



KNOWLEDGE AND ATTITUDE OF BLOOD DONORS TOWARDS HEPATITIS B VIRUS RISK BEHAVIOUR IN IKENNE LOCAL GOVERNMENT AREA, OGUN STATE, NIGERIA

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ABSTRACT: *Hepatitis B virus (HBV) infection poses a major global health concern, responsible for estimated 500,000 to 1.2 million human deaths each year. The clinical manifestations of HBV-related deaths that usually arise after chronic-hepatitis include liver cirrhosis and hepatocellular carcinoma. The transfusion of blood is a critical risk point for inadvertent transmission of Hepatitis B virus at emergency healthcare points. This poses a significant public health challenge especially in developing countries. The impact of this challenge in Ikenne Local Government area is yet to be estimated. This study was designed to assess the level of knowledge and attitude of blood donors in the four major towns in Ikenne Local Government Area of Ogun State, Nigeria. A questionnaire survey enlisted 143 blood donors at selected blood banks in Ikenne, Ilishan, Iperu and Irolu towns in Ikenne Local Government Area, Ogun State, from February 4th to March 24th, 2021. Data collected were summarized using descriptive and correlation test statistics. Some 120 (93.9%) of the respondents were 18-34 years old. Unpaid donors accounted for 102 (78%) of the respondents. 2.8% of the respondents were confirmed positive for Hepatitis B virus before. Some 113 (86.9%) agreed that people should freely go for laboratory screening. Two-third 82 (63.1%) of the respondents indicated they knew where to get screened. Respondents' knowledge was scored 2.423 ± 0.963 , while a weak positive correlation was found between respondents' knowledge and their risk behaviour ($R = 0.296$; $P = <0.0001$). The mean \pm standard deviation of attitude of respondents was 4.207 ± 0.859 , while a weak positive correlation was found between respondents' Attitude and their risk behaviour ($R = 0.225$; $P = < 0.010$). Blood donors previously screened for the virus in general had better knowledge and behavioural attitudes that were compliant with Hepatitis B prevention, compared with previously unscreened individuals who exhibited high risk behaviour to the virus.*

KEYWORDS: Knowledge, HBV (Hepatitis B virus), Ikenne Local Government Area.



INTRODUCTION

Hepatitis B virus is one of the major health problems globally resulting in enormous burden on healthcare systems and patient's misery (Apata et al., 2014). Infection with Hepatitis B virus is a major cause of morbidity and mortality globally, primarily because of the sequelae of chronic liver disease including cirrhosis and hepatocellular carcinoma. The disease has caused epidemics in parts of Africa, and it is endemic in China (Okwesili, Usman et al., 2014). According to Center for Disease Control and Prevention (CDC) Hepatitis B virus (HBV) is present in the blood, blood products, and body fluids such as vaginal secretions, semen and in low concentration in the saliva of carriers (Kobah, Okpara et al., 2016). Blood transfusion remains a substantial source of Hepatitis B virus infection in sub-Saharan Africa.

Although blood transfusion is arguably one of the wonders of modern medicine but not without its own shortfall, as it has been implicated in the transmission of infectious diseases including Hepatitis B virus. Since it poses a significant challenge to blood safety globally and especially in sub-Saharan Africa (Walan, Hokey, et al., 2014), there is a need to assess the knowledge, attitude and compliance of prospective blood donors in the Ikenne Local Government Area towards Hepatitis B virus. This is more so important because the infection may go unnoticed over a relatively long period. As a result, blood borne transmission from asymptomatic donors with acute HBV infections who have undetectable surface antigen of HBV (HBsAg), especially donors in their sub-clinical window period, or from donors with chronic HBV infections in whose serological markers were not detected, sometimes cause residual infections leading to Relevant Transfusion Transmitted Infections (RTTIs).

The aim of the study was to assess the prevalence of positive blood donors for Hepatitis B virus in Ikenne LGA, and how their level of knowledge about the disease risk behaviour influences their attitudes and compliance with standard preventive practices.

