



Level of Awareness of Hepatitis B Viral Infection among a Subset of Makurdi Community in Benue State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Authors MSO and PMU designed the study, performed the statistical analysis and wrote the protocol. Authors MSO and SIN wrote the first draft of the manuscript and managed literature searches. Authors MSO and SIN managed the analyses of the study and literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Background: The high prevalence of chronic hepatitis B virus (HBV) carriers worldwide coupled with complications such as liver cirrhosis and hepatocellular carcinoma makes the disease a global health challenge.

Aim: To determine the level of awareness of a subset of Makurdi, Benue state's populace on HBV infection and control.

Methodology: This cross sectional study was conducted among members of Benue State

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University (BSU) community in Makurdi, Benue state, Nigeria on 25th November, 2012. Socio-demographic data was collected from participants with the aid of structured questionnaires. Awareness on hepatitis B viral infection and knowledge of the various modes of transmission of Hepatitis B infection were also assessed.

Results: A total of 728 individuals were recruited into this study consisting of 308 (42.31%) females and 420 (57.69%) males. Majority (63%) were between 21 and 30 years of age. Over 90% of the study group attained up to tertiary level of education; about 30% were married and 81.1% had heard of HBV. There was a significant awareness on hepatitis B virus infection among the study population. 34.9%, 43.8%, 54% and 50.7% were fully aware that HBV can be transmitted from infected mother to child during delivery, through sexual contact with infected partner, through use of HBV infected blood product and use of needle contaminated with HBV, respectively. Only 43%, 43.1% and 32.3% knew HBV is not transmitted by dirty toilet, drinking contaminated water or hugging infected individuals respectively.

Conclusion: There is a significant awareness on hepatitis B virus infection and its transmission among our study population; however, some misconceptions which can result in stigmatization of HBV infected individuals exist. We recommend the strengthening of ongoing Health Education programs on HBV in this environment.

Keywords: Awareness; Hepatitis B virus; Nigeria.

1. INTRODUCTION

Hepatitis B virus (HBV) infection is a major public health problem worldwide. According to recent estimates, approximately 30% of the world's population i.e. about 2 billion persons have serologic evidence of current or past HBV infection [1]. The increasingly high chronic hepatitis B virus carriers worldwide currently estimated at 400 million individuals; coupled with complications such as cirrhosis of the liver and hepatocellular carcinoma makes HBV infection a disease of major public health importance worldwide [2-5].

In Asian and African populations, the incidence of HBV infection is higher than 8% [6-10]. In Nigeria, several studies from different parts of the country have confirmed the endemic nature of the infection, with up to 23% of certain study populations being chronic hepatitis B carriers [7,8,11-18]. In Makurdi, the prevalence of HBV seropositivity was earlier found to be 12.7% [7]. The challenges associated with Hepatitis B virus infection globally are enormous, accounting for over a million deaths annually from HBV-related chronic liver disease and hepatocellular carcinoma [3]. Approximately 80% of cases of liver cancer are etiologically linked with hepatitis B virus (HBV) infection [19,20].

HBV is an enveloped virus with icosahedral symmetry containing a partially double stranded DNA genome. HBV belongs to the Hepadnaviridae viral family. Humans are the only known natural host. HBV enters the liver via the

bloodstream, and replication occurs only in liver tissue. The intact, infectious virus is 42-47 nm in diameter. HBV is 100 times more contagious than the human immunodeficiency virus and can be transmitted through infected blood and blood products, unprotected sex with infected individuals and exposure to needles contaminated with HBV, sharp objects used for tattoo and body-piercing; and toothbrushes [4,5,21]. Razor sharing and shaving in barber shops has also been identified as a key risk factor for HBV transmission. Furthermore, occupational exposure among health workers is an important means by which HBV infection is transmitted. In addition, transmissions from mother to child and through close daily contact with infected family members are important in transmission. On the other hand, HBV is not transmitted by use of dirty toilet, drinking contaminated water or hugging infected individuals. Exposure to HBV often results in immunity following an asymptomatic infection or acute hepatitis. However, a significant proportion of those exposed to HBV early in life and many of those exposed for the first time later in life become chronically infected [4].

