RESEARCH ARTICLE

ISSN: 0331 - 670X

https://doi.org/10.51412/psnnjp.2023.14

The Nigerian Journal of PHARMACY
AS MEN OF HONOUR WE JOIN HANDS
THE OFFICIAL ORGAN OF THE PHARMACEUTICAL SOCIETY OF NIGERIA FOUNDED 1927

Health care provider perspective on the burden and awareness of Hepatitis B and C in Kafanchan, Kaduna state Nigeria.

Johnson Ogwuche Ogira[1], Ruth Onyema Odoh [2] Ise Uduak Peter[3] Victor Olusegun Awoniyi [4] Moses Attahghen Akuki [5]

[1] Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Bingham University, Karu Nasarawa State Nigeria
[2]Department of Political science, University of Jos, Plateau State Nigeria.
[3]Department of Pharmacology and Toxicology, Faculty of Pharmacy, Bingham University, Karu Nasarawa State Nigeria.
[4] Pharmaceutical Association of Nigerian Students, Bingham University, Karu Nasarawa State Nigeria.
[5] College of strategic learning and health Technology Kauchikau, Karu Nasarawa State Nigeria.

ARTICLE INFO

Article history:

Received 13 December 2022
Revised 13 January 2023
Accepted 25 March 2023
Online Published 31 March 2023

Keywords:

Hepatitis B and C,
Hepatitis Awareness,
Hepatotropic Viruses

* *Corresponding Author:*
ogirajohnson@gmail.com;
oguche.ogira@binghamuni.edu.ng
+2347086242071
https://orcid.org/ 0000-0001-6743-7918

ABSTRACT

Background: Viruses that target the liver primarily are described as hepatotropic viruses, with each of them causing clinically significant hepatitis and in some cases to the development of chronic viral hepatitis with viral persistence. Six human viruses have been identified, including hepatitis A B C and D (HDV), with the potential to cause acute inflammation of the liver, resulting in acute hepatitis carcinoma. This study determined the healthcare provider's view of awareness of hepatitis B and C in Kafanchan, Kaduna state, Nigeria with emphases on hepatis B due to its prevalence.
Result: Majority of respondents who filled the questioner was 30 years, representing 46.0 %, 65.0 % of respondents were male, while 35.0 % were females. Seventy-eight percent (116) of respondents reported that Hepatitis C and Hepatitis B awareness was not enough while 13 % (20) indicated that the awareness is enough. Majority of the respondents (97.01 %) said a cure exists for HCV and HBV, while 19.5 % said there was no cure.
Conclusion This survey conducted among healthcare providers, reveals the level of awareness of HBV and HCV infection in Kafanchan Kaduna state and from the above data, it is clear that the level of awareness is not enough therefore, more awareness strategy be put in place for effective information.

1. Introduction

Hepatitis B virus (HBV) and hepatitis C (HCV) is an *Hepadnavirus* that infects liver cells, and was responsible for an estimated 820,000 deaths in 2019; for example, from the subsequent development of hepatocellular carcinomas (HCC) [1]. An estimated 3.6% of the global population is affected by chronic HBV infection [2]. Although viral hepatitis is a significant public health problem globally, it has not been prioritized until recently [3]. In 2016, the World Health Organization (WHO) adopted the Global health sector strategy on viral hepatitis, which set the goal of eliminating viral hepatitis as a public health problem by 2030, and specifically for 90% of infected persons to be diagnosed by 2030 [4]. Similarly, the 67th World Health

Assembly of the WHO on viral hepatitis prevention and control recently reaffirmed the importance of monitoring viral hepatitis prevention, diagnosis, and treatment progress both nationally and globally [5].