MATERIALS AND METHODS

The study adopted a cross-sectional survey design. The primary population of the study was drawn from blood donors in four towns of Ikenne Local Government Area of Ogun State. A total enumeration method was utilized in enlisting participants into the study. The respondents were approached at the point of donation. Participants eligible for this study were blood donors who were present, available and willing to participate. Blood donors who were out of the age range of WHO criteria for blood donation, nursing mother, indisposition, menstruating females, pregnant women etc will not be eligible for this study. Data collection was carried out for about four weeks using the interviewer administration approach, it was done with 4 recruited research assistants and this will allow for simultaneous collection of data. Quantitative data collected was coded and entered into the computer through IBM SPSS version 27. The data was subjected to descriptive (mean, standard deviation) and correlation analysis. This was guided by the research questions. Statistical significance level was set at $p \leq 0.05$.

Ethical clearance was obtained from the Babcock University Health Research Ethics Committee (BUHREC).



RESULTS

A total of one hundred and thirty instruments were distributed to blood donors in the Local Government Area (LGA). One hundred and thirty blood donors were recruited to participate in the study. The response rate after the questionnaires were retrieved was 98.7%. Majority 120 (93.9%) of respondents were aged between 18 and 34 years, about two-third (66.9%) of the respondents were single, 81.5% were Christians while 90 (73.1%) of the respondents had up to tertiary education. 50.0% of the respondents were Yoruba and 51 (39.2%) were employed. 102 (78%) of the respondents were not paid donors. 3 (2.8%) of the respondents were confirmed to be positive for Hepatitis B virus. 95 (73.1%) of the respondents have heard about Hepatitis B virus before. About 113 (86.9%) agreed that people should freely go for Hepatitis B screening. Almost two-third 82 (63.1%) of the respondents said they know where to get screened. The mean \pm standard deviation of the knowledge of respondents was 2.423 ± 0.963 ($P = < 0.0001$).

Knowledge is significantly correlated between Knowledge and Life-style

$R = 0.296$ shows that there is a weak positive correlation between Knowledge and Life-style practices

P -value = 0.001 Knowledge contributed to 29.6% in the patterns of changes between Knowledge and Life-style practices (Correlation significant @ $p < 0.05$)

The analysis of data on attitude of the respondents' about exposure to Hepatitis B virus shows that 90 (69.2%) respondents' were sexually active, about (62.3%) had sexual contact in the last six-months. Only 18 (13.8%) of the respondents' had more than one sexual partner. Talking of exposure related to clinical and surgical procedures, 124 (95.4%) asserted they had not in the past 12 months received blood transfusion, treatment with human or animal products.

The attitude of the respondents' shows that 51 (39.2%) had a good attitude of Hepatitis B virus while 79 (60.8%) had a poor attitude about Hepatitis B virus. The mean \pm standard deviation of the attitude of the respondents' was 4.207 ± 0.859 .

Attitude was significantly related to Life-style practices.

$R = 0.225$ shows that there was a weak positive correlation between attitude and life-style.

P -value = 0.010 shows that attitude contributed to 22.5% change in the pattern of life-style practices.

**Table 1: Socio-demographic Characteristic of the Respondents**

Variable	Frequency (n=130)	Percentage (%)
Age (years)		
18-30	86	66.2
31-43	34	27.7
44-56	7	5.4
57-65	1	0.8
Marital Status		
Single	87	66.9
Married	43	33.1
Religion		
Christian	106	81.5
Islam	20	15.4
Others	4	3.1
Educational Level		
No formal education	2	1.5
Primary	3	2.3
Secondary	30	23.1
Tertiary	95	73.1
Ethnicity		
Yoruba	65	50.0
Igbo	38	29.2
Hausa	11	8.5
Others	16	12.3
Employment Status		
Employed	51	39.2
Self-employed	35	26.9
Schooling	39	30
Unemployed	5	3.8
Monthly Income		
Less than 20,000	32	24.6
20,000-50,000	57	3.8
50,000-100,000	21	16.2
Above 100,000	20	15.4

