



Knowledge of Hepatitis B Virus Vaccination among Adults Seeking Healthcare in Hospitals in Oyigbo Local Government Area of Rivers State, Nigeria

Nwankwo, G. A.¹, Agu, B. N.¹, Benjamin, S. E.¹, Gbaduo, C. C.¹, Asuzu, N. C.¹, Eriteta, E. O., Ugochukwu, F. B.¹, Aluwuo, N. J.¹, Okafor, F. O.¹ & Okonko, I. O.²

¹Department of Public Health, Madonna University Nigeria, Elele Rivers State, Nigeria

²Virus & Genomics Research Unit, Department of Microbiology, University of Port Harcourt, Port Harcourt, Nigeria, ORCID iD: 0000-0002-3053-253X, E-mail address: iheanyi.okonko@uniport.edu.ng; Tel: +2347069697309

Correspondence Author: Dr. Nwankwo, G.A., Department of Public Health, Madonna University Nigeria, Elele Rivers State, Nigeria. Email: nwankwo@sciencepub.net

Abstract: The goal of this research was to determine the level of knowledge that adult patients receiving treatment at hospitals in Oyigbo L.G.A., Rivers State, have about the hepatitis B vaccine. A descriptive research design was used for this investigation. The research sample consisted of two hundred adults. A multistage sampling strategy was used for this inquiry. The researcher's questionnaire was the main instrument used to gather data. The descriptive statistics of frequency and percentage were utilized to describe and answer the study questions. The null hypothesis was tested using chi-square inferential statistics. Based on the results, Oyigbo 76 (37.8%) had a high degree of awareness regarding the hepatitis B vaccination; this knowledge was shared by both males (63.8%) and females (71.2%) in Oyigbo Rivers State. On the other hand, women knew more than men. Based on gender, the disparity in the amount of knowledge of the hepatitis B virus vaccination was substantial ($P < 0.00001$). The study found that the L.G.A. possessed a keen sense of awareness of hepatitis B virus vaccination, with men having a higher degree of knowledge than women. Thus, it was strongly advised that workshops, awareness campaigns, and other health promotion initiatives aimed at raising female residents of Oyigbo Local Government Area in Rivers State's degree of expertise in the hepatitis B virus vaccination be encouraged.

[Nwankwo, G. A., Agu, B. N., Benjamin, S. E., Gbaduo, C. C., Asuzu, N. C., Eriteta, E. O., Ugochukwu, F. B., Aluwuo, N. J., Okafor, F. O. & Okonko, I. O. **Knowledge of Hepatitis B Virus Vaccination among Adults Seeking Healthcare in Hospitals in Oyigbo Local Government Area of Rivers State, Nigeria.** *Biomedicine and Nursing*. *Biomedicine and Nursing* 2024;10(1):1-9]. ISSN 2379-8211 (print); ISSN 2379-8203 (online). <http://www.nbmedicine.org>. 01. doi:10.7537/marsbnj100124.01.

Keywords: Hepatitis B, Vaccination, Knowledge, Oyigbo LGA

1. Introduction

Understanding the injection is crucial for the Hepatitis B vaccination to take effect. The hepatitis B virus (HBV) is the cause of hepatitis B, a potentially fatal liver disease. It is a danger to world health. It can lead to recurrent infections in addition to increasing the risk of liver cancer and cirrhosis-related death. There is a vaccination that is providing 98% to 100% protection against hepatitis B, while remaining safe and efficient. Thwarting Hep-B infection helps avoid liver cancer and other related repercussions, such as chronic illness (WHO, 2022).

With 116 million and 81 million chronically infected individuals, respectively, the WHO Western Pacific and WHO African regions have the highest burden of hepatitis B infection. The WHO reports that the condition affects 60 million people in the Eastern Mediterranean Region, 18 million in Southeast Asia,

14 million in Europe, and 5 million in the Americas (WHO, 2022).

