

HEPATITIS B VIRUS INFECTION: KNOWLEDGE OF ANTENATAL ATTENDEES IN A TERTIARY HOSPITAL

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ABSTRACT

Background: Hepatitis B virus infection constitutes a significant global health problem, and perinatal transmission continues to be one of the major routes of transmission in Nigeria. Having adequate knowledge about the virus and the available prevention strategies may lead to behavioural changes that will reduce the rate of acquisition and transmission of the virus.

Objectives: To assess the knowledge about Hepatitis B virus infection among pregnant women attending antenatal booking clinic

Methods: This was a cross-sectional study involving 354 pregnant women who presented for antenatal booking at Olabisi Onabanjo University Teaching Hospital Sagamu, Ogun State, Nigeria from 1st May to 31st July 2018. A pretested questionnaire was administered to assess awareness, knowledge and attitude of pregnant women to hepatitis B virus infection. Statistical analysis was done using IBM-SPSS version 21 (IBM Corp, Armonk, NY, USA).

Results: Two hundred and twenty-eight women (64.4%) were aware of Hepatitis B virus infection. One hundred and eighty-seven women (52.8%) correctly identified hepatitis as a viral infection, while 173 (48.9%) knew that hepatitis B mainly affects the liver. The major source of information was health workers. More than half of the women could not correctly identify the mode of transmission and methods of prevention of hepatitis B virus infection. There was a significant association between age and educational status of the women, and knowledge of Hepatitis B virus infection ($p=0.001$, $p=0.002$ respectively).

Conclusion: This study demonstrates a knowledge deficit on Hepatitis B virus infection among pregnant women. We recommend that there should be a community-based health education strategy targeted at increasing the awareness and knowledge of hepatitis B virus infection.

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INTRODUCTION

Hepatitis B virus is a double-stranded DNA virus and a member of hepadnaviridae family of viruses. The virus causes inflammation of the liver known as hepatitis.¹ It is a major cause of liver-related morbidity and mortality and poses a significant public health problem worldwide.¹ About 2 billion people are infected worldwide while 300-400 million are chronic carriers of the virus globally out of which 170 million cases are in Africa.¹⁻³ In Nigeria, the prevalence of hepatitis B infection in the general population ranges between 9.3% to 15.8%.⁴⁻⁷ This is higher than the prevalence of 1% in Western Europe, and America.⁶ Prevalence rates of 12.2% and 11.2% were reported in Ghana and Kenya respectively.^{8,9}

The mode of transmission of hepatitis B virus includes vertical transmission from mother to child, unscrutinized

blood transfusion, contact with infected body fluids and blood, needle stick injury and unprotected sexual intercourse with an infected partner.^{3,5}

Hepatitis B is a well-known carcinogen in the development of hepatocellular carcinoma. However, the virus is asymptomatic in 50% of infected cases. The clinical features include malaise, loss of appetite, nausea, vomiting, right hypochondrial pain, fever, arthralgia, myalgia, jaundice and dark colour urine.¹⁰ The prognostic spectrum includes total recovery and seronegative hepatitis B surface antigen (HbsAg) status, acute fulminant hepatitis with hepatic failure, chronic active hepatitis, chronic persistent hepatitis, chronic liver disease and hepatocellular carcinoma. Hepatitis B e antigen (HBeAg) is a marker for infectivity. The risk of perinatal transmission is about 70-90% in HBeAg positive pregnant women and 90% of these infected children subsequently become chronic carriers.¹¹ On the other hand, the risk of perinatal infection among infant born to HBeAg negative mothers ranges from 10-40% and about 40-70% of them eventually become chronic carriers.^{11,12}

Vaccination is the most effective method of prevention. This involves passive immunization with hepatitis B immunoglobulin and active immunization with live attenuated hepatitis B virus vaccine. Immunization of newborn has significantly reduced the risk of vertical transmission to less than 3 percent.¹² In addition to the