In Africa, approximately 60 million people live with chronic HBV and HCV infection with an estimated prevalence of 6.2% [6]. New infection rates are highest among children, and transmission predominantly occurs via perinatal routes. The global prevalence of chronic HBV infection among children under five years declined from 5% in the pre-vaccine era (1980s to early 2000s) to less than 1% in 2019 [6,7]. Vaccination to protect against HBV infection is part of the WHO Extended Programme for Immunisation (EPI) and has been progressively rolled out across Africa since 1995, alongside enhanced interventions for the prevention of mother to child transmission. Despite more than two decades of vaccine introduction which has been critical for reducing infections in children, the overall population prevalence of HBV infection remains high across many settings in sub–Saharan Africa (SSA) (> 8%) [8]. Early epidemiological studies have suggested a high variation in the estimates of HBV prevalence between countries and subgroups of the population in sub–Saharan Africa. In Africa, Nigeria is ranked as one of the countries that is hyper-endemic for HBV and HCV infection (> 8%) [9]. Approximately nine in ten Nigerians who live with chronic HBV and HCV are unaware of their infection status, and are missing from the global public health statistics due to a lack of resources, awareness, and political will for addressing Nigeria's HBV and HCV plight [10]. Consequently, Nigeria has one of the highest rates of HBV-attributable cancer in West Africa, with an age-standardised incidence estimate of 2.6 to < 5.1 cases per 100,000 person-years [11]. HCC is a highly aggressive cancer with limited treatment options, often lacking in resource-constrained settings [12]. The lack of affordable diagnostics—for example specialised immunoassays and nucleic acid tests, as well as the out-of-pocket cost for vulnerable populations, constitute potential barriers to eliminating viral hepatitis B and C in Nigeria, thus making HBV and HCV a significant threat to public health. Further, clinical and epidemiological research on HBV and HCV infection in Nigeria are developing, but have not been able to attract appropriate funding and investment.

2. Method

Settings/ Study Area: The study was carried out in both private and public hospital conducted in ten hospitals Kafanchan Jema'a Local Government of Kaduna State, Nigeria. The study was carried out in Jema'a Local Government Area; Located in the Southern Kaduna State of Nigeria with a population of about 278,202 People, Jema'a is bounded to the North by Kaura Local Government in Kaduna State, to the South by Zanga Local Government, to the East by Jaba Local Government and to the west by Sango kaf Local Government, all in Kaduna.

2.1 Study Population

The research study population comprises health Professionals like Pharmacist, Doctors, Nurses, Medical Laboratory Scientist and Technicians, Records, Hospital Statisticians and draw from about Ten (10) different hospitals both, Government and Privates, and also pharmacies and laboratory centers and the public.

2.2 Sampling Method and Data collection

The sampling method used was stratified random sampling as shown in Equation 1

Sample size determination

Cross sectional Survey Formula

$N=4pq/d^2$ ……Equation 1

P= the prevalence of the condition/health State, q= is percentage terms for non-correspondents

d= the precision of the estimate, Prevalence (p) = 20%, q= (100-20) % =80%, d= 20% of p= 20% *20= 4. N= 4pq/d= 4*20*80/4*4= 400.

The hospital was partitioned into five strata and proportionate stratification was used to ensure that the sample size of each stratum was proportionate to the population size of the strata. Random sampling was then performed separately within each stratum.

The inclusive criteria include health professional or health worker, Volunteer to participate, those working in the hospital, pharmacies, medical laboratories or NGOs and age group of 18 years or older. The age group below 18 years, non – health professionals and non-health workers and patient were excluded from this study. The study was approved by Research and Ethics committee of General Hospital Kafanchan Kaduna State with the ethical number: SPIYMH/KAF/85A/VOL/IV. Written informed consent form was signed by each participant before data collection. The respondents were reassured they could refuse to participate in the study and could withdraw at any time.

The data was collected between January to August 2017 as approved by the research and Ethics committee of the hospital. The researcher introduced himself to the manager of the clinic with the copy of the ethical clearance letter and explained in details the research intended to be carried out

and objectives of the study.

