-government organisations on the other hand utilises a more communicative approach of interpersonal communication as well as online platforms in providing both treatment and preventive information against HBV.

Figure 1. Illustration on government and nongovernment communication strategies on hepatitis B virus.

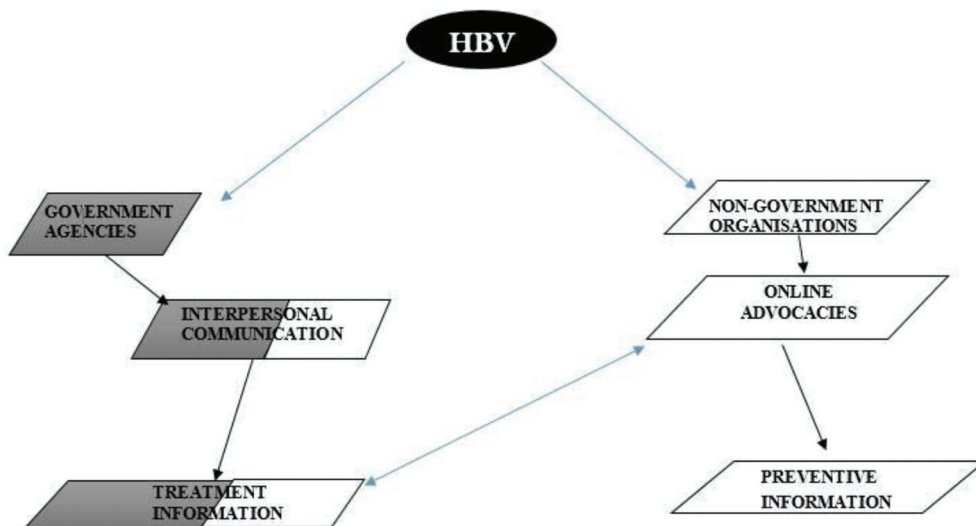


Table 2. Preferred health communication channel by respondents age

| Lagos | Preferred health communication channel by respondents age | | | | | Interpersonal | | Total |
|-------------|---|------------|----------|-------------|----------|---------------|-----------|-------|
| | Radio | Television | Internet | Print Media | Networks | Networks | Networks | |
| Below 18 | 16.7% | 8.3% | 33.3% | 16.7% | 25.0% | 25.0% | 100.0% | |
| 18-25 | 13.7% | 15.8% | 40.0% | 22.1% | 8.4% | 8.4% | 100.0% | |
| 26-35 | 17.8% | 6.7% | 40.0% | 22.2% | 13.3% | 13.3% | 100.0% | |
| 36-45 | 15.3% | 25.4% | 35.6% | 15.3% | 8.5% | 8.5% | 100.0% | |
| 46-55 | 3.8% | 19.2% | 53.8% | 15.4% | 7.7% | 7.7% | 100.0% | |
| 55- Above | 14.3% | 14.3% | 71.4% | 0.0% | 0.0% | 0.0% | 100.0% | |
| | | | | | | | (289)100% | |
| Ogun | | | | | | | | |
| Below 18 | 14.3% | 14.3% | 42.9% | 21.4% | 7.1% | 7.1% | 100.0% | |
| 18-25 | 35.4% | 4.2% | 31.3% | 22.9% | 6.3% | 6.3% | 100.0% | |
| 26-35 | 37.5% | 8.3% | 45.8% | 0.0% | 8.3% | 8.3% | 100.0% | |
| 36-45 | 22.2% | 11.1% | 55.6% | 11.1% | 0.0% | 0.0% | 100.0% | |
| 46-55 | 8.3% | 16.7% | 58.3% | 16.7% | 0.0% | 0.0% | 100.0% | |
| 55—Above | 0.0% | 0.0% | 100.0% | 0.0% | 0.0% | 0.0% | 100.0% | |
| | | | | | | | (119)100% | |
| Oyo | | | | | | | | |
| Below 18 | 14.3% | 21.4% | 28.6% | 7.1% | 28.6% | 28.6% | 100.0% | |
| 18-25 | 22.2% | 13.9% | 38.9% | 2.8% | 22.2% | 22.2% | 100.0% | |
| 26-35 | 28.8% | 15.3% | 40.7% | 8.5% | 6.8% | 6.8% | 100.0% | |
| 36-45 | 33.3% | 10.3% | 28.2% | 12.8% | 15.4% | 15.4% | 100.0% | |
| 46-55 | 14.3% | 9.5% | 52.4% | 9.5% | 14.3% | 14.3% | 100.0% | |
| 55—Above | 80.0% | 0.0% | 0.0% | 20.0% | 0.0% | 0.0% | 100.0% | |
| | | | | | | | (174)100% | |

