

Awareness and Knowledge of Haepatitis B among Nursing Mothers in Azare Metropolis, Bauchi State Nigeria

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Abstract: Study was carried to investigate the awareness and knowledge of Haepatitis B among nursing mothers in Azare metropolis, Bauchi State Nigeria. Two objectives of the study were stated, and two research questions were asked. A descriptive survey was used to select 70 respondents from the total population. Findings of the study revealed that, majority of the survey participants in Azare were aware of the fact that hepatitis B is a disease that primarily affects the liver, poor awareness level with regards to the cause, adverse effect and mode of transmission of the disease. The study concluded that, believed that virus is the cause of hepatitis B infection, believed the disease is transmitted through blood transfusion/injection drug use and sexual intercourse respectively. The following recommendations were made, Various campaigns, by the media, related to the spread disease should be intensified. Immunization activities should be carried out.

I. Introduction

Hepatitis B is a viral disease process caused by the hepatitis B virus (HBV). The virus is endemic throughout the world. It is shed in all body fluids by individuals with acute or chronic infection (WGO, 2008). Host and viral factors, as well as coinfection with other viruses, in particular hepatitis C virus (HCV), hepatitis D virus (HDV), or human immunodeficiency virus (HIV) together with other co-morbidities including alcohol abuse and obesity, can affect the natural course of HBV infection as well as efficacy of antiviral strategies (EASL, 2012). Age-specific HBsAg seroprevalence varies markedly by geographical region, with the highest prevalence (>5%) in sub-Saharan Africa, East Asia, some parts of the Balkan regions, the Pacific Islands and the Amazon Basin of South America (WHO, 2015). Prevalence below 2% is seen in regions such as Central Latin America, North America and Western Europe (WHO, 2015). Overall, almost half of the global population lives in areas of high endemicity (WHO, 2015). Worldwide, it is estimated that around 650 000 people die each year from the complications of chronic hepatitis B (CHB) (WHO, 2015). Overall, HBV accounts for around 45% of cases of HCC and 30% of cirrhosis, with much higher proportions in low- and middle-income countries (LMICs) (WHO, 2015). HCC is ranked among the top three causes of death in males, especially in South-East Asia (WHO, 2015). In Asia and most other regions, the incidence of HCC and cirrhosis is low before the age of 35-40 years but then rises exponentially (WHO, 2015). 70-95% of adults in the Sub-saharan have at least one marker of HBV (Kire, 1993). In West Africa, it has been estimated that 40% of children will be infected by age two years and above 90% by age of ten years. Chronic carrier rate is 20% in these children (Kire, 1993). A chronic carrier rate above 7% in a population is classified as hyper endemic (Kire, 1993). Studies done in Nigeria showed HBV carriage rate in the range of 9-39% (Emechebe et al., 2009). HBV infection also causes a significant economic burden in terms of years of life lost from liver disease in high-income settings as well as LMICs, and accounts for 5-10% of liver transplants (WHO, 2015; Hoofnagle JH et al., 2007). This study was carried out to assess the awareness and knowledge of the people, in regard to HBV, of Azare, Bauchi State, Nigeria.

Hepatitis refers to inflammation of the liver. Hepatitis is caused by various factors; however, viruses are the leading etiological agents (Aravind et al., 2014). Viral hepatitis is mainly caused by Hepatitis A, B, C, D and E viruses (Aravind et al., 2014). The burden of viral hepatitis in Africa is not accurately known but is believed to be significantly high. The prevalence of HBV is estimated at 8% in West Africa and 5-7% in Central, Eastern and Southern Africa (WHO, 2014). It is estimated that approximately 70-95% of the adult population in Africa show evidence of past exposure to HBV infection with an estimated HBsAg seroprevalence of 6-20% (Ott et al., 2012). While the WHO estimates the prevalence of HCV in the African continent as 5.3%, it is markedly higher in some areas, reaching levels of up to 17.5% in Egypt (Karoney et al., 2013)

Two billion people worldwide have serologic evidence of past or present HBV infection, and 350 million are chronically infected and at risk of developing HBV-related liver disease (WGO, 2008). Some 15-40% of chronically infected patients will develop cirrhosis, progressing to liver failure and/or HCC. HBV infection accounts for 500,000-1,200,000 deaths each year (WGO, 2008). Hepatitis B virus infection remains a major public health concern in Nigeria with a carrier rate of about 9-39% (Emechebe et al., 2009). Chronic HBV

infection and its related complications are a significant economic burden and despite the introduction of universal childhood vaccination over ten years ago, this infection remains the major cause of chronic liver disease and the commonest indication for liver transplantation (Hoofnagle JH et al., 2007).