The questionnaire was pre – tested with 40 patients to asses' reliability. The main questionnaire was given to the health workers and the health professionals who consented, the researcher collected the data every Friday. They were allowed to ask questions and free to participate or not and could withdraw at any time without any harm. The researcher ensured that the respondents fully understand the questions and translated the questionnaire in to Hausa language for those who did not understand English. Respondents who voluntarily choose to participate were given informed consent forms to be signed. Some of the respondent's self – administered the questionnaire but majority were assisted and administered it to them by the researcher. Descriptive Statistics was carried out, frequencies and proportions were computed for categorical variables and summaries for categorical variables were presented in tables and charts as appropriate, also means and standard deviation were used for analysis. All the statistical analysis conducted on the data gathered from the research were performed using the IBM (Corp, Amonk, New York, U.S.A) Statistical Package for the social sciences (SPSS) for windows version 20

3. Result

Statistical analysis obtained are presented in tables and charts as appropriate with summaries of the result as shown below. Table 1 is a summary of participants' characteristics. Most respondents were males (65%), while a higher proportion were in the aged ≤ 30. The proportion of medical doctors was more, followed by laboratory scientist, Nurses, and Pharmacists respectively. The proportion of respondents who had worked for ≤ 5 years were more in comparison to those with longer work experience. The distributions of the type of health facility where the participants work is depicted in Figure 1. Participants who work in State Government hospital were more 34%, followed by private hospital (22%) and mission hospital workers (20%) respectively. Those who work in Federal Government owned facilities and participants who work in pharmacies and laboratories were about 12 and 11% respectively.

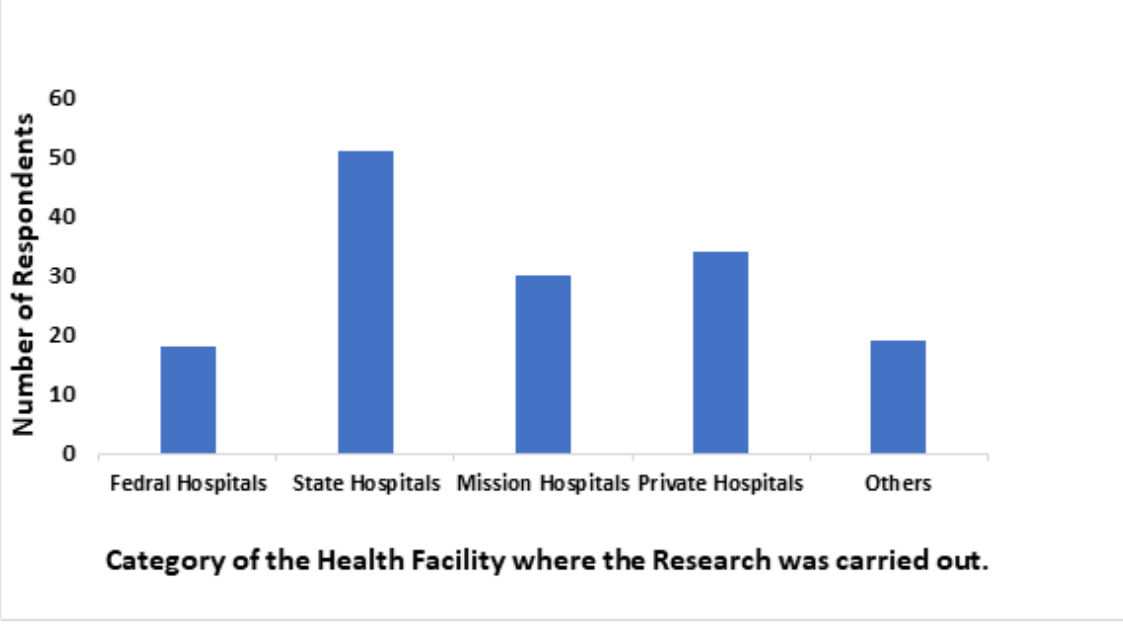

Figure 1: Category of the health Facility where the research was carried out.