3.5. Preferred health communication channels for hepatitis B management by residents of Southwest Nigeria

Table 2 shows the preferred health communication channels for hepatitis B across the three states. In Lagos State, majority of the respondents across all the age groups declared their choice of internet for hepatitis messages. Specifically, 33% of below 18, 40% of age brackets 18–25 and 26–35. In addition, 35% of ages 36–45, 53% in the range of 46–55 and 71.4% of respondents between 55 and above preferred the internet as a means of communication for HBV messages. Respondents in Ogun state expressed a similar desire for hepatitis information through the internet channels of communication. In details, 42.9%, 31.3%, 45.8%, 55.6%, 58.3% and 100 % of the respective age groups stated they prefer messages on HBV internet-enabled platforms. In Oyo state, 28.6% of the respondents in the age group of 18 below declared that they prefer the internet-mediated platforms in getting messages on hepatitis B. In addition 38.6%, 4–0.7%, 28.2% and 52.4% of age groups 18–25, 26–35, 36–45, 46–55 prefer to get related information on HBV from their internet platforms. Respondents amounting to 80% within the age group 55 and above, however, declared their preference for the radio for information on hepatitis B. Generally, residents of the three states are inclined to an online platform for health information on the virus.

Table 3 shows the preferred health communication channels of respondents according to their marital status across the three states under study. Among the single respondents in Lagos Ogun and Oyo States, majority representing 40.7%, 36.1% and 45.1% respectively expressed their choice for internet-mediated platforms. Majority of respondents in the proportion of 42.2 %, 53.7% and 32.3% in the category of married in Lagos, Ogun and Oyo respectively also opted for the internet channels of communication. Interestingly, among single parents, 75% in Lagos, 50% in Ogun and 40% of Oyo respondent chose for radio as a source of information on hepatitis B. An examination into all the marital categories in three states shows that majority prefer the internet-mediated channels for hepatitis messages.

Table 4 shows the preferred health communication channels for hepatitis B in the three states understudy across the respondents' educational qualification. The educational qualification categories include Senior Secondary School Certificate, Nigeria Certificate in Education, Ordinary National Diploma, Higher National Diploma, Bachelor of Science as well as Postgraduate qualification. The preferred communication channel in the NCE across the three states shows that 39.3%, 51.7% and 55.0% of respondents on Lagos, Ogun and Oyo prefers the internet-mediated channels for information on HBV. In the grouping of Ordinary National Diploma, most of the respondents representing 43%, 33% and 55% in Lagos, Ogun and Oyo respectively stated their desire for information on HBV via the internet platforms. Results from the HND category reveals that although 34.7% of the respondents in Oyo states prefer the radio channel, however in Lagos and Ogun States, 36.7% and 45% of the respondents prefer the internet-mediated channels.

In the Bachelors classification, 38% of Oyo state respondents expressed their preference for radio channels of communication for HBV messages. 38.5% of Lagos and 42.9% Ogun respondents, however, chose internet platforms for messages on the disease. At the postgraduate category, 57.1%, 62.5% and 50% respondents in Lagos, Ogun and Oyo respectively noted that they prefer the internet to provide them information on HBV messages.

Table 5 shows the result of different occupational demographic variables of respondents in Lagos, Ogun and Oyo states and their preferred health communication channel for hepatitis B. Across all the occupational classifications in Lagos State majority of the respondents prefer to be informed on HBV from internet-mediated channels. Specifically, 43.4% of traders, 38.7% of artisans, 43.9% of those with white-collar jobs, 35.7% of students, 42.3% of unemployed and 42.2% of those in the category of others opted for internet source of information on the disease.