Are you a paid donor		
Yes	28	21.5
No	102	78.5
Are you Hepatitis B Positive?		
Yes	3	2.8
No	127	97.2



The majority 120 (93.9%) of respondents were aged between 18 and 34 years while only 8 (6.1%) of the respondents were between 44-65 years. About two-third (66.9%) of the respondents were single, 81.5% were Christians while 90 (73.1%) of the respondents had up to tertiary education. In addition, 50.0% of the respondents were Yoruba and 51 (39.2%) were employed. 57 (43.8%) of the respondents had their monthly income between #20,000-#50,000, while 102 (78%) of the respondents were not paid donors. 3 (2.8%) of the respondents were confirmed to be positive for Hepatitis B virus.

Table 2: Knowledge of Hepatitis B Infection among Respondents

Variable	Frequency (n=130)	Percentage (%)
Knowledge (on a 5-point rating scale)		
Good	71	50.7
Poor	64	49.3
Mean \pm Standard Deviation	2.423 \pm 0.963	
Have you heard about Hepatitis B virus before		
Yes	95	73.1
No	35	26.9
Have you ever being screened for Hepatitis B virus		
Yes	60	46.2
No	70	53.8
Is being screened for Hepatitis B virus beneficial		
Yes	94	72.3
No	36	27.7
Must you be forced to get screened for Hepatitis B virus		
Yes	17	13.1
No	113	86.9
Do you know where to get screened for Hepatitis B virus		
Yes	82	63.1
No	48	36.9

The knowledge of Hepatitis B infections among the respondents:

It is shown that 95 (73.1%) have heard about Hepatitis B virus before. Of the respondents, 70 (53.8%) had been screened for Hepatitis B virus, though 94 claimed/agreed that Hepatitis B screenings are beneficial. About 113 (86.9%) agreed that people should freely go for Hepatitis B screening. Finally, almost two-third 82 (63.1%) of the respondents said they know where to get screened for Hepatitis B virus.

The knowledge of the respondents on a 5point rating scale was that 71(50.7%) of the respondents had a good knowledge of Hepatitis B and about 64 (49.3%) had a poor knowledge of Hepatitis B. The mean \pm standard deviation of the knowledge of respondents was 2.423 \pm 0.963.



A significant association exists between good knowledge of Hepatitis B virus and having been screened for the virus before; $P = < 0.0001$

Table 3: Relationships between Respondents' knowledge and Life-style Practices to exposure to Hepatitis B virus

Variable	Mean	Standard Deviation	Correlation coefficient (r)	P-value
Knowledge	2.423	0.963	0.296	0.001
Life-style Practices	7.000	0.923		

Correlation Significant @ $p < 0.05$

Knowledge is significantly correlated between life-style and knowledge

R = 0.296 shows that there is a weak positive correlation between knowledge and life-style practices

P-value = 0.001 Knowledge contributed to 29.6% in the pattern of changes between knowledge and life-style practices.

RESEARCH HYPOTHESIS

H_A = There is a positive correlation between knowledge of the blood donors and their Life-style practices about Hepatitis B virus.

The Pearson products correlation was conducted to examine the relationship between Knowledge of the blood donors and their Life-style practices. The results showed that there was a weak positive relationship between two variables, which was statistically significant. ($R = 0.296$, $P = 0.001$) (Table 3). The alternative hypothesis was accepted while the Null hypothesis was rejected.

H_A = There is a positive correlation between life-style of the respondents' and their attitude about exposure to Hepatitis B virus.

The Pearson products correlation was conducted to examine the relationship between attitude of the blood donors and their life-style practices. The results showed that there was a weak positive relationship between the two variables, which was statistically significant. ($R = 0.225$, $P = 0.010$) (Table 5). The alternative hypothesis was accepted while the null hypothesis was rejected.