Table 1: Characteristics of respondents

Characteristics	Sub-group	Number of respondents	Percentage of respondents
Sex	Male	100	65
	Female	53	35
Age in years	..	71	46
	31-40	52	34
	41-50	19	12
	Above 50	11	8
Profession	Pharmacist	20	13
	Medical doctor	39	26
	Nurse	34	22
	Laboratory scientist	35	23
	Others	24	16
Rank	Medical director	14	13
	Head of pharmacy	25	23
	Chief Nursing officer	42	38
	Head of laboratory	30	26
Work experience (years)	≤ 5	67	45
	6-10	45	30
	11-15	23	15
	> 15	14	10

3.1 Number of Patients with Hepatitis B and C that visit the Health Facility

When the respondents were asked if patients with Hepatitis B and C visit their facility to seek health care, 148 out of 154 (96.1%) respondents reported that patients infected with hepatitis B and C visit their facility, while four reported that such patients did not visit their facility, and two questionnaires were not complete (Figure 2). Most respondents (70%) reported that between one to ten hepatitis B and C patients visit the hospital per day to seek medical care. However, 14% of respondents estimated that the number of hepatitis B and C infected patients that visit the facility per day was about 10 to 20, while 10% of respondents estimated that 20 to 30 hepatitis B and C infected patients visit the hospital daily for medical care (Figure 3).

When respondents were asked to estimate what percentage of the patients that visit the health facility weekly were infected with hepatitis B or C, a higher proportion of respondents (48%) gave an estimate of 0.1% to 5%, this was followed by an estimate of 5% to 10% by 29% of respondents. However, 6% of respondents were of the opinion that more than 10% of weekly hospital attendees were infected with hepatitis B or C (Table 2).

Table 2: Respondents' estimate of percentage of weekly hospital attendees infected with hepatitis B or C in Kafanchan, Kaduna state

Percentage of week hospital attendees Infected with hepatitis B or C	No number of respondents	Percentage of respondents
0 - 0.1	25	17
0.1 - 5	71	48
5 - 10	42	29
ABOVE 10	9	6
TOTAL	147	100

3.3 Respondent's view on the level of awareness of hepatitis B or C infection among hospital attendees

When respondents were asked to assess the level of awareness of hepatitis B or C among hospital attendees in Kafanchan (Table 3), majority (78%, strongly agree and agree responses) were of the opinion that the level of awareness was not sufficient or low. Those who opined the level of awareness was sufficient were 13% (disagree and strongly disagree responses). Furthermore, about half of the respondents suggested that only few of hospital attendees were aware of their hepatitis B or C infection status before visiting the hospital (Figure 4), while a quarter of respondents indicated that very few patients were aware of their hepatitis B or C status. However, 16% of respondents suggested that many patients were aware of their hepatitis B or C status before visiting the hospital.

Table 3: Respondents view on the aware of hepatitis B and C among hospital attendees

Assessment question	Response	Number of respondents	Percentage of respondents
The awareness of hepatitis B or C Is not sufficient	Strongly agree	39	26
	Agree	77	52
	Not sure	13	9
	Disagree	16	11
	Strongly disagree	4	2
	Total	149	100

3.4 Strategies to promote awareness of hepatitis B and C

Table 4 shows the strategies and opinions of health professionals in Kafanchan on promoting the awareness of hepatitis B and C among hospital attendees. Almost all the respondents (97%) indicated that they encourage lab test as a strategy to promote awareness of hepatitis B or C, will about 3% indicated that they allow the patients to discover their status by themselves. Concerning the best media strategy to increase the awareness of hepatitis B or C (Table 4), a higher proportion of respondents (44%) were in favour of the use of television and radio, followed by awareness creation in public gatherings (37%), and one on one talk (13%) respectively. The use of a town crier was the least favored (6%).