The majority of respondents in Ogun State and Oyo states have common channels for HBV dissemination. While 43.2% of traders in Oyo state noted that they prefer the internet, 33.3%

Table 3. Preferred health communication channel by respondents age

| Lagos | Radio | Television | Internet | Print media | Interpersonal networks | Total |
|---------------|--------------|-------------------|-----------------|--------------------|-------------------------------|------------------|
| Single | 14.7% | 10.7% | 40.7% | 23.3% | 10.7% | (150)100% |
| Married | 12.6% | 20.0% | 42.2% | 15.6% | 9.6% | (135)100% |
| Single parent | 75.0% | 0.0% | 0.0% | 0.0% | 25.0% | (4)100% |
| Total | 14.5% | 14.9% | 40.8% | 19.4% | 10.4% | (289)100% |
| Ogun | | | | | | |
| Single | 31.1% | 6.6% | 36.1% | 19.7% | 6.6% | (61)100% |
| Married | 22.2% | 9.3% | 53.7% | 11.1% | 3.7% | (54)100% |
| Single parent | 50.0% | 25.0% | 25.0% | 0.0% | 0.0% | (4)100% |
| Total | 27.7% | 8.4% | 43.7% | 15.1% | 5.0% | (119)100% |
| Oyo | | | | | | |
| Single | 21.1% | 11.3% | 45.1% | 8.5% | 14.1% | (71)100% |
| Married | 30.1% | 14.0% | 32.3% | 8.6% | 15.1% | (93)100% |
| Single parent | 40.0% | 20.0% | 20.0% | 10.0% | 10.0% | (10)100% |
| Total | 27.0% | 13.2% | 36.8% | 8.6% | 14.4% | (174)100% |

Table 4. Preferred health communication channel by respondents educational qualification

| | Radio | Television | Internet | Print media | Interpersonal networks | Total |
|---------------------------|--------|------------|----------|-------------|------------------------|-----------|
| NCE | 7.1% | 14.3% | 39.3% | 25.0% | 14.3% | (56)100% |
| Ordinary National Diploma | 17.7% | 13.9% | 43.0% | 16.5% | 8.9% | (79)100% |
| Higher National Diploma | 16.7% | 11.7% | 36.7% | 23.3% | 11.7% | (60)100% |
| B.Sc, B.Ed, B.Tech | 15.4% | 20.5% | 38.5% | 16.7% | 9.0% | (78)100% |
| Postgraduate | 14.3% | 7.1% | 57.1% | 14.3% | 7.1% | (14)100% |
| SSCE | 0.0% | 0.0% | 100.0% | 0.0% | 0.0% | (2)100% |
| Total | 14.5% | 14.9% | 40.8% | 19.4% | 10.4% | (289)100% |
| Ogun NCE | 20.7% | 10.3% | 51.7% | 13.8% | 3.4% | (29)100% |
| Ordinary National Diploma | 30.3% | 6.1% | 33.3% | 18.2% | 12.1% | (33)100% |
| Higher National Diploma | 25.0% | 20.0% | 45.0% | 10.0% | 0.0% | (20)100% |
| B.Sc, B.Ed, B.Tech | 39.3% | 3.6% | 42.9% | 10.7% | 3.6% | (28)100% |
| Postgraduate | 0.0% | 0.0% | 62.5% | 37.5% | 0.0% | (8)100% |
| SSCE | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% | (1)100% |
| Total | 27.7% | 8.4% | 43.7% | 15.1% | 5.0% | (119)100% |
| Oyo NCE | 22.5% | 7.5% | 55.0% | 7.5% | 7.5% | (40)100% |
| Ordinary National Diploma | 12.8% | 10.3% | 46.2% | 10.3% | 20.5% | (39)100% |

(Continued)

Table 4. (Continued)

| | Radio | Television | Internet | Print media | Interpersonal networks | Total |
|-------------------------|--------------|-------------------|-----------------|--------------------|-------------------------------|--------------|
| Higher National Diploma | 34.7% | 14.3% | 26.5% | 10.2% | 14.3% | (49)100% |
| B.Sc, B.Ed, B.Tech | 38.2% | 14.7% | 17.6% | 8.8% | 20.6% | (34)100% |
| Postgraduate | 25.0% | 25.0% | 50.0% | 0.0% | 0.0% | (8)100% |
| SSCE | 25.0% | 50.0% | 25.0% | 0.0% | 0.0% | (4)100% |
| Total | 27.0% | 13.2% | 36.8% | 8.6% | 14.4% | (174)100% |