To effectively control the spread of HBV infection, there is a need for community awareness and participation aimed at control of the disease. The level of knowledge of transmission is central to behavioural modification aimed at reducing the prevalence of the infection. We assessed the level of awareness of HBV infection among members of Benue State University community.

2. MATERIALS AND METHODS

2.1 Study Area

This study was conducted within Benue State University (BSU) in Makurdi. Makurdi is the capital city of Benue state, Nigeria. Benue state is located within the North central geopolitical zone of Nigeria.

2.2 Subjects

Participants included randomly selected members of staff (including their wards) and students of the university community who were interested in participating in a Medical Screening and Vaccination Program organized by HBV/HIV/AIDS Study Group, Benue State University, Makurdi.

2.3 Method

This cross sectional study was conducted on 25th November, 2012 as a follow up to our previous hepatitis B virus' control activities in Makurdi, Nigeria [7,8]. Socio-demographic data were collected from participants with the aid of structured questionnaires. Awareness on hepatitis B viral infection and knowledge of the various modes of transmission of Hepatitis B infection were also assessed. Verbal consent was obtained from each participant. The study was approved by Ethical and research committee of the Benue State University Teaching Hospital, Makurdi. Participants were counseled and encouraged on hepatitis B viral serologic screening.

2.4 Analysis

Results were fed into and analyzed with Epi info version 6 statistical software; Chi-square(X^2) was used to compare association between proportions and P-values <0.05 was considered significant at 95.0% confidence level.

3. RESULTS

A total of 728 individuals were recruited into this study consisting of 308 (42.3%) females and 420 (57.7%) males with age ranging from 8years to 55 years. Less than 1% of the study populations were aged below 10 years or above 50 years. Among children below 16 years of age, only one had heard of HBV. In general, all children below

16 years of age did not respond to the remaining parts of the questionnaire which sought to know further about their understanding of the various modes of transmission of HBV. Majorities (63%) were between 21 and 30 years of age (Table 1). Over 90% of the study group attained up to tertiary level of education. Only about 30% were married in a monogamous setting, the remaining 70% were single. Table 2 showed the level of awareness on hepatitis B among the study population. Among a total of 714 responders, 579 (81.1% of the study population) had heard of hepatitis B while 135 (18.9%) had never heard of it. Among those who never heard of HBV, 103 of them, representing 14.43% of the study population, were aged between 21 and 30. However, a significantly lower level of awareness on HBV among individuals aged 21-30 years compared to other age groups was seen in the study population (P-value: 0.00093). Across gender, 78.9% of females and 82% of males were aware of hepatitis B virus (Table 3). There was no significant difference in the level of awareness across gender (P value- 0.15017).

Figs. 1a and 1b show the level of awareness on the various modes of transmission of HBV within the study population. Only 43% were of the opinion that HBV is not transmitted by dirty toilet. Similarly, Only 43.1% knew HBV is not transmitted by drinking contaminated water. Furthermore, while 34.9% were aware HBV can be transmitted from infected mother to child during delivery, 47.2% did not know. Similarly, only 46% of the study populations believed HBV can be transmitted from infected mother to child during breastfeeding. It was found that 83.5% of the study population was aware HBV can be transmitted from infected mother to child in the course of pregnancy, delivery and breast feeding.

Furthermore, 43.8% of the study population was informed of the possible transmission of HBV through sexual contact with an infected partner, 17.4% did not believe that sexual contact with an infected partner was associated with a risk, while 38.8% was completely ignorant. About 32.3% understood that HBV is not transmitted by hugging infected individual, while 29.7% did not. Similarly, 50.7% of the study populations believed HBV can be transmitted through the use of needle contaminated with HBV. About 54% of the study population was sure HBV can be transmitted through the use of HBV infected blood product while 12.7% was not.