Table 4: Strategies to promote awareness of hepatitis B and C

Strategies	Responses	Number of respondents	Percentage of respondents
Health professional's role in improving awareness of hepatitis B or C			
	Encourage lab test	145	97
	Discovering by themselves	4	2.6
	Discouraging them to know	1	0.4
Health professional opinion on best medium for disseminating information on hepatitis B or C			
	Television and radio	62	44
	One on one talk	18	13
	In public gathering	53	37
	Use of town crier	9	6
	TOTAL	142	100

3.5 Health professional's opinion on predisposing factors and cure for hepatitis B or C infection in Kafanchan

Among the predisposing factors for hepatitis B and C infection identified by respondents, sex ranked highest (44%), followed by alcoholism (23%), mother to child transmission (20%), and social vices (13%) respectively. Most of the respondents (81%) were of the opinion that there is a cure for hepatitis B and C. However, a few respondents (19%) do not believe that there is a cure for the infection.

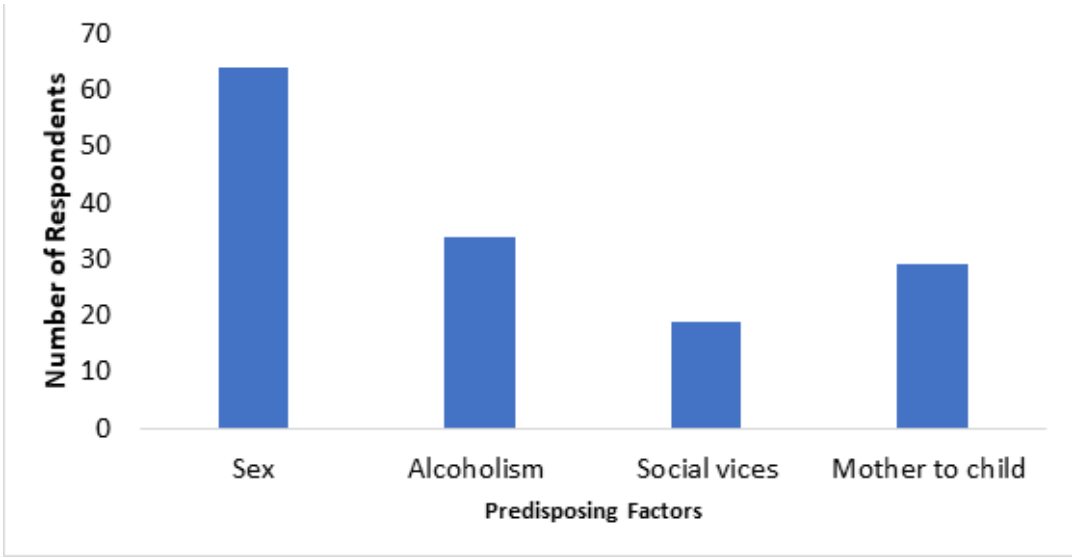

Figure 3: Predisposition Factor for Hepatitis B and C Infection

4. Discussion

Infections due to Hepatitis B and Hepatitis C viruses (HBV, HCV) are significant health problems around the globe. Worldwide, viral hepatitis is the commonest cause of hepatic dysfunction in pregnancy, chronic liver disease and acute liver disease. This study investigated the awareness of hepatitis B and C among people visiting ten selected Clinics in Kafanchan, Kaduna State, Nigeria.

First it was discovered that more respondents to the questionnaire were in the age group of below thirty years, 46.0%. Almost half of the study population is in the age group of 30-39years, also the male gender responded most 65%, and among the professionals' medical practitioners responded most, 26%. Professionals with experience of 0-5years responded most, 45%. The influx of patients with hepatitis B and C that visit health facility is 70% from the survey that was carried out among randomly selected general outpatients attending ten clinics in Kafanchan, Kaduna State, Nigeria. This indicates the occurrence of HBV and HCV among unsuspecting individuals as shown in other studies [5,13]. The highest range of the number of patients with hepatitis B and C that visit health facility is between 1 – 10 with the percentage of 70% while the least is 30 – 40 and 40 and above of the range of number that visit the facility per a day amounting to 3%.

