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Socio-Demographic factors influencing the prevalence of hepatitis 'B' in North-Eastern Geo-Political zone, Nigeria

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Abstract
The study was based on Assessment factors that influence prevalence of HBV, in North Eastern geo-Political Zone, Nigeria. The safety of blood services is one of the major issues has affected with the hepatitis b viruses. Transmission of hepatitis B virus infection through donated blood is reportedly very common particularly in the developing world including Africa, Nigeria and geo-Political Zones. In this context, the objectives of the study were to determine social demography factors that influence prevalence of hepatitis B infections, to examine preventive strategies that eliminate hepatitis B infection, to observe cultural factors that contribute prevalence of hepatitis B infection and to determine the individual factors that influence prevalence of hepatitis B infections. The methods used in this research study were all about questionnaires to collect data structured and unstructured questionnaires were extended to respondents which needed short and precise answers. The researcher used as well, purposive, convenience and simple random sampling methods and sample study determination. Purposive sampling was used to consider the target population, which will be fixed blood voluntary donors and above 18 years of age. Convenience sampling was used to determine the study population that would be readily available. Simple random sampling was used to pick any subject within the sampling frame in order to reduce bias within the study by giving the questionnaire at random to those subjects who would accept aged above 18 years. The study findings established that the youth were highly constituted the majority of our respondents. These may be easily affected due the adolescence stages that are faced which lead them to experience intersex without any protection and misuse medical instruments. Preventing injuries from sharps and needle sticks is considered a part of the "routine practices" used by healthcare worker; therefore, it is relevance and test before any relationship for partners and community vaccination to lessen its propagation. The risk of infection from contaminated needle sticks is much greater than the risk of spreading HIV by this method. In the United States, illegal drug use injection accounts for about 16 percent of new hepatitis B infections. But this was not the case of awareness about this virus propagation by agents working in north eastern zone of Nigeria. The researcher recommends that The government should sensitize the community to under do vaccination against hepatitis B., improving education among girls, especially beyond primary school needs to be strong encouraged by the Government as education has an impact on the women decision on the place of delivery and within house hold to lessen hepatitis B propagation, first-aid should be immediate if there has been exposure to blood or body fluids.. Hence, follow the employer's procedure for further testing. First-aid will include: Thoroughly rinsing the injury site with running water, and gently cleaning with soap and water if possible; eyes, nose, or mouth should be flushed with running water and non-intact skin should be rinsed thoroughly.

Keywords: hepatitis B, laboratory technologists, north eastern states

Introduction
Global efforts at disease prevention and control have produced satisfactory results in some countries of the world. In Taiwan, for instance, the disease burden has been reduced considerably with the use of immunization. Hepatitis B vaccine was effectively incorporated in the Nigerian National program on immunization less than 10 years ago and therefore it's effective, if any is likely to be seen in children and not adults. The safety of blood services is one of the major issues has affected in the hepatitis B viruses. Transmission of hepatitis B virus infection through donated blood is reportedly very common particularly in the developing world including Africa. The prevalence of hepatitis B chronic carriage in West Africa ranges between 3% and 22% in blood donors. From this perspective study, it shall express us how blood donor community have been aware about hepatitis HBV which associate with major precaution so as to gate safe blood to assist our patients who need the blood to save their lives. Also it helpful for ministry of health through blood bank to plan good ways of preventing Hepatitis for National development (Candotti, 2009).

The data from North Eastern Zone of Nigeria indicate a burden of chronic HVV infection with an estimated 2–6% of the population having chronic HBV infection before the

introduction of vaccine; however, other studies have found even higher prevalence of chronic infection. Because of the burden of chronic HBV infection, North Eastern states of Nigeria. establish HBV vaccination program through different channels, routine infant HBV vaccination beginning at birth was introduced into the national vaccination Surveillance data have shown a increase the burden of hepatitis B in the population; reported acute hepatitis B cases increase up to 52 cases in 2007. In addition, the prevalence of HBVs among blood donors has increased from 2% in 1990 to 4% in 2010. However, these data do not show the impact of the hepatitis B vaccination program among children, who are the target of the vaccination program and the most likely to acquire chronic HBV infection caused by prenatal and early childhood HBV transmission. The safety of blood products is one of the major issues in the area of transfusion medicine. Typically, more than 50% of blood donors and blood recipients have had natural exposure to Hepatitis viruses (Saad & Shamsu, 2015) [5].