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vaccine, adequate knowledge about the mode of transmission and prevention may lead to behavioural changes that will reduce the rate of acquisition and transmission of the virus. Studies have shown that while awareness about hepatitis may be high, the level of knowledge may be low.¹³

Hepatitis B virus screening is part of the routine antenatal booking investigation in our facility; however, no study has been done to assess the awareness and knowledge of hepatitis B virus infection in pregnancy. Hence this study is designed to assess the awareness and knowledge of hepatitis B virus infection among pregnant women. The outcome of the study will serve as a basis for comparison with other studies done in other tertiary institutions and future studies on hepatitis B in our facility.

Materials and methods

This study was carried out at Olabisi Onabanjo University Teaching Hospital Sagamu, Ogun State, Nigeria. It was a cross-sectional study of pregnant women presenting at antenatal booking clinic from 1st May to 31st July 2018. The minimum sample size for this study was calculated using the Leslie-Kish formula¹⁴. Using a prevalence of 71.5% from a previous study¹³, the calculated minimum sample size was 313. However, to allow for attrition, a sample size of 354 was used for the study. The women were recruited consecutively until the required sample size was reached. A structured questionnaire was used for the survey among women at first contact in the antenatal booking clinic before health education by medical personnel. Most of the questions were closed-ended. The questionnaire was pretested at the antenatal clinic and administered by trained research assistants. Information obtained included awareness of hepatitis B virus infection, knowledge of the mode of transmission and methods of prevention, attitude to hepatitis B virus infection and the sources of information about hepatitis B virus infection. Women who had previously heard of hepatitis B virus infection were classified as being aware. The attitude to hepatitis B virus infection was assessed in terms of the willingness of the women to accept treatment if tested positive, and the willingness to let their babies receive hepatitis B immunoglobulin when indicated. Ethical approval for the study was obtained from the Health Research Ethics Committee of Olabisi Onabanjo University Teaching Hospital (reference number OOUTH/HREC/229/2018). The research was conducted in accordance with the World Medical Association Declaration of Helsinki. All study participants were given full information on all aspects of the study and then asked to sign an informed consent form. The study participants were assured of the confidentiality of data obtained from them. The data were entered into IBM-SPSS version 21 (IBM Corp, Armonk, NY, USA). Continuous variables were summarized using means. Categorical variables were summarized using frequencies and percentages. Chi-square was used to determine relationships between categorical variables. A p-value less than 0.05 was considered as statistically significant.

Results

The socio-demographic characteristics of the study participants are shown in table i. The mean age of the study population was 29.4±4.1 years with a range of 19-43 years. The age group 21-30 years accounted for the

majority (51.1%) of the women. The parity range was 0 - 6, majority 149(42.1%) of the respondents were within parity group 1-2, while grandmultiparas were the least 41(11.6%). The educational status of the study population revealed that 58(16.4%) pregnant women did not have any formal education, 47(13.3%) completed primary school, 143(40.4%) completed secondary school while 106 (30.0%) had tertiary education.

Out of the total sample size of 354, about 228 (64.4%) of the pregnant women surveyed were aware of hepatitis B virus infection. One hundred and eighty-seven women (52.8%) knew that hepatitis B is a viral infection, while 173 (48.9%) knew that hepatitis B mainly affects the liver. More than half of the women could not correctly identify the mode of transmission and the methods of prevention of hepatitis B virus infection (table ii).

The major sources of information about hepatitis B virus infection were health professionals 78(22.0%), school teachers 43(12.1%) and through radio and television 38(10.7%). Only 96(27.1%) women had been previously screened for the infection (table iii).

One hundred and five women (29.7%) were willing to let their babies receive hepatitis B vaccine if found positive while 109 women (30.8%) were willing to accept medications for treatment if tested positive.