II. Hepatitis B virus (HBV)

The complete infective virion or Dane particle is a 42 nm particle comprising an inner core or nucleocapsid (27 nm) surrounded by an outer envelope of surface protein (HBsAg). This surface coat is produced in excess by the infected hepatocytes and can exist separately from the whole virion in serum and body fluid as 22 nm particles or tubules. HBsAg contains a major 'a' antigenic determinant as well as several subtypes: 'd', 'y', 'w' and 'r'. Combinations of these subdeterminants (e.g. adr, adw, ayw and ayr) are used to classify HBV genotypes A-H, of which the main types are type A (35%), B (22%), C (31%) and D (10%). There is a strong correlation between genotypes and geographical areas. Genotype A in north-west Europe, North America and Central Africa; B in South-east Asia (including China, Taiwan and Japan); genotype C in South-east Asia; D in southern Europe, India and the Middle East; E in West Africa; F in South and Central America, in American Indians and in Polynesia; G in France and USA; and H in Central and South America. These genotypes have a bearing on, for example, the time to HBeAg seroconversion ($B < C$), response to interferon treatment ($A > B$; $C > D$) and the development of chronic liver disease ($A < D$). The core or nucleocapsid is formed of core protein (HBcAg) containing incompletely double-stranded circular DNA and DNA polymerase/reverse transcriptase. One strand is almost a complete circle and contains overlapping genes that encode both structural proteins (pre-S, surface (S), core (C) and replicative proteins (polymerase and X). The other strand

III. Epidemiology

The hepatitis B virus (HBV) is present worldwide with an estimated 360 million carriers. The UK and the USA have a low carrier rate (0.5–2%), but it rises to 10–20% in parts of Africa, the Middle and the Far East. Vertical transmission from mother to child in utero, during parturition or soon after birth, is the usual means of transmission worldwide. This is related to the HBV replicative state of the mother (90% HbeAg+, 30% HbeAg-ve) and is uncommon in Africa where horizontal transmission (sib to sib) is common. HBV is not transmitted by breast-feeding. Horizontal transmission occurs particularly in children through minor abrasions or close contact with other children, and HBV can survive on household articles, e.g. toys, toothbrushes, for prolonged periods. HBV spread also occurs by the intravenous route (e.g. by transfusion of infected blood or blood products, or by contaminated needles used by drug users, tattooists or acupuncturists), or by close personal contact, such as during sexual intercourse, particularly in men having sex with men (25% of cases in the USA). The virus can be found in semen and saliva.

Prevention and prophylaxis

Prevention depends on avoiding risk factors (see above). These include not sharing needles and having safe sex. Vertical transmission is discussed below. Infectivity is highest in those with the e antigen and/or HBV DNA in their blood. These patients should be counselled about their infection. In developing countries, blood and blood products are still a hazard. Standard safety precautions in laboratories and hospitals must be enforced strictly to avoid accidental needle punctures and contact with infected body fluids.

Passive and active immunization

Vaccination is obligatory in most developed countries (but not the UK) as well as countries with high endemicity. Groups at high risk are: all healthcare personnel; members of emergency and rescue teams; morticians and embalmers; children in high-risk areas; people with haemophilia; patients in some psychiatric units; patients with chronic kidney disease/on dialysis units; long-term travellers; men who have sex with men (MSM), bisexual men and sex workers; intravenous drug users.

Combined prophylaxis (i.e. vaccination and immunoglobulin) should be given to: staff with accidental needle-stick injury; all newborn babies of HBsAg-positive mothers; regular sexual partners of HBsAg-positive patients, who have been found to be HBV-negative.

For adults a dose of 500 IU of specific hepatitis B immunoglobulin (HBIG) (200 IU to newborns) is given and the vaccine (i.m.) is given at another site.