Table 5. Preferred health communication channel by respondents occupation

| Lagos | Radio | Television | Internet | Print media | Interpersonal networks | Total |
|------------------|--------------|-------------------|-----------------|--------------------|-------------------------------|--------------|
| Trader | 6.6% | 7.9% | 43.4% | 25.0% | 17.1% | (76)100% |
| Artisan | 19.4% | 12.9% | 38.7% | 16.1% | 12.9% | (31)100% |
| White collar job | 17.1% | 29.3% | 43.9% | 7.3% | 2.4% | (41)100% |
| Student | 14.3% | 15.7% | 35.7% | 27.1% | 7.1% | (70)100% |
| Unemployed | 19.2% | 3.8% | 42.3% | 23.1% | 11.5% | (26)100% |
| Others | 20.0% | 20.0% | 42.2% | 8.9% | 8.9% | (45)100% |
| Total | 14.5% | 14.9% | 40.8% | 19.4% | 10.4% | (289)100% |
| Ogun | | | | | | |
| Trader | 23.8% | 28.6% | 33.3% | 9.5% | 4.8% | (21)100% |
| Artisan | 16.7% | 0.0% | 50.0% | 16.7% | 16.7% | (12)100% |
| White collar job | 40.0% | 6.7% | 46.7% | 6.7% | 0.0% | (15)100% |
| Student | 28.9% | 4.4% | 37.8% | 22.2% | 6.7% | (45)100% |
| Unemployed | 33.3% | 0.0% | 50.0% | 16.7% | 0.0% | (6)100% |
| Others | 25.0% | 5.0% | 60.0% | 10.0% | 0.0% | (20)100% |
| Total | 27.7% | 8.4% | 43.7% | 15.1% | 5.0% | (119)100% |
| Oyo | | | | | | |
| Trader | 22.7% | 9.1% | 43.2% | 6.8% | 18.2% | (44)100% |
| Artisan | 36.4% | 0.0% | 45.5% | 9.1% | 9.1% | (11)100% |
| White collar job | 33.3% | 13.9% | 33.3% | 8.3% | 11.1% | (36)100% |
| Student | 18.8% | 15.6% | 40.6% | 6.3% | 18.8% | (32)100% |
| Unemployed | 16.7% | 25.0% | 25.0% | 0.0% | 33.3% | (12)100% |
| Others | 33.3% | 15.4% | 30.8% | 15.4% | 5.1% | (39)100% |
| Total | 27.0% | 13.2% | 36.8% | 8.6% | 14.4% | (174)100% |

stated they want the same. For respondents with white-collar job categories, 46.7% of respondents expressed their desire for internet source messages, 33.3% of respondents in Oyo also want the internet. A general look at the result across all the occupational variables in the three states, reveals that majority of the respondents chose the internet platform as against channels such as radio, radio, print media as well as interpersonal networks.

The preferred health communication channel for hepatitis B was also examined across religious demographic variables of Christianity, Islam as well as the Traditional religion. Table 6 shows the result from Lagos, Ogun and Oyo States. In Lagos, Ogun and Oyo states, 41.5%, 45.2 and 37.5 % of Christians respectively chose the communication channels of in for HBV message. The result from Muslim respondents in the three states shows that from the list of communication channels, 40.5% in Lagos, 37.5% Ogun and 42.4% of Oyo respondents also chose the internet-mediated sources. Although traditional worshipper's respondents were few in the three states, however, the majority of them preferred the radio channel for messages on hepatitis B.

4. Discussion

Achieving the SDG 3:3 objective on the elimination of viral hepatitis by 2030 requires a concerted effort by all stakeholders. This study has revealed that both government and non-government organisations mostly make use of interpersonal communication for HBV management in Nigeria, however, with different approaches. Government organisations, on the one hand, employ the interpersonal means specifically for treatment information, especially for patients who come to get tested for HBV. In essence, such information through interpersonal means are focused on patents management and treatment procedures. This unidirectional approach supports the findings of Wogu et al. (2019), which affirmed that Nigeria's government at all levels are paying leap service to the fight against HBV.

This study revealed that the inadequate attention given to hepatitis B communication strategies and management by the government is as a result of little or no response of international aid and donor agencies towards hepatitis. The government approach as revealed in this study has been noted by previous studies (Adesina et al., 2020; Ejiogor et al., 2010; Emechebe et al., 2009; FitzSimons et al., 2016; Nwokediuko, 2011). This explains the high mortality and morbidity rate from diseases in Nigeria. The meagre commitment of the government is not only seen in hepatitis but other major endemic diseases. For instance, a report from the National Agency for the Control of Aids has it that 95% of HIV and AIDS funding in Nigeria is mainly from international donor agencies. According to the Director-General of the agency, "95percent of the HIV/AIDS [funding] for over 1.1 million Nigerians' treatment has come from the United States of America and other global funding bodies" (NAN, 2018).