Table iv depicts the association between knowledge of hepatitis B virus infection and socio-demographic status of respondents. There was a statistically significant association between the awareness of hepatitis B virus infection and age group ($\chi^2 = 27.4579$, $P < 0.001$). Similarly, there was a statistically significant association between the awareness of hepatitis B virus infection and educational status of respondents ($\chi^2 = 0.2821$, $P = 0.003$). There was no significant association between parity and awareness of hepatitis B virus infection ($\chi^2 = 14.2885$, $P = 0.963$).

Discussion

This study was designed to assess the baseline knowledge about Hepatitis B virus infection among pregnant women who presented for antenatal booking at a tertiary hospital. Out of the 354 pregnant women that participated in the study 64.4% were aware of hepatitis B virus infection, which was similar to 71.5% reported in Abakaliki but higher than 5% found in a study in India.^{13,15} Among the women who had awareness about the infection, the level of knowledge on the mode of transmission and methods of prevention was generally poor; only about half of the respondents knew that the virus mainly affects the liver. Similar findings were reported in Abakaliki, Ebonyi state.¹³ It was observed that 47.4% of the respondents were aware of mother to child transmission of hepatitis B virus; this was lower than 83.3% reported in Benue.¹⁶ This is expected as the latter study was conducted among members of staff and students of an academic institution where 90% of them had a tertiary level of education. Furthermore, only 30.8% of the respondents knew that HBV could be transmitted through sexual intercourse; this value is lower than 47% reported among antenatal women in Enugu.⁵ This is alarming and indicates an urgent need for extensive health education with a specific target on the role of risky sexual behaviour in the transmission of the virus.

Only one-quarter of the women had been previously

screened for hepatitis B virus infection. However, majority of the respondents who were aware of hepatitis B virus infection were willing to be screened. This underscores the importance of health education in promoting appropriate health-seeking behaviour. Thirty percent of respondents indicated the desire to take antiviral medications to prevent mother to child transmission of the virus, and also subsequently for their own treatment. A lower value of 11.7% was reported from a survey done in China.¹⁷ The perceived absence of appropriate guidelines and lack of supporting evidence to support either safety or efficacy may be responsible for the generally low desire for the use of antiviral drugs by hepatitis B virus-positive pregnant women.¹⁷

Administration of hepatitis B vaccine is a safe and effective prevention strategy against hepatitis B virus infection. In this study, only 37.8% of the participants knew that hepatitis B infection could be prevented by immunization with hepatitis B vaccine. Fortunately, active immunization with hepatitis B vaccine is currently part of the childhood immunization schedule in Nigeria. This might help in reducing the prevalence of hepatitis B virus seropositivity. Passive immunization with hepatitis B immunoglobulin is also recommended for hepatitis exposed neonates. However, only a third of the respondents indicated the willingness to allow their babies to receive hepatitis immunoglobulin at birth when indicated. This may be due to lack of awareness, and the cost implication, which is often beyond the reach of many women. Effort should be made to counsel hepatitis B virus-positive women on the need for passive immunization of their babies. It is also desirable that the government should subsidize the cost of this immune globulin so that many women could have access to it. The major source of information about hepatitis B virus infection was health workers. This is contrary to findings from a study done in Ghana, where mass media was the most important source of information.¹⁸

The age of the respondents had a statistically significant association with an awareness of hepatitis B virus infection. Women within the age group of 21-30 years demonstrated an encouraging level of awareness compared to other age groups. This might be because the age range represents the peak of reproductive age and such women were likely better informed about pregnancy-related health conditions¹⁹. Also, the educational status of study participants had a statistically significant association

with the level of awareness of hepatitis B virus infection. This underscores the importance of formal education in health promotion. The parity of respondents had no significant association with the awareness of hepatitis B virus infection; this is despite the fact that a sizeable proportion of the study participants were multiparous and would likely have received some education about hepatitis B virus infection as part of antenatal counselling in previous pregnancies. This indicates the need for more effective antenatal health education sessions.