Around 257 million individuals, or 3.5% of the universal population, are chronic carriers of HBV, meaning they carry the virus in their liver, and over 2 billion people have serologic evidence of past or current HBV infection (Singhal et al., 2019). In Africa, there are reportedly 50 million chronic HBV carriers, according to Singhal et al. (2019). With a 25% mortality rate, over 2 million of these carriers pass away from cirrhosis or primary liver cell cancer each year as a result of the virus. Carrier rates in Sub-Saharan Africa vary from 9% to 20% (Kiire, 2013). 18 million Nigerians are thought to have a chronic HBV infection (Siresena et al., 2012; Okonkwo et al., 2017). Nigeria, like most of Africa, is hyper-endemic for hepatitis B, with a prevalence of 12.2% in the general

population, according to a National Survey of Hepatitis B (Opaleye et al., 2016).

Over 60 million people in Africa are thought to be infected with the hepatitis B virus (HBV), according to estimates from the World Health Organization (WHO) accounting for 23% of all people worldwide who have the disease. Hepatitis B is answerable for a significant portion of mortality and morbidity rates from hepatitis: more than 90% of infected people are ignorant of their illness and do not seek treatment as a result (Spearman et al., 2017). Hepatitis is currently the seventh largest root of death worldwide, with an approximate annual death toll of 1.3 million (Adekanle et al., 2018). The frequency of HBV infection is increasing even though there have been effective immunizations against the disease since the 1980s (Eckersberger et al., 2014; Färdig & Lundberg, 2014; WHO, 2017).

Investments in primary prevention have been undertaken to expand the reach of universal immunization programs during the last 30 years, with excellent outcomes. Previously, the HBV vaccine was restricted to individuals who had a high risk of contracting the illness, but times have changed. All infants in 179 countries throughout the world receive vaccinations against the virus as part of their regular immunization regimen (Marinho et al., 2015; Clement et al., 2012). According to Marinho et al. (2015), immunization is a reliable and effective way to shield people against developing acute or chronic hepatitis B. It has proven to offer an effective defence. 400 individuals die from Hepatitis B each year as a result of a lack of knowledge and particular behaviours surrounding the condition. Because of its high occurrence rate, it must be prevented worldwide, especially in underdeveloped nations where there is a low level of awareness of the illness (Abdulsalam et al, 2016; Buisson et al., 2014).

Moreover, the disease is 50–100 times more contagious than HIV/AIDS, but Nigerian politicians fund and publicize it less, which contributes to the disease's continued prevalence in the country (Aniaku et al., 2019). Hepatitis B can still be prevented before it causes and spreads since it is still seen as a global public health concern and has a high fatality rate. This can be accomplished through educating people about the illness and influencing their opinions about vaccinations (Singhal et al., 2019). This highlights how important it is for people to have enough knowledge about the disease to influence how they feel about it and, consequently, how they feel about immunizations. Adeyemi et al. (2013) state that the hep-B vaccine is one of the safest immunizations.

Human HBV is not caused by immunization (CDC, 2015). Since it can prevent hepatitis B, a key risk factor for liver cancer, it is the first "anti-cancer vaccine." According to the Hepatitis B Foundation (2015), HBV is the cause of more than 80% of cases of liver cancer.

As to the findings of Binneyuy et al. (2019), immunization is the primary means of preventing the hepatitis B virus (HBV), offering 90–100% protection following vaccination. Infection with HBV is a major public health issue. Following the introduction of immunization, the disease has somewhat lessened. However, the majority of people are ignorant of the hepatitis B vaccination, which is one of the reasons the hepatitis B virus continues to circulate in society. A few factors that are believed to be implicated in this are poverty, misinformation, attitude, the cost of the adult vaccine, and resistance to having an HBV vaccination. Therefore, this study aimed to ascertain the level of knowledge regarding the hepatitis B virus vaccination among those seeking medical attention in Oyigbo L.G.A. facilities in Rivers State, Nigeria.