Therefore, it is against this aforementioned that, the study was intended to explore the prevalence of hepatitis B virus infection in North Eastern States of Nigeria.

Related Literature

Hepatitis B virus (HBV) infections are the most important infectious diseases throughout the world particularly in developing countries. Hepatitis B virus causes both acute and chronic hepatitis. The global prevalence of chronic HBV infection is clustered as high (≥8%), intermediate (2-7%) Many people with chronic HBV are unaware that they are infected because HBV are often asymptomatic until advanced liver damage has developed. Without knowledge of status, an individual cannot receive timely treatment or make life changes to stem the progression of the disease and prolong high quality of life. Such changes include cessation of alcohol, a good diet, and regular exercise. Without knowing they are infected, persons with HBV may unknowingly transmit the viruses to others (Bio-Med, 2014).

HBV is transmitted through infected blood and bodily fluids and is transmitted through infected blood. HBV is 50 to 100 times more infectious than HIV and is most commonly spread through sexual contact. HBV are also spread through sharing needles and other drug-injection equipment. Unlike HBV, which can be prevented with safe and effective vaccine? Other factors that pose to increase hepatitis B infection are social demographic factors and individual factors; this situation can be reduced if preventive strategies will be followed so as to reduce number of infection. In this circumstance, there are many studies from different country and references, which try to discuss this challenge from different perspectives and vision (John & wiley, 1999) [5].

Socio Demographic and Cultural Factors

In this variable shows that Socio demographic and cultural factors and can impress to spread hepatitis B infection through different ways. The main aspect contribute the infection through these factors are age, sex, culture, religion, educational level and others related components. The prevalence of HBV infections among replacement and voluntary blood donors visiting General *in* North Eastern geo-Political Zone. In 2009 was estimated as 7.59% and 6.79% respectively. Both rates were high among blood donors who represent a significant part of the population within the zone. The probability of infection was found to be age and sex defendant. Young replacement blood donors, aged 20-29 years were 4 times as likely as older fellows (50-70 years) to be HBV victims. The reason for the gender imbalance, i.e. more males (6, 44) than females (18), cannot be directly inferred from this data; however, within the context of the study area, more men than women are usually called to take responsibilities in representing families. The males are also more proactive and independent in decision making and volunteering than females would have the opportunity for. This probably explains the huge difference in gender. Illiteracy among the people in the region as well as poor access to relevant health information/education may also be a contributory factor to the high prevalence of this disease. Some socio cultural practices like polygamy may also enhance transmission particularly when a spouse either happens to contract the HBV elsewhere or a carrier who is apparently normal over years. The relatively high prevalence of HBV infection among the youth could be the result of risky lifestyles consistent with studies attributing it to unprotected sex (Julius, (2009).

From this situation *in* North Eastern geo-Political Zone has affected with this factor and lead HBV to be come in high percentage. Hepatitis B virus infection is highly endemic in North Eastern geo-Political Zone, with transmission occurring in childhood and adulthood. The hepatitis B infant immunization program should be sustained and catch-up vaccination considered for older children. In unadjusted analysis, the prevalence of lifetime HBV was significantly associated with age, education, occupation, wealth, marital status, religion, ethnicity, residence (urban/rural), region of residence, number of lifetime sex partners, HSV-2 infection, history of blood transfusion, and contact with blood.

Methodology

The study was used a cross sectional, descriptive study seeking on Socio-Demographic Factors influencing prevalence of hepatitis B, which was carried out at *North* Eastern geo-Political Zone. Blood bank *in* North Eastern geo-Political Zone. Descriptive study employed both qualitative and quantitative approaches that involved data organization and summary according to the epidemiological variables; time, place and person. The population of North Eastern geo-Political Zone was around 205,876 as at 2006 census. The population was now about 329,221.Sample size based above total blood donors in northern eastern states blood bank data base, shows that from 2010-2015 have 133 blood voluntary donors. By using solve formula to estimate the study.