The awareness reported here (70%) is higher than 8.35% awareness reported in a previous study conducted by [14,] at Ahmadu Bello University Teaching hospital, Zaria Kaduna state. The awareness of 70% reported in this study is also higher than 7.6%, 9.3% and 3.9% prevalence reported in Nnewi, Awka and Abakiliki Nigeria respectively [5,13]. The HBV awareness in this study corroborates the awareness of 12.4% among children in a tertiary hospital in Niger Delta Nigeria; it has also been reported by Aliko and Erhabor [14]. A few studies in Nigeria have also been reported in Abakiliki by idioha *et al* [5,13,14]. Many agreed that there is no enough awareness of hepatitis B and C in Kafanchan, Kaduna State, 78% of the respondents said they were aware while 13% in total (agree and strongly disagree) said they did not know at all that is they were not aware in like manner, many respondents (44%) suggested TV and Radio as the main medium for HBV and HCV awareness campaign. 44% said sex has the most predisposing factor for Hepatitis B and C followed by alcohol 23% while social vices are the least predisposing factor 13%. 70.1% said yes that hepatitis B and C have cured while 19, 5% said No that it does not have a cure.

The percentage of the respondents that said there were no cure for hepatitis B and C may be responding in that manner due to the information that he or she must have gotten and is a function of insufficient awareness. The percentage of respondents that said there was cure for hepatitis B and C is a function of sufficient awareness and this is in accordance with the literature concerning the management of hepatitis B and C. From the literature, there were four management options for dealing with chronic HCV in developed countries [1,7,14] , which is in accordance with the response from the participants in this research that there is cure or management for hepatitis B and C and some these managements include the use of one immune response modifiers (i.e interferons), two antiviral agents (i.e ribavirin), three combination therapy with interferon and ribavirin and four liver transplantation, if the above chemotherapy fails. But in developing countries like Nigeria where the rate of poverty is high, most patients may not be able to afford the treatment modalities because the drugs are expensive. The most logical thing to do is to prevent contacting the HCV. One of the preventive strategies is the use of vaccine as with HBV infection but there is no vaccine against HCV although research is in progress, but the mutability of HCV genome complicates vaccine development [15]. Immunoglobulin has not proved to be of benefit. Immunoglobulin produced in the United States of America does not contain antibodies to HCV because blood and plasma donors are screened for antibodies to HCV and excluded from donor pool. However, because of the problems associated with vaccine development and non-benefit of Immunoglobulin, HCV infection in Nigeria can be prevented or drastically reduced through health education of the people on different routes of transmission of the HCV and other preventive measures. Such measures include careful handling of blood and body fluid since they are potentially infectious. Also, communal sharing of blades/sharp instruments used for shaving, barbing, manicure and body piercing/cutting should be discouraged. Individuals infected with HCV should not donate blood, organs, tissues or semen. Safe sexual practices including the use of Latex condoms are strongly encouraged for individual with multiple sexual partners. For hepatitis B treatment, it is relatively similar to hepatitis C especially the last option that is liver transplantation, but in terms of drugs they are different, hepatitis B treatment is basically the use of antiretroviral like tenofovir, lamivudine etc. Also, high multivitamins could be helpful, multivitamins like vitamin B12, silymarins, livolin®, livocap® etc.

5. Conclusion

Until recently, HBV and HCV have not been considered or viewed as a Nigerian problem, with recent studies of which this is inclusive, it is becoming clear that HBV and HCV infection is endemic in Nigeria. This survey conducted among health professional and health workers, reveals that HBV and HCV infection is prevalence in Kafanchan, Kaduna state, recoding 96.1% of HBV and HCV patient visiting ten randomly selected health facilities in Kafanchan Kaduna state Nigeria. The knowledge about hepatitis and its mode of transmission, prevention and control were generally poorly perceived by the study population, majority of the population were unaware of their HBV and HCV status from this very research conducted among health professionals and health workers in determining the awareness of hepatitis B and C. The need for aggressive nation-wide HBV and HCV Education and prevention/control campaign cannot be over emphasized as this along with mass immunization and adequate treatment of existing cases would be of use in reducing the spread and multiplication of the virus among individuals and in the society at large .TV, Radio and public speaking are the major media avenue for awareness creation for HBV and HCV campaign. There is also need for further prevalence studies with proper monitoring to show successes of implemented intervention measures in Kaduna state and Nigeria at large.