**Table 4 Respondents Attitude of Hepatitis B Virus Transmission**

Variable	Frequency (n=130)	Percentage (%)
Perception (on a 6-point rating scale)		
Good	51	39.2
Poor	79	60.8
Mean \pm Standard deviation	4.207 \pm 0.859	
Will you rate yourself as sexually active		
Yes	80	69.2
No	40	30.8
In the past 6 months, how many sexual partners have you had		
None	49	37.7
One	63	48.5
Two	7	5.4
Three	6	4.6
Four	4	3.1
Five	1	.8
Do you know the Hepatitis B status of your last partner		
Yes	42	32.2
No	88	67.7
In the last 12 months, have you been in close contact with person(s) with Hepatitis		
Yes	15	11.5
No	115	88.5
Have you ever received a tissue or organ transplant		
Yes	8	4.6
No	124	95.4
Have you in the past 12 months received blood transfusion, treatment with human or animal products		
Yes	6	4.6
No	124	95.4

The analysis of data on the attitude of the respondents about exposure to Hepatitis B virus.

It further shows that 90 (69.2%) respondents were sexually active and about 62.3% had sexual contact in the last six months. And only 18 (13.8%) of the subjects had more than one sexual partner.

The data analysis revealed that 67.7% of the respondents had no idea about the Hepatitis B virus status of their sexual partners. Talking of exposures related to clinical and surgical procedures, 124 (95.4%) asserted they had not, in the past 12 months received blood transfusion, treatment with human or animal products.



The attitude of the respondents on a 6point rating scale shows that 51 (39.2%) had a good attitude of Hepatitis B and while 79 (60.8%), which is, more than half had a poor attitude about Hepatitis B. The Mean \pm Standard Deviation of the attitude of the respondents was 4.207 ± 0.859 .

A significant association exists between good attitude of exposure to Hepatitis B virus and having been screened for the virus before; $P = < 0.0001$

Table 5: Relationships between Respondents Attitude and Life-style on Hepatitis B Virus

Variable	Mean	Standard Deviation	Correlation Coefficient (r)	P-value
Attitude	4.207	0.8599	0.225	0.010
Life-style Practices	7.000	0.9234		

Correlation Significant @ $p < 0.05$

Hypothesis: Attitude is significantly related to life-style practices.

R = 0.225 shows that there is a weak positive correlation between attitude and life-style.

P-value = 0.010 shows that attitude contributed to 22.5% changes in the pattern of life-style practices.

DISCUSSION

The findings in this study showed that more of the respondents were between the ages of 18-30 years, (Donating –Frequently Asked Questions, 2008) suggest that age, weight and height are important factors when considering the eligibility of donors. On the statistics, it shows that ages 57-66 (0.8%) weren't fully involved because according (Goldman, et al, 2007) elderly donors are sometimes deferred on age alone because of health concerns.

The statistics showed that a particular ethnic group superseded the others and this can be related to donor's race or ethnic background is sometimes important since some blood types, especially rare ones are more common in certain ethnic groups according to (Severo & Richard 1990).

The prevalence rate of HBV positive patients in Nigeria particularly in Ogun State had a statistics of 3 (2.8%) while according to (Hepatitis B, 2015), WHO had a prevalence rate of $<2\%$, $2-8\%$ and $>8\%$ as low, intermediate and high prevalence of HBV, respectively. In EMRO and some other Middle Eastern Countries, it has been reported that HBV prevalence cut across all age groups according to (Ott et al, 2012). Studies conducted in EMRO and Middle Eastern Countries detected a prevalence of HBsAg positive results in blood donors and having different values, which can also be related to this study.



According to this study and in relation to (Tong et al, 2013, Saha et al, 1988, Ndumbe & Nyouma E, 1990, Sarkodie, et al, 2001), it shows that there is a relationship between this study and the one done in West Africa Sub-region, which was reported that the prevalence of HBV ranges from between 3 to 22% among blood donors.