Active immunization

This is with a recombinant yeast vaccine produced by insertion of a plasmid containing the gene of HBsAg into yeast. Dosage regimen: Three injections (at 0, 1 and 6 months) are given into the deltoid muscle; this gives short-term protection in over 90% of patients. People who are over 50 years of age or clinically ill and/or immunocompromised (including those with HIV infection or AIDS) have a poor antibody response;

more frequent and larger doses are required. Antibody levels should be measured at 7–9 months after the initial dose in all at-risk groups. Antibody levels fall steadily after vaccination and booster doses may be required after approximately 3–5 years. It is not cost-effective to check antibody levels prior to active immunization. There are few side-effects from the vaccine.

Objectives

The following were the objectives of this study:

1. Determine the level of awareness of hepatitis B among nursing mothers in Azare metropolis, Bauchi State.
2. Find out the knowledge of nursing mothers in Azare metropolis, Bauchi State on the prevention of Haepatitis B infection

Research Questions

1. What is the level of awareness of hepatitis B among nursing mothers in Azare metropolis, Bauchi State.
2. What is the knowledge of nursing mothers in Azare metropolis, Bauchi State on the prevention of Haepatitis B infection

IV. Methodology

The study was carried out to determine the level of knowledge and awareness of Hepatitis B among nursing mothers in Azare metropolis, Bauchi state. Descriptive survey was use in the conduct of this study. The sample size used for the present study was 70 participants using cluster sampling technique of which 66 questionnaire were recovered and analysed. The questionnaire was prepared in English which is relevant to the awareness and knowledge of Hepatitis B and also the face and content validity of the instrument by experts in the field of health education, exercise and sports science and related discipline

Instrument for Data Collection

Self-structured Questionnaire was used for data collection in this study. The questionnaire was divided in to various sections. it include questions on socio-demographic characteristics, awareness and knowledge on Hepatitis B. Explanation was provided to few participants to assist them in completing the questionnaire. There were 11 questions on awareness and knowledge in order to assess the participant. Those who completed the questionnaire were given further enlightenment on HBV to improve, remind and share to others. Participants were encouraged to seek further information and vaccination for hepatitis B from the health centres nearer to them. The participants’ demographic characteristics were illustrated using descriptive statistics. Categorical variables were shown as percentages while continuous variables were depicted as mean ± standard deviation. In addition, frequencies of variables were calculated. The statistical software (SPSS, version 20) was used to compile and analyse the data.

V. Results

Table two: Demographic information of respondents

S/No	Variables	Respondents	Responses	Percentage (%)
1	Sex	Male	49	74.2
		Female	17	25.8
2	Age (years)	10-19	6	9.1
		20-29	48	72.7
		30-39	7	10.6
		>40	5	7.6
3	Marital status	Single	51	77.3
		Married	14	21.2
		Divorced	0	0
		Widowed	1	1.5

Table 2 shows the demographic data of respondents. Male represents 74.2% while 25.8% of the respondents are female. Respondents with ages between 10-19years represent 9.1% while those with age range of 20-29years represents 72.7%. Age range of 30-39years and >40years represent 10.6% and 7.6% respectively. 77.3% are single while 21.2% are married and 1.5% are widowed.

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Table three: Awareness of hepatitis B infection in Azare, Bauchi state Nigeria

S/No		Number (n)	Percentage (%)
	Cause of hepatitis		
4	Which of the following is the most likely cause of viral hepatitis		
	*Virus	29	43.9
	Bacteria	11	16.7
	Protozoa	2	03.0
	Smoking	15	22.7
	Junk food	9	13.6
	Adverse effects of hepatitis		
5	Hepatitis primarily affects		
	Kidney	5	07.6
	*Liver	28	42.4
	Heart	23	34.8
	Skin	1	01.5
	Stomach	3	04.5
	Don't know	6	09.1
6	Hepatitis A leads to Hepatitis B, which then leads to Hepatitis C		
	True	44	66.7
	*False	7	10.6
	Don't know	15	22.7
	Transmission of hepatitis		
7	Hepatitis A/E is most commonly transmitted through		
	Air	17	25.8
	Contaminated food or water	10	15.2
	Blood transfusion/ Injection Drug Use	9	13.6
	Sexual Transmission	5	07.6
	*Blood transfusion/ Injection Drug Use, Sexual route	11	16.7
	Don't know	13	19.7

Correct answers are marked with asterisk *

Table 3 represents the level of awareness of the respondents. It shows that 43.9% of the respondents knew that Hepatitis B infection is caused by a virus while the 56.1% believed the disease is caused by other agents as smoking 22.7%, junk food 13.6% etc. On the organ primarily affected, 42.4% acknowledged that hepatitis B primarily affects the liver while 34.8% said it affects the heart. Only 4.5% believed it is a disease of the stomach. 13.6% and 7.6% believed the disease is transmitted through blood transfusion/injection drug use and sexual intercourse respectively. A large percentage (66.7%) believed HAV lead to HBV and then to HCV.