To what extent do adults seeking care in certain hospitals in Oyigbo L.G.A., Rivers State, know about the hepatitis B virus vaccine? is the research question which will direct the investigation. The following were the study's null hypotheses, which will be evaluated at the 0.05 level of significance. H_{01} : There is no appreciable difference in the level of knowledge about the hepatitis B virus vaccine among patients seeking care in specific hospitals in Oyigbo L.G.A., Rivers State, based on gender. H_{02} : There is no statistically significant difference in the level of knowledge about the hepatitis B virus vaccine among patients seeking care in specific hospitals in Oyigbo L.G.A., Rivers State, based on age.

2. Methods

This research employed a cross-sectional descriptive design and was conducted in the suburban area of Oyigbo LGA in Rivers State. The population of the study consisted of adults seeking care in an estimated 42 Oyigbo hospitals (Walk-Through Survey, 2022). The study was conducted on consenting subjects only, and the sample consisted of 200 individuals. The Oyigbo hospitals were grouped into six clusters of seven institutions using a multi-stage sampling process. One hospital was randomly selected from each cluster using simple random without replacement; the respondents were specifically recruited from the selected hospitals to administer the instrument. The researcher meticulously created a self-structured questionnaire for the investigation. The researcher gave it to the respondents to get

information, with the assistance of a few medical professionals. The survey gathered data on the demographics and vaccination knowledge of eligible persons (18 years of age and older) from the chosen hospitals in Oyigbo. There were two sections to the questionnaire, totalling 11 questions. Section A asked three questions on sociodemographic traits, while Section B asked eight questions about knowledge of the hepatitis B virus vaccination, with pre-selected answers. The right response is true. Reliability testing was conducted utilizing test-and-retest methods on twenty persons in a health centre that was not involved in the study. Using Spearman's rank order correlation coefficient, the collected data were submitted to reliability coefficient analysis. For the investigation, a reliability coefficient of 0.8 was found to be sufficient and stable. While the chi-square inferential statistic was utilized to test the hypotheses at the 0.05 level of

significance, descriptive statistics such as frequency and percentage were employed to address research concerns. Less than 30% indicates a poor degree of knowledge, 30–59% indicates a medium level of knowledge, 60–89% indicates a high level of knowledge, and more than 90% indicates a very high level of expertise.

3. Results

As can be seen in Table 1, 76 (38%) and 124 (62%) of the study's participants were female. Among the respondents, 57 (28.5%) were under 25, 69 (34.5%) were between 25 and 44, and 74 (37%), were over 45. 12 respondents (6%), 36 respondents (18%), 91 respondents (45.5%), and 61 respondents (30.5%) reported having never attended college.

Table 1: Socio-demographic characteristics of respondents (n=200)

Variable	Frequency	Percentage (%)
Gender		
Male	124	62.0
Female	76	38.0
Total	200	100.0
Age (years)		
Less than 25	57	28.5
25-44	69	34.5
45 and above	74	37.0
Total	200	100
Level of education		
No formal education	12	6.0
Primary	36	18.0
Secondary	91	45.5
Tertiary	61	30.5
Total	200	100.0

Research Question 1: How much do adults in Oyibo Rivers State's hospitals know about the hepatitis B virus vaccination? You may find the data addressing this study topic in Table 2. Table 2 demonstrates that,

overall, 76 (37.8%) respondents replied no to the question items, while 124 (62.2%) respondents answered yes. This suggests that Oyigbo people have a good level of vaccine knowledge on hepatitis B.