Calculated was given below.

$$n = \frac{N}{1+n\times(e)^2}$$

Where by N=Number of population for the study.

n= sample size

e^2 = The level of statistical significant

$$n=\frac{35070}{1+35070\times(0.05)^2} \quad n=\frac{35070}{1+35070\times0.0025} \quad n=\frac{35070}{88.6775}$$

133/1+133(0.05^2)
n= 280

This study involved all volunteer blood donors, who donated blood with ages varying from 18 years to 65years, and should have been screened for HBV test, attending at North Eastern geo-Political Zone. Blood bank was used as the study site since it was offer blood donation and screaming site, and captures the demographics, information sought including age, marital status and type of marriage, health back ground. Purposive, convenience and simple random sampling methods was used in sample study determination. Purposive sampling was used to consider the target population, which was fixed blood voluntary donors and above 18 years of age.

Results

The purpose of this chapter is to present the findings of the study, analyze the data collected and make interpretations including the testing of relevant hypothesis.

Socio-Demographic Factors of Respondents

Table 1: Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	180	60	60	60
	Female	100	40	40	40
	Total	280	100.0	100.0	

From the above table, 60% of respondents are male while 40% are female. This implies that there is a kind of gender balance in the composition of informants hence a more reliable data is expected to emerge.

Table 2: Age of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-29	28	10.0	10.0	10.0
	30-39	148	52.9	52.9	62.9
	40-49	64	22.9	22.9	85.7
	50-59	40	14.3	14.3	100.0
	Total	280	100.0	100.0	

Only 10% of the respondents are below the age of 30 years while 90% are 30 years and above. It implies that most of the respondents are adults and could be more relied on for more accurate data.

Table 3: Blood Group of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	114	40.7	40.7	40.7
	B	12	4.3	4.3	100.0
	O	154	55.0	55.0	95.7
	Total	280	100.0	100.0	

Majority of the respondents are in the groups A and O blood category with 40% in A and 55% in B. Only 4.4% belongs to the B blood group. This implies that very few respondents has the stronger blood category hence they could be more vulnerable to disease transmission.

Table 4: Marital Status of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	68	24.3	24.3	24.3
	Single	193	68.9	68.9	93.2
	Divorced	15	5.4	5.4	98.6
	Widowed	4	1.4	1.4	100.0
	Total	280	100.0	100.0	

Over 68% of the informants are single with on 24% married people. This implies that the level of responsibility of the respondents are a bit low hence could lead to further exposure compared to married people who are better careful and behave more maturely.

Table 5: Blood Donor Category of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First	44	15.7	15.7	15.7
	Repeat	104	37.1	37.1	52.9
	Regular	80	28.6	28.6	81.4
	Replacement	52	18.6	18.6	100.0
	Total	280	100.0	100.0	

Over 36% of the respondents are not employed at al while about 54% are in formal employment. Those who are self-employed are only 8% with 1.4% students. The implication of this is that majority of the informants are in self-employment which may limit their ability to earn flexible incomes. Those who are not employed are also more vulnerable to high level of poverty.

Table 6: Literacy Level of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	108	38.6	38.6	38.6
	PLE	155	55.4	55.4	93.9
	Certificate or Diploma	15	5.4	5.4	99.3
	Degree and above	2	.7	.7	100.0
	Total	280	100.0	100.0	

The above table suggests that majority of the respondents are illiterates with either no formal education (38.6%) or mere primary leaving certificates (55.4%). This could be a major factor limiting their awareness and understanding of the implication of the HBV disease and inhibiting their ability to create effective preventive measures.

Table 7: Place of Residence of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	120	42.9	42.9	42.9
	Sub-urban	160	57.1	57.1	100.0
	Total	280	100.0	100.0	

Almost all the respondents are non-urban residents. Rural dwellers constitute 43% while sub-urban dwellers constitute

57%. The implication of this is that respondents reside in locations that are more vulnerable to risks due to environmental and behavioral factors and lack of basic amenities.

Table 8: Income Level of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	116	41.4	41.4	41.4
	Less than 50,000 Naira monthly	152	54.3	54.3	95.7
	50,000 to 100,000 Naira monthly	12	4.3	4.3	100.0
	Total	280	100.0	100.0	

Most of the respondents either have no source of income (41%) or earn less than 50,000 Naira (54%). This implies that most almost all the respondents live in a high level of poverty and are more vulnerable to diseases and other problems.