Table 1. Age and sex distribution of study population (n=728)

Age group	Female	Male	Total (%)
≤10	1	2	3 (0.4)
11–20	70	63	133 (18.3)
21–30	185	276	461 (63.3)
31–40	42	56	98 (13.5)
41–50	9	21	30 (4.1)
>50	1	2	3 (0.4)
TOTAL	308	420	728 (100)

Table 2. Level of awareness on hepatitis B viral infection among various age groups (n= 714)

Age group	Never heard (%)	Heard (%)	TOTAL (%)
≤10	0 (0%)	1(0.14)	1 (0.14)
11– 20	21(2.94)	106(14.85)	127 (17.79)
21– 30	103 (14.43)	350(49.02)	453 (63.45)
31– 40	8 (1.12)	90(12.61)	98 (13.73)
41– 50	3 (0.42)	29 (4.06)	32 (4.48)
>50	0 (0)	3 (0.42)	3 (0.42)
TOTAL	135(18.91)	579(81.11)	714(100)

21-30 years versus other age group: *p* value 0.00093

Table 3. Level of awareness on hepatitis B viral infection across gender (n=728)

Sex	No (%)	Yes (%)	Total (%)
Female	65(21.1)	243(78.9)	308 (100)
Male	759 (17.9)	345(82.1)	420 (100)
Total (%)	140(19.2)	588(80.8)	728(100.0)

p value 0.15017

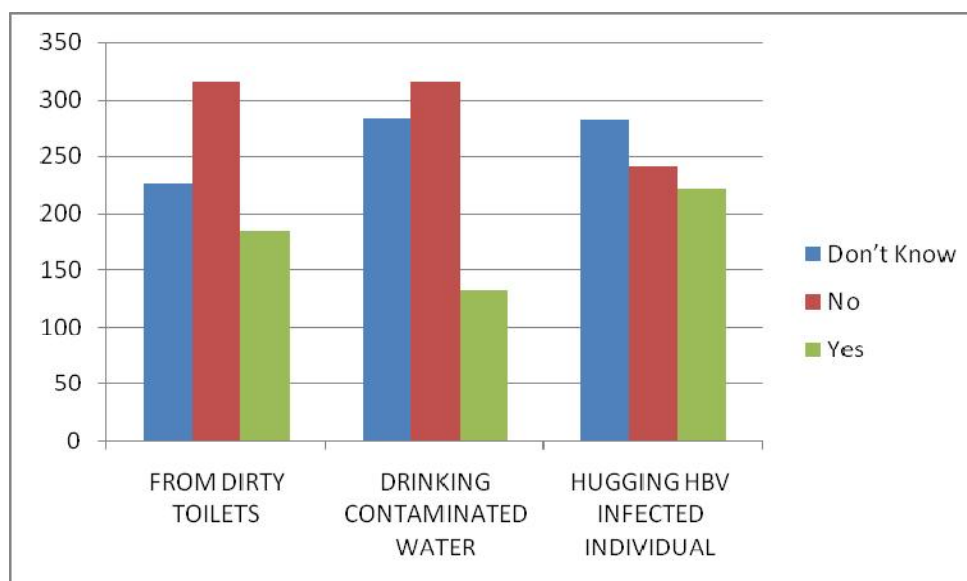


Fig. 1a. Level of awareness of the various modes of transmission of HBV among the study population (Y= study population, X= modes of transmission)