Another significant finding of this study is non-government organisations working on HBV campaigns employ the interpersonal means of communication for both treatment and preventive information. This is contrary to the government's focus on just the former. Most NGOs working on HBV utilises the interpersonal means of communication in engaging different strata of the community including religious institutions, higher school of learning, motor parks, markets as well as other social gatherings for creating knowledge, influencing attitude as well as encouraging wider adoption of preventive measures towards hepatitis B. Such strategy has been noted to be effective in cancer management (Jemal & Brawley, 2019), HIV/AIDS stigmatisation management (WHO, 2016a).

The choice of interpersonal communication in the dissemination of hepatitis B information by NGOs as against mass media channels can be predicated on the expensiveness of various traditional media commercial platforms Scholars such as Hanan (2009); LaCroix et al. (2014) have submitted that though the mass media could be useful in health communication campaigns, it is, however, expensive to sustain.

Furthermore, this study revealed that non-government health agencies pay more attention to interpersonal health communication aimed at positive attitudinal change than their government

Table 6. Preferred health communication channel by respondents religion

| Lagos | Radio | Television | Internet | Print media | Interpersonal networks | Total |
|--------------|--------------|-------------------|-----------------|--------------------|-------------------------------|------------------|
| Christianity | 13.0% | 15.0% | 41.5% | 17.5% | 13.0% | (200)100% |
| Islam | 16.5% | 15.2% | 40.5% | 22.8% | 5.1% | (79)100% |
| Traditional | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% | (2)100% |
| Others | 12.5% | 12.5% | 37.5% | 37.5% | 0.0% | (8)100% |
| Total | 14.5% | 14.9% | 40.8% | 19.4% | 10.4% | (289)100% |
| Ogun | | | | | | |
| Christianity | 26.2% | 8.3% | 45.2% | 15.5% | 4.8% | (84)100% |
| Islam | 29.2% | 8.3% | 37.5% | 16.7% | 8.3% | (24)100% |
| Traditional | 42.9% | 0.0% | 42.9% | 14.3% | 0.0% | (7)100% |
| Others | 25.0% | 25.0% | 50.0% | 0.0% | 0.0% | (4)100% |
| Total | 27.7% | 8.4% | 43.7% | 15.1% | 5.0% | (119)100% |
| Oyo | | | | | | |
| Christianity | 26.2% | 12.7% | 35.7% | 9.5% | 15.9% | (126)100% |
| Islam | 24.2% | 15.2% | 42.4% | 6.1% | 12.1% | (33)100% |
| Traditional | 42.9% | 14.3% | 28.6% | 7.1% | 7.1% | (14)100% |
| Others | 0.0% | 0.0% | 100.0% | 0.0% | 0.0% | (1)100% |
| Total | 27.0% | 13.2% | 36.8% | 8.6% | 14.4% | (174)100% |

counterparts. Most government health institutions where interviews were conducted did not recognise and observe World Hepatitis Day, which was aimed at increasing the awareness of people towards hepatitis prevention and management. The Gastroenterologist interviewed at the Lagos State University Teaching Hospital, for instance, did not know when the World Hepatitis Day was observed. It was further discovered that the day was last observed in Teaching hospital in Lagos in the year 2014.