This study revealed a suboptimal level of knowledge and awareness about hepatitis B virus infection among pregnant women. Health education and promotion targeted at improving awareness and knowledge of hepatitis B virus infection among women of reproductive age is essential. Improved knowledge of hepatitis B infection will likely lead to behavioural changes that will ultimately result in a reduction in mother to child transmission of hepatitis, and also the associated maternal morbidity and mortality.

Conclusion

The knowledge of Hepatitis B viral infection among the respondent is suboptimal. We recommend that there should be a community-based health education strategy targeted at increasing the awareness and knowledge of hepatitis B. Also, efforts should be channelled at increasing the coverage of hepatitis B immunization and promoting the use of hepatitis B immune globulin by babies of hepatitis B virus-positive mothers. This will help to reduce the prevalence of hepatitis B virus infection and subsequently, the rate of mother-to-child transmission.

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Table i: Socio-demographic characteristics of the study participants

Variable	Frequency	Percentage
Age		
<20	8	2.3
21-30	181	51.1
31-40	123	34.7
>40	42	11.9
Parity		
0	78	22.0
1-2	149	42.1
3-4	86	24.3
≥ 5	41	11.6
Educational status		
No formal education	58	16.4
Primary	47	13.3
Secondary	143	40.4
Tertiary	106	30.0

Table ii: knowledge on mode of transmission and methods of prevention of Hepatitis B virus infection

Knowledge	Yes (%)	No (%)	
Mode of transmission			
Unscreened blood transfusion	152 (42.9)	24 (6.8)	52(14.7)
Unprotected sexual intercourse	108 (30.5)	92 (26.0)	28(7.9)
Sharing of sharp objects	93 (26.3)	73 (20.6)	62(17.5)
Mother to child transmission	168 (47.4)	47 (13.3)	13(3.7)
Contaminated food / Water	87 (24.6)	103 (29.1)	38(10.7)
Mosquito bite	64 (18.1)	123 (34.7)	41(11.6)
Air-borne	71 (20.1)	107 (30.2)	50(14.1)
Method of prevention			
Immunization	134 (37.9)	63 (17.8)	31(8.7)
Safe blood transfusion	129 (6.4)	59 (16.7)	40(11.3)
Improved personal hygiene	104 (29.4)	80 (22.6)	44(12.4)
Avoid multiple sexual partner	168 (47.5)	23 (6.5)	37(10.4)
Avoid sharing of sharp objects	113 (32.0)	61 (17.2)	54(15.2)
Good food hygiene	173 (48.9)	34 (9.6)	21(5.9)

* A total of 126 women were not aware of Hepatitis B virus infection **The total sample size of 354 was used as denominator in calculating proportions.

Table iii: Sources of information to participants who are aware of hepatitis B virus infection

Medium	Frequency	%
Radio / Television	38	10.7
School teacher	43	12.2
Health worker	78	22.0
Books	36	10.2
Newspaper	22	6.2
Church / mosque	11	3.1
Total	228	64.4

* A total of 126 women were not aware of Hepatitis B virus infection **The total sample size of 354 was used as denominator in calculating proportions

Table iv: Association between awareness of hepatitis B virus infection and socio-demographic status of study participants

VARIABLE	YES N(%)	NO N(%)	Chi-Square	P-value
Age				
<20	2(33.3)	6(66.7)	27.4579	<0.001*
21-30	139(76.8)	42(23.2)		
31-40	64(59.3)	59(40.7)		
>40	23(54.8)	19(45.2)		
Parity				
0	51(65.4)	27(34.6)	0.2821	0.963
1-2	97(65.1)	52(34.9)		
3-4	55(67.9)	31(32.1)		
≥5	25(61.0)	16(39.0)		
Educational status				
Informal	35(60.3)	23(39.7)	14.2885	0.003*
Primary	22(46.8)	25(53.2)		
Secondary	107(72.8)	36(27.2)		
Tertiary	64(60.4)	42(39.6)		

*P<0.05 is statistically significant

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