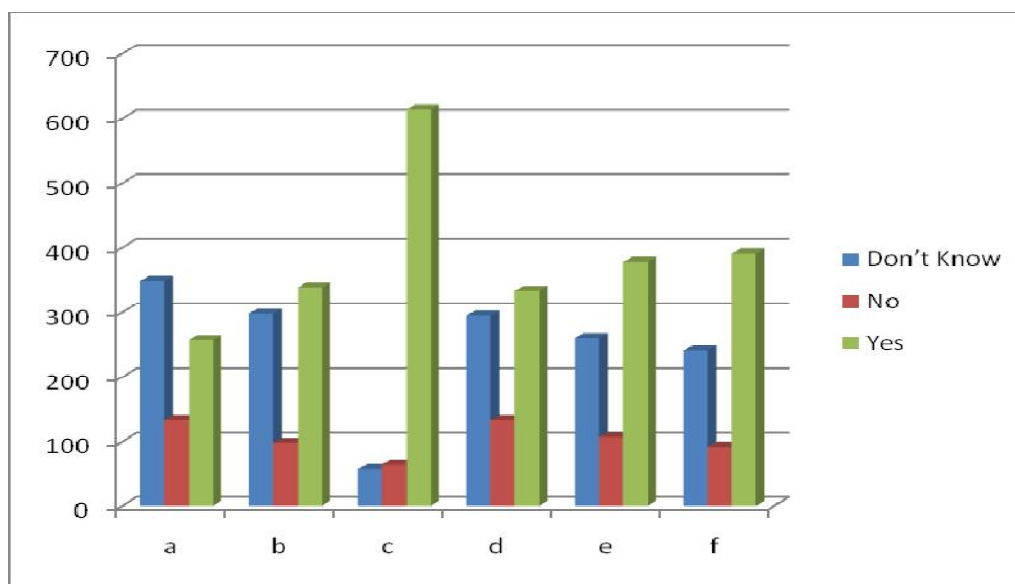


Fig. 1b. Level of awareness of the various modes of transmission of HBV among the study population (Y-axis =study population, X=modes of transmission)

Key:

- a= From infected mother to child during delivery
- b= From infected mother to child during breastfeeding
- c= From infected mother to child during pregnancy, delivery & breast feeding
- d= From infected mother to child during delivery
- e= Use of HBV contaminated needle
- f= Use of infected blood products

4. DISCUSSION

Adequate knowledge and practice of preventive measures will significantly reduce the prevalence of HBV. In this study, 80.8% of participants have heard of hepatitis B viral infection, showing a high level of awareness on hepatitis B virus infection among the generality of subjects recruited. This is similar to the findings of Olowo et al and Taylor et al who found that 80% of health workers in Irrua specialist hospital, and 75% among Camodian Americans have heard of HBV respectively [22,23]. Moreover, 83.3% of responders were aware that hepatitis B virus can be transmitted from mother to child during pregnancy, delivery and breastfeeding. This is much higher than the findings of Rashmi Sharma et al. [24] in which only 20% of the women studied in Jammu, India were aware of the mode of transmission of HBV and practicing preventive measures like use of condoms, sterile needles, avoidance of drug abuse and insistence on tested blood for transfusion. However, recent study by Zhang et al. [25] in China found that breastfeeding did not put children at risk of mother-to-infant transmission of HBV.

In this study in which 63% of the study participants were aged 21-30 years, about a quarter of them never heard of HBV showing a significant lower level of awareness on HBV among individuals in this aged group compared to other age groups in the study population. Since it has been established that individuals aged 21-30 years are generally more at risk of infection with agents (such as HIV) with similar mode of transmission, ignorance found among this age group is an important factor in favor of increased transmission of HBV in our environment. This is because those at the highest behavioral risk are least aware of the disease. This explains the finding in our earlier study conducted in this community which showed a relatively high prevalence of HBV seropositivity among individuals within this age group [7]. A lot of Health education with specific target on individuals in this age group (21-39 years) is therefore needed in the control of HBV in the study area. This is because many individuals in this age group may naturally get involved in activities that will put them at risk of HBV infection.

It was observed that, only 43% of our study participants were sure that HBV is not transmitted by dirty toilet or by drinking contaminated water. This is a reflection of deficit in knowledge and possibility of overprotection of one's self against hepatitis B viral infection. Wrong impression about the mode of transmission of HBV was relatively high as many believe an individual can be infected even by contact with sweat, through hugging and possibly shaking of hands with infected individuals. This may have a negative impact on the prevalence of the disease from stigmatization and neglect of important prevention habits for less important ones. Considering the level of education of subjects recruited into this study, in which majority (over 90%) attained up to tertiary level, the finding of such level of misconception showed that general education even at the tertiary level may be deficient in some important health information underscoring the necessity for health education with specific target on HBV for effective control of the disease.

In recent years, there has been series of Health Education, screening and vaccination for Hepatitis B viral infection in Benue state generally and Makurdi in particular [7,8] and these including other efforts has resulted in improvement in Hepatitis B virus awareness among the people. However, there are some misconceptions which may necessitate continuous Health Education on HBV among the people. A limitation in this study is that the study was majorly among educated individuals and may not necessarily represent the generality of Makurdi populace.

5. CONCLUSION

We conclude that there is a high level of awareness on Hepatitis B viral infection and mode of transmission in our study population; however there are still some misconceptions which can result in stigmatization of HBV infected individuals. We recommend the need to strengthen ongoing Health Education programs on HBV among the study population.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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