Table 9: Do you allow Traditional Incision and Cuttings on Your Skin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	78	27.9	27.9	27.9
	No	202	72.1	72.1	100.0
	Total	280	100.0	100.0	

Only 28% of the respondents allow traditional incision and cuttings on their skin while 72% do not allow. This implies that respondents do not encourage this traditional practice and are not likely to be infected as such

Table 10: Do You Share Needles with Other People

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	97	34.6	34.6	35
	No	183	65.4	65.4	64
	Total	280	100.0	100.0	99

35% of the respondents confirm that they normally share needles and razor with other people while only 64% say no to this. This means majority of the respondents do share sharp objects with others and are therefore susceptible to the contraction on infectious diseases.

Table 11: Do You Share Tooth Brush with other People

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	91	32.5	32.5	32.5
	No	189	67.5	67.5	100.0
	Total	280	100.0	100.0	

Although majority of the respondents (67.5%) do not share tooth brush with others, a large percentage, and 32. %% do share tooth brush with other people. This may not be a major factor but it could also influence the transmission of HBV

Table 12: Do You Have Multiple Sex Partners?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	83	29.6	29.6	29
	No	197	70.4	70.4	71
	Total	280	100.0	100.0	

Only 29% of the respondents have multiple sex partners while 71% do not. Although majority of the informants do not have multiple sex partners, the percentage of respondents with multiple sex partners is large enough to conclude that having multiple sex partner could be a factor encouraging the spread of HBV.

Table 13: Have You Ever Been Exposed to Used Syringe or Razor?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	105	37.5	37.5	37.5
	No	175	62.5	62.5	100.0
	Total	280	100.0	100.0	

Only 38% of the respondents claimed to have been exposed to used syringe or razor while 62% have never been exposed. Although majority do not have the exposure, the number of those exposed are large enough that exposure to used syringe or razor could be a factor contributing to the spread of HBV.

Table 14: Do You Have Knowledge of all Preventive Strategies for HBV?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	164	58.6	58.6	58.6
	No	116	41.4	41.4	100.0
	Total	280	100.0	100.0	

About 59% of the respondents have knowledge of HBV prevention while only 21% lack the awareness. It could be concluded that there is adequate awareness for the preventive strategies. However, the number of those lacking awareness is large enough to conclude that lack of awareness could be a Contributing factor to the poor prevention of HBV.

Table 15: Hypothesis Testing Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Difference	
									Lower	Upper
Socio	Equal variances assumed	6.344	.012	-14.081	278	.000	-1.52500	.10830	-1.73820	-1.31180
	Equal variances not assumed			-14.546	277.066	.000	-1.52500	.10484	-1.73139	-1.31861

Table16: Group Statistics

	Gender of Respondents	N	Mean	Std. Deviation	Std. Error Mean
Socio-cultural and demographic factor	Male	120	3.9500	.77622	.07086
	Female	160	5.4750	.97742	.07727

The result of the t-test testing whether there is a significant difference in the average level of demographic factors between male and female respondents shows that mean for male of 3.95 and female 5.475 implying that female respondents have better behavior than their male counterparts since the response NO was assigned the higher value of (2). The difference is also significant with a p-value < 0.01.

Table 17: Group Statistics

	Gender of Respondents	N	Mean	Std. Deviation	Std. Error Mean
Individual Factor	Male	120	10.2750	1.30907	.11950
	Female	160	13.3813	2.91574	.23051

The result of the t-test testing whether there is a significant difference in the average level of individual factors between male and female respondents shows that mean for male of 10.275 and female 13.3813 implying that female respondents have better behavior than their male counterparts since the response NO was assigned the higher value of (2). The difference is also significant with a p-value < 0.01.

Conclusion

A very large proportion of the respondents indulge in unhealthy behavior such as allowing incision on their skin, sharing needle and tooth brush with others, giving care to jaundice patients and accident victims without understanding all medical precautions and lack of adequate health education which could reduce ability to prevent HBV.

Recommendations

The following recommendations are hereby made for the prevention and control of HBV prevalence:

- Health education should be intensifies so that people can engage in healthy behavior and lifestyle and avoid been infected with HBV
- Vaccination against HBV should also have a paramount consideration in the government budget so that people can have immunity against HBV.
- Government policies should be directed at preventing and control through various interventions and consultations especially at the grass root level
- Health workers should be well trained on medical precautions especially in handling medical wastes and on how to protect patients from infections
- Government should also fight poverty by empowering the citizen so that they can have means of livelihood and avoid engaging in illicit acts.
- People should also be self-conscious of the danger in certain attitudes such tattooing, sharing of sharp objects, having multiple sex partners and alcoholism

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