

Life-Style Practices of Blood Donors towards Exposure to Hepatitis B Virus 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 usually arise after chronic-hepatitis includes 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 attitude and lifestyle 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 22nd, 2021. Data collected were summarized using descriptive and correlation test statistics. The result shows that only 15.4% of the respondents had at least one sexual partner or wife or husband as the case may be. Similarly, majority 112 did not practice bloodletting or ritual practices as only about 18 (13.3%) respondents did engage in these risky practices. Moreso, in the last 12 months, 10% of the respondents had one of tattoo, ear and body piercing, acupuncture, incisions and scarifications done while a good number 109 (83.8%) did not engage in such risky life-style practices. The mean \pm standard deviation of lifestyle of respondents was 7.000 ± 0.923 , while a weak positive correlation was found between respondents. Lifestyle and their risk behavior ($R = 0.225$; $P = 0.010$)

Introduction

Hepatitis B virus is one of the major health problems globally resulting in enormous burden on healthcare systems and patient's misery [1]. 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 of endemic in China. 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 [2]. 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, there is a need to assess the knowledge, attitude and compliance of prospective blood donors in 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 behavior influence their attitudes and compliance with standard preventive practiced.

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
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

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, indispose, 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 significant level was set at $p \leq 0.05$. Ethical clearance was obtained from the Babcock University Health Research Ethics Committee (BUHREC).

Table 2: Patterns of Risky Life-style Practices among the Respondents.

Variable	Frequency (n=130)	Percentage (%)
Pattern (on a 10-point rating scale)		
Good	89	74.6
Poor	33	25.4
Mean ± Standard Deviation	7.000 ± 0.923	
I have more than one sexual partner/wife/husband		
Yes	14	10.8
No	110	84.6
I don't know	6	4.6
I participate in blood sharing, blood-letting or ritual practices		
Yes	14	10.8
No	112	86.2
I don't know	4	3.1
I have taken Hepatitis B vaccine		
Yes	30	23.1
No	85	65.4
I don't know	15	11.5
In the last 12 months I have had one of these done (tattoo, ear/body piercing, acupuncture, incisions, scarification)		
Yes	13	10
No	109	83.8
I don't know	8	6.2
I am a traditional birth attendant/assisted or worked with traditional attendant before		
Yes	3	2.3
No	119	91.5
I don't know	8	6.2
I engage in unprotected sex/causal sex		
Yes	32	24.6
No	90	69.2
I don't know	8	6.2
Stigmatization is a major reason I do not disclose my Hepatitis B virus status		
Yes	6	4.6
No	89	68.5

I don't know	35	26.9
There is nothing bad in same sex practice		
Yes	14	10.8
No	93	71.5
I don't know	23	17.7
I seldomly inject myself with drugs to get high and catch fun		
Yes	4	3.1
No	120	92.3
I don't know	6	4.6
I share personal items like toothbrush, clipper, nail cutter		
Yes	21	16.2
No	104	80
I don't know	5	3.8

Table 3: Relationship between screened and unscreened blood donors Chi-square @ p < 0.0001

Variable	Observed Frequency	Expected Frequency	Chi-Square Test Statistics	P-value
Life-style of previously screened	38	34	15.358	0.0001
Life-style of previously unscreened	32	12		

Hypothesis 1: The significant difference in the level expected and observed Frequencies of screened and unscreened blood donors.

Chi-square test statistics = 15.358 shows the statistics between screened and unscreened blood donors.

P-value = 0.0001 shows the lifestyle of screened and unscreened blood donors.

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. The result shows that only 15.4% of the respondents had at least one sexual partner or wife or husband as the case may be. Similarly, majority 112 did not practice bloodletting or ritual practices as only about 18 (13.8%) respondents did engage in these risky practices. Moreso, in the last 12 months, 10% of the respondents had one of tattoo, ear and body piercing, acupuncture, incisions and scarifications done while a good number 109 (83.8%) did not engage in such risky life-style practices. Just a few 3 (2.3%) were or had assisted a traditional birth attendant before, 32 (24.6%) have had unprotected sex, 10 (7.7%) were intravenous drug users, and 26 (20%) shared personal items like toothbrush, clippers, razors and nail cutters. Also, about 37 (28.5%) saw nothing in a risky sexual practice such as same sex. Finally, the data showed only a

few 30 (23.1%) had previously taken preventative and protective Hepatitis B vaccine against possible exposure to the deadly virus, while a whole lot 100 (76.9%) of the studies population remained unvaccinated. The pattern of respondents on a 10point rating scale had 89 (74.6%) of good life-style of Hepatitis B and 33 (25.4%) had a poor life-style on Hepatitis B virus. Mean ± Standard Deviation was 7.000 ± 0.923. The majority 120 (93.9%) of respondents were aged between 18 and 34years 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.

Test of hypotheses

Two hypotheses were tested for this study. In testing these hypotheses, a nonparametric Pearson's correlation was conducted at 0.05 level of significance. The decision rule applied was that if the p-value computed was less or equal to the cut-off p-value of 0.05, then the null hypothesis will be rejected in favor of the alternative hypothesis and if the p-value computed is greater than the cut-off p-value of 0.05, then the null hypothesis will be accepted in favor of the alternative hypothesis.

Discussion

From the finding in this study showed that more of the respondents were between the ages of 18-30 years, [3] 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 [4] 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 type, especially rare ones are more common in certain ethnic groups according to [5]. The prevalence rate of HBV positive patient in Nigeria particularly in Ogun State had a statistics of 3 (2.8%) while according to [6], 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 [7]. 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 [8-11], 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 [12], this can be related to this study because about 78.5% proofed to be voluntary donors. In 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 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 a standard [13]. El Beltagy et al, [14], showed significant association with married status, specific occupations such as blue-collar worker, the military, family history of HBV infection, lack of immunization, 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 mortality risk of about 25%. 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 [15] 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% [2]. 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 [16] 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 been screened, In Africa, more than 50 million people are chronically infected with mortality risk of about 25%. There is a relationship between the pattern of life-style practices among respondents and that of which says other possible forms of transmission include sexual contact, blood transfusion and transfusion with other human blood products, [17], re-use of contaminated needles and syringes [18]. Factors that may be associated with acquiring HBV infection include sharing of hair clippers, needle-stick injuries, pedicure tools, dental procedures, and cultural practices such as tribal marks, traditional circumcision and tattoo inscriptions. Hepatitis B vaccine was first vaccine capable of preventing cancer, specifically liver cancer [19] this can also be related to the respondents that have not been vaccinated which could cause liver cancer. With this study immunization is of a vital importance among respondents to reduce the burden of HBV and its contending risks [20].

According to [21], the high prevalence rate and mortality due to HIV/AIDS in Nigeria are basically due to some cultural practices that promote the spread of the virus. For example, sex is traditionally seen as a private subject, which can be related to this study. Behavioral risk such as intravenous drug use, needle stick injuries, tattooing and multiple sexual partners have been identified as one of the commonest modes of HBV transmission in the developed World [22]. Jagannathan et al, [23] found out several demographic and behavioral risk factors that are associated with HBsAg status among blood donors in Bangalore, India; First time donors, patronage of local barbers that probably have no relevance for blood safety and public health. The risk factors were confirmed by Akhatar et al [24] where injury resulted in bleeding during shaving from barber's place was also a significant predictor of HBsAg positivity.

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 measure. 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 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 been 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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