VI. Discussion

The results indicate that there was some awareness (Table 4.1,) about hepatitis B and the basic information related to the disease. However the participants showed a poor awareness level with regards to the cause, adverse effect and mode of transmission of the disease. Many of the respondents believed that virus is the cause of hepatitis B infection while a large percentage believed that smoking and consumption of junk food were the main causes of the infection. Although junk food and smoking might have a role in the prognosis of hepatitis B they are not the leading cause of liver diseases. Various campaigns, by the media, related to the spread of awareness on anti-smoking and alcoholism might have influenced this response. According to the survey responses, a majority of the survey participants in Azare were aware of the fact that hepatitis B is a disease that primarily affects the liver. All the five types of hepatitis viruses (A, B, C, D and E) can independently infect a person (although HDV requires co-infection with HBV) (Arun et al., 2014). HBV is contacted predominantly by percutaneous or mucosal exposure to infected blood and various body fluids, including saliva, menstrual, vaginal, and seminal fluids (WHO, 2015). Currently there are no hepatitis specific programs in the country. Therefore, significant strides taken to spread the awareness about vaccination against hepatitis and safe injection practices would go a long way in assisting prevention. Although alcohol or smoking can contribute to liver cancer, HBV and HCV are the major causative factors. Both HBV and HIV have similar routes of transmission like; exposure to infected blood and body fluids via sexual route, blood transfusion, reuse of needle and syringes, tattooing and vertically from mother to child. As per CDC data, HBV is 50-100 times more infectious than HIV. The burden of viral hepatitis superimposed on the existing HIV epidemic in Africa leaves many at a risk of developing co-infection resulting in accelerated disease in HBV/HIV co-infected individuals (Modi and Feld, 2007). Many survey respondents were aware of the fact that there is treatment available for HBV infection. In routine, patients are assessed on various grounds such as the viral load, the genotype, stage of the liver disease etc. Subsequently, the appropriate antiviral therapy is administered for the required duration. An early diagnosis and treatment of infection has a better prognosis. However, treatment options for HBV do not seem to be affordable to the majority of the population (Hill et al., 2014). As per a news report in "Daily Trust" (2015), 20 million Nigerians suffer from HBV, which amounts to about 13% of the

Nation's population. The burden of hepatitis B in Nigeria mandates immediate action. Hepatitis B needs focus like HIV, malaria, or tuberculosis as the general public lack knowledge about the disease and its complications. There is a need to impart awareness among the general public about the viral infection, its modes of transmission and methods of prevention. There is a need to create awareness about vaccination among the general public. This survey has given an insight about the current awareness of hepatitis among the people of Azare. As the survey was conducted in a small population from Azare, it may not represent the true awareness of hepatitis in the entire region. Hence, further research in the area involving larger sample size need to be conducted. The data collected from such a research can be utilized in the formulation of plans and strategies to combat hepatitis B.

VII. Conclusion

On the basis of the findings of this study the following conclusions were drawn:

1. The survey participants lacked the information on critical issues like vaccination, modes of transmission and preventive measures.
2. Health education and awareness campaigns for the general public and at risk population and to improved access to treatment and hepatitis B prevention initiatives to aid in controlling the spread of the disease was completely lacking.
3. Awareness campaigns should focus on developing content for various channels of communication and the content pedagogy should be aligned to achieve behaviour change to ensure that the awareness campaigns are successful.

VIII. Recommendations

On the basis of the conclusions of this study the following recommendation was made

1. Government, together with international health organisations should introduce programmes that will enhance awareness and make available immunisation facilities nationwide.
2. The media should also help in creating awareness on HBV. Finally, further research in the area involving larger sample size should be conducted as data from such research can be utilized in the formulation of plans and strategies to combat HBV.

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