A lot of studies have shown that the main reason people donate is for selflessness, charity, general awareness regarding the demand for blood, increased confidence in oneself, helping a personal friend/relative and social pressure (Edwards Patrick & Zeichner Amos 1985). This can be related to this study because about 78.5% proved to be voluntary donors. In the developed world, most blood donors are unpaid volunteers who donate blood for a community supply.

Many donors donate for several reasons, such as form of charity, general awareness, the demand for blood, increased confidence in self, helping a friend or relative and also social pressure.

The World Health Organization set a goal in 1997 for all blood donations to come from unpaid volunteer donors, but as of 2006, only 49 to 124 countries surveyed had established this as standard (World Blood Donor Day, 2006).

El Beltagy et al (El Beltagy et al, 2008), showed significant association with married status, specific occupations such as blue-collar worker, the military, family history of HBV infection, lack of immunization, and lower educational level. In the general population low educational status has been associated with high prevalence of hepatitis B in both developing and developed countries.

In Africa, more than 50 million people are chronically infected with a mortality risk of about 25% (WHO, Global Database on Blood Safety, (2015). This article can also be related to this study because the knowledge of HBV among respondents was about 95 (73.1%). This study can also be related to (La Torre et al, 2016) which says the high variability in the prevalence observed in developing nations such as 1.6-7.7% in Brazil, 19.6% in Egypt and 2-10% across Indian.

In Nigeria, the pooled prevalence of HBV is reported to be about 13.6% (Ikobah et al, 2016).

A study shows that the demonstration of Hepatitis B Surface Antigen (HBsAg) in the blood is based on diagnosis and screening of blood for Hepatitis B virus (HBV) infection in most developing countries in which Nigeria is included (Salawu et al, 2011) and this can also be added that in Ikenne Local Government in Ogun State, Nigeria had 70 (53.8%) of respondents had not been screened for Hepatitis B virus.

Due to not being screened, In Africa, more than 50million people are chronically infected with mortality risk of about 25% (WHO, Global Database on Blood Safety, 2015).

A good knowledge of HBV virus means and modes of infection as well as adequate vaccination may reduce infection rate. The knowledge of HBV is generally low among the populace in a study carried out among Turkish community in the Netherlands (Y.J.J Van, O, et al, 2010), which can be related to this study.



HBV could be transmitted through many other routes, and inadequate knowledge of HBV among healthcare workers may reflect their behavioural pattern to vaccination and safety measures. The awareness level of 96% for HBV among respondents was similar to that reported by (Okwara et, al, 2012), this also can be related to this study which had a (73.1%) awareness of Hepatitis B virus.

This may probably have been as a result of the educational programmes on hepatitis received from the place of work and the news media as well as patients and staff members with complications of chronic hepatitis B virus infection that presents regularly to the hospital, this is contrary to this study.

Some respondents did not know about the chronic complications of the HBV like liver cirrhosis and liver, this can be related to this study, which had respondents 70(53.8%) who had no clue of being screened to avoid having liver cancer.

This shows the lack of in-depth knowledge about HBV among these health workers beyond ordinary awareness. This finding agrees with the reports by other authors in Nigeria (E.C. Okwara, et al, 2012, S.C. Nwokediuko, 2011).

CONCLUSION

Knowledge of previously screened blood donors were significantly related to Hepatitis B preventive practices whereas the knowledge, attitude and life-style practices of donors that have not been previously screened did not significantly comply with Hepatitis B preventive measures. Thus; making them more susceptible to exposure. Thus; a number of them would not be fit for blood donation.

RECOMMENDATION

The following recommendations are hereby suggested:

1. Public health advocacy and education on HBV infection should be intensified in hospitals especially for prospective blood donors to be well educated about the preventive practices against the infection.
2. The role of vaccination in the preventive and control of HBV infection in the general population cannot be overemphasized.
3. There is a need to formally educate the community members most especially blood donors through universal basic education and mass education.



Limitation of the Study

Despite the results of the study and the valuable insight revealed, the study however has the following limitations:

1. The study, being a cross-sectional study, was faced with recall bias.
2. The participants may have under or over reported information if they perceived the response to be socially desirable.

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