Table 2: The frequency of the level of knowledge of hepatitis B virus vaccination among adults seeking care in Oyigbo Rivers State

S/N	Items	Knowledge of Hepatitis B (n=200)			
		True		False	
		F	%	F	%
1	Hepatitis-B is lethal	134	67.0	66	33.0
2	Vaccination protects against Hepatitis-B infection	121	60.5	79	39.5
3	Vaccination protects sexual partner from Hepatitis-B infection	163	81.5	37	18.5
4	Hepatitis-B vaccination causes unpleasant side effects	112	56.0	88	44.0
5	Everyone needs Hepatitis-B vaccination	97	48.5	103	51.1
6	The cost of Hepatitis B vaccination is unaffordable for males and females	107	53.5	93	46.5
7	if everyone is vaccinated the spread of Hepatitis B will reduce	129	64.5	71	35.5
8	Hepatitis B is contagious	132	66.0	68	34.0
	Average	124	62.2	76	37.8

Key: Less than 30%: low level of knowledge; 30-59%: average level of knowledge; 60 -89%: high level of knowledge; above 90%: very high level of knowledge.

Research Question 2: Based on gender, how much do adults in Oyigbo Rivers State's hospitals know about the hepatitis B virus vaccination? You may find the data addressing this study topic in Table 3. Out of 124 male respondents, Table 3 reveals that 79 (63.8%) answered "yes" and 45 (36.2%) answered "no" to the

question items. 76 female respondents answered the questions with 54 (71.2%) saying "yes" and 22 (28.8%) saying "no." This suggests that in Oyigbo Rivers State, both sexes were highly knowledgeable about the hepatitis B vaccination, however, women knew significantly more than men.

Table 3: The frequency of the level of knowledge of hepatitis B virus vaccination among adults seeking care in Oyigbo Rivers State based on gender

S/N	Items	Males(n=124)		Females(n=76)	
		True F/%	False F/%	True F/%	False F/%
1	Hepatitis-B is lethal	83(66.9)	41(33.1)	46(60.5)	30(39.5)
2	Vaccination protects against Hepatitis-B infection	64(51.5)	60(48.4)	56(73.7)	20(26.3)
3	Vaccination protects sexual partner from Hepatitis-B infection	71(57.3)	53(42.7)	49(64.5)	27(35.5)
4	Hepatitis-B vaccination causes unpleasant side effects	88(71.0)	36(29.0)	60(78.9)	16(21.1)
5	Everyone needs Hepatitis-B vaccination	97(78.2)	27(21.8)	62(81.6)	14(18.6)
6	The cost of Hepatitis B vaccination is unaffordable for males and females	91(73.4)	33(26.6)	58(76.3)	18(23.7)
7	if everyone is vaccinated the spread of Hepatitis B will reduce	69(55.6)	55(44.4)	48(63.2)	28(36.8)
8	Hepatitis B is contagious	70(56.5)	54(43.5)	54(71.1)	22(28.9)
	Average	79(63.8)	45(36.2)	54(71.2)	22(28.8)

Research Question 3: Based on age, how much do adults in Oyigbo Rivers State who are seeking medical attention in hospitals know about the hepatitis B virus vaccination? You may find the data addressing this study topic in Table 4.

Table 4 demonstrates that of the 57 respondents who were under 25, 37 (64.9%) replied "yes" and 20

(35.1%) answered "no" to the questions. Additionally, it reveals that of the 69 respondents, 50 (72.5%) answered "yes," and 19 (27.5%) answered "no," to the question items. The respondents ranged in age from 25 to 44. 53 (71.6%) of the 74 respondents who were older than 44 said "yes," whereas 21 (28.4%) said "no" in response to the questions. This suggests that persons seeking care in Oyigbo hospitals were well

knowledgeable about hepatitis B virus immunization across all age categories.