Recommendations

I will recommend that more work be carried out in the area of physical testing and screening of participants for hepatitis B and C in Kafanchan, Kaduna State, where Laboratory results will confirm this research done using questionnaire. Also, more awareness on this endemic should be reemphasized both at tertiary, secondary and primary level of health care using all possible means.

Acknowledgement

The authors wish to appreciate and thank everyone who has contributed to the success of this study. Special appreciation to WHO for access to raw data where hepatitis result for other countries were obtained.

REFERENCE

1. WH.O., (2021). Hepatitis B key. facts. https://www.who.int/newsroom/factsheets/detail/hepatitis-b. Accessed 29 Sept 2021.
2. Global Burden of Disease Mortality and Causes of Death Collaborators. Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2013;385(9963):117–71.
3. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2010 (GBD 2010) results by cause 1990–2010. Institute for Health Metrics and Evaluation (IHME). http://ghdx.healthdata.org/record/ihme-data/gbd-2010-results-cause-1990-2010. Accessed 5 Feb 2021.
4. WH.O., (2016). Global health sector strategy on viral hepatitis, 2016–2021. https://apps.who.int/iris/bitstream/handle/10665/246177/WHO-HIV-2016.06eng.pdf?sequence=1. Accessed 27 Jan 2021.
5. W.H.O., (2014). Hepatitis. Sixty-seventh world health assembly. Agenda item 12.3. May 24, http://apps.who.int/gb/ebwha/pdf_files/wha67/a67_r6-en.pdf?ua=1. Accessed 18 Jan 2021.
6. WH.O., (2019). Hepatitis B fact sheet. https://www.who.int/newsroom/factsheets/detail/hepatitis-b. Accessed 21 Mar 2021.
7. Indolfi, G., Easterbrook, P., Dusheiko, G., Siberry, G., Chang, MH., Thorne, C., (2019). Hepatitis B virus infection in children and adolescents. Lancet Gastroenterol Hepatol. 4(6):466–76.
8. Schweitzer, A., Horn, J., Mikolajczyk, RT., Krause, G., Ott, JJ. (2015). Estimations of worldwide prevalence of chronic hepatitis B virus infection: a systematic review of data published between 1965 and 2013. The Lancet. 386(10003):1546–55.
9. Ott, JJ., Horn, J., Krause, G., Mikolajczyk, RT. (2017). Time trends of chronic HBV infection over prior decades—a global analysis. J Hepatol. 66(1):48–54.
10. Jacobs, B., Mayaud, P., Changalucha, J., Todd, J., Ka-Gina, G., Grosskurth, H. (1997). Sexual transmission of hepatitis B in Mwanza, Tanzania. Sex Transm Dis. 24(3):121–6.
11. Belo, AC., (2000). Prevalence of hepatitis B virus markers in surgeons in Lagos, Nigeria. East Afr Med J. 77(5):283–5.
12. Kramvis, A., Kew, MC. (2007). Epidemiology of hepatitis B virus in Africa, its genotypes and clinical associations of genotypes. Hepatol Res. 37(s1): S9–19.
13. Chukwuk,a, J.O., Ezechukwu, C.C.. Egbuonu, I.

(2019). Cultural influences on hepatitis B Surface Antigen Seropositivity in primary School Children in Nnewi. Nigeria J., Paediatr. 30(4):140–142.

14. Luka, S.A., Ibrahim, M.B., Iliya, S. (2018). Seroprevalence of Hepatitis B Surface Antigen among Pregnant women attending antenatal clinic in Ahmadu Bello University Teaching Hospital Zaria. Nig J Paras. 29:38–41.

15. Musa, BM., Bussell, S., Borodo,, MM., Samaila AA., Femi OL. (2015). Prevalence of hepatitis B virus infection in Nigeria, 2000–2013: a systematic review and meta-analysis. Niger J Clin Pract. 18(2):163–72.