Interpersonal communication has been noted to play a fundamental role in the effects of health campaigns on actual health behaviour (Van den Putte et al., 2011; YeshuaKatz & Martins, 2013; Adesina, Oyero, et al., 2018). While health campaigns have been adjudged effective in engendering positive behavioural change, some studies have reported some mixed effects such as unfavourable boomeranging (Snyder & Blood, 1992), to no effect (Hornik et al., 2008) to a moderately small positive impact (Noar, 2006; Snyder & Hamilton, 2002). For any health campaign to be effective, Hendriks et al. (2014) have asserted that the effectiveness is dependent on the modifying factor of interpersonal communication. Scholars have proven the link between the effectiveness of interpersonal communication and health communication and behavioural change (Edward Maibach & Holtgrave, 1995; Ratzan, 2001; Noar, 2006; Edward; Maibach et al., 2008; Zakaria & Kaiam-Aza, 2016; Adeyeye et al., 2019). In addition to interpersonal means of communication, NGOs employ online advocacies for hepatitis information dissemination. This often is utilised in reaching a wider audience. Such an approach cannot be disassociated from many audiences shifting to the global online village of the internet. The internet and its many platforms of communication provide NGOs what Cho et al. (2014) describe as engendering a two-way symmetric communication of engagement between the NGOs and their respective target audience. This study attempted to find out the preferred health communication channel for hepatitis by residents on HBV in southwest Nigeria. While a significant number of the respondents noted to have heard information about hepatitis B from the traditional means of communication such as radio, television, leaflets, newspapers, as well as interpersonal means of communication such as health workers, counsellors, friends, relatives, spouses, and neighbours, majority of the respondents accorded their information source to the internet. The internet is the predominant information source, as depicted in this study. This study indicated an increase in the dependency of South West residents on the internet as a means of hepatitis information. It could, therefore, be inferred that the traditional media have not provided the people with health information on hepatitis B disease (E. Adesina et al., 2018; Evaristus et al., 2020)

The internet has been noted as a critical source of health information (Jacobs et al., 2017; Michael & Chevront, 1998; Percheski & Hargittai, 2011; Suleimanu et al., 2018), (Amodu et al., 2019; Odiboh et al., 2018) reaching heterogeneous audiences, in the same manner, the traditional media does. Michael and Chevront (1998) have affirmed that the internet can economically and geographically reach a mass population as well. This is usually achieved through different social media platforms such as Facebook, Instagram, Twitter, WhatsApp, Snapchat. According to Nigeria's Minister of Communication, Adebayo Shittu, 75% of Nigeria's online users are utilising different social media platforms (Amaefule, 2017; Okorie, Oyedepo, et al, 2019).

The Internet subscription rate in Nigeria hit a record height of 128,723,188 in January 2020 (NCC, 2020). The increasing dependence on the internet for hepatitis information, as revealed in this study, might not be disconnected from the high internet subscription rate of the South West region of Nigeria, as noted by the Nigerian Bureau of Statistics. According to the Nigerian Bureau of Statistics data for the last quarter of 2017 released in February 2018, Lagos Ogun and Oyo States recorded the highest active GSM internet subscription with 13,631,562, 6,434,069, 5,388,003, respectively (NBS, 2018). While the government and non-government organisations focus on interpersonal means and other mass media channels, it is imperative to meet the demands of the people for hepatitis messages via the internet and its associated platforms, as shown in this study.

5. Conclusion

Realising the SDG 3 objective on hepatitis elimination by the year 2030 will be a mere mirage if the present unidirectional approach of government and its related health agencies is not overhauled.

Though the government health-related agencies utilise interpersonal communication on hepatitis B, more attention is given to treatment information for patients found positive, as against preventive information for the general citizenry. Non-governmental organisations though employing both interpersonal means and internet-mediated platforms in relaying out messages on hepatitis B prevention and management, require comprehensive financial and policy support from both government as well as international aid agencies for optimum performance. Furthermore, the majority of Southwest residents prefer the internet-mediated sources for information on hepatitis B. This can be linked to various information-providing search engines on the internet. The result can be related to the submission of the National Bureau of Statistics that the South West region specifically Lagos, Ogun and Oyo States subscribe most to the internet, as compared to the South-South, South-East, North-Central, North-East, North-West regions of Nigeria. Government health agencies and non-governmental organisations should, therefore, be strategic.

Acknowledgements

We appreciate the Covenant University Centre for Research, Innovation and Discovery (CUCRID) for the financial support for this publication.

Funding

The authors received no direct funding for this research.

Author details

Evaristus Adesina¹
E-mail: evaristus.adesina@covenantuniversity.edu.ng
Olusola Oyero¹
Nelson Okorie¹
Lanre Amodu¹
Babatunde Adeyeye¹
Funke Omole¹
Darlynton Yartey¹

¹ Department of Mass Communication, Covenant University, Ota, Nigeria.

Citation information

Cite this article as: Assessment of health communication practice on hepatitis B in Southwest Nigeria, Evaristus Adesina, Olusola Oyero, Nelson Okorie, Lanre Amodu, Babatunde Adeyeye, Funke Omole & Darlynton Yartey, *Cogent Social Sciences* (2020), 6: 1777814.

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