Table 4: The frequency of the level of knowledge of hepatitis B virus vaccination among adults seeking care in Oyigbo Rivers State based on age

S/N	Items	<25 years(n=57)		25-44years (n=69)		>44years (n=74)	
		True F/%	False F/%	True F/%	False F/%	True F/%	False F/%
1	Hepatitis-B is lethal	30(62.6)	27(47.4)	38(55.1)	31(44.9)	35(47.3)	9(52.7)
2	Vaccination protects against Hepatitis-B infection	39(68.4)	18(31.6)	54(78.3)	15(21.7)	63(85.1)	11(14.9)
3	Vaccination protects sexual partner from Hepatitis-B infection	45(78.9)	12(21.1)	56(81.2)	13(18.8)	70(95.6)	4(5.6)
4	Hepatitis-B vaccination causes unpleasant side effects	29(50.9)	28(49.1)	36(52.2)	33(47.8)	40(54.1)	34(45.9)
5	Everyone needs Hepatitis-B vaccination	26(45.6)	31(54.4)	42(60.9)	27(39.1)	42(56.8)	32(43.2)
6	The cost of Hepatitis B vaccination is unaffordable for males and females	43(75.4)	14(24.6)	56(81.2)	13(18.8)	58(78.4)	16(21.6)
7	if everyone is vaccinated the spread of Hepatitis B will reduce	46(82.7)	11(19.3)	59(85.5)	10(14.5)	65(87.8)	9(12.2)
8	Hepatitis B is contagious	36(63.2)	21(36.8)	49(71.0)	20(29.0)	57(77.0)	17(23.0)
	Average	37(64.9)	20(35.1)	50(72.5)	19(27.5)	53(71.6)	21(28.4)

Research Question 3: Based on educational attainment, how much do adults in Oyigbo Rivers State's hospitals know about the hepatitis B virus vaccination? You may find the data addressing this study topic in Table 5.

Table 5 demonstrates that, of the 12 respondents who did not have a formal education, 6 (or 50%) said "yes" in response to the questions. Of the thirty-six individuals with only an elementary education, twenty-two (60.1%) said "yes," and fourteen (30.9%)

said "no." Of the 91 participants with secondary education, 65 (or 70.9%) said "yes," while 26 (or 29.1%) said "no." Of the 61 participants with postsecondary education, 50 (81.8%) said "yes," and 11 (18.2%) said "no." This suggests that the respondents' knowledge of the hepatitis B vaccination in Oyigbo, Rivers State, was average for those without formal education, average for those with elementary education, and high for those with secondary and post-secondary education.

If the P-value is less than 0.05 (significant), reject the null hypothesis; if the P-value is greater than 0.05 (insignificant), accept the null hypothesis.

Table 5: The frequency of the level of knowledge of hepatitis B virus vaccination among adults seeking care in Oyiabo Rivers State based on level of education

S/N	Items	No formal education (n=12)		Primary(n=36)		Secondary (n=91)		Tertiary (n=61)	
		True F/%	False F/%	True F/%	False F/ %	True F/%	False F/ %	True F/%	False F/ %
1	Hepatitis-B is lethal	6(50.0)	6(50.0)	16(44.4)	20(55.6)	52(57.1)	39(42.9)	51(83.6)	10(16.4)
2	Vaccination protects against Hepatitis-B infection	7(58.3)	5(41.7)	21(58.3)	15(41.7)	71(78.0)	20(22.0)	53(86.9)	8(13.1)
3	Vaccination protects sexual partner from Hepatitis-B infection	4(33.3)	8(66.7)	23(63.9)	13(36.1)	81(89.0)	10(11.0)	52(85.2)	9(14.8)
4	Hepatitis-B vaccination causes unpleasant side effects	5(41.7)	7(58.3)	19(52.8)	17(47.2)	70(76.9)	21(23.1)	49(80.3)	12(19.7)
5	Everyone needs Hepatitis-B vaccination	3(25.0)	9(75.0)	17(47.2)	19(52.8)	46(50.5)	45(49.5)	42(68.9)	19(31.1)
6	The cost of Hepatitis B vaccination is unaffordable for males and females	10(83.3)	2(16.7)	30(83.3)	6(16.7)	69(75.8)	22(24.2)	33(54.1)	28(45.9)
7	if everyone is vaccinated the spread of Hepatitis B will reduce	6(50.0)	6(50.0)	20(55.6)	16(44.4)	72(79.1)	19(20.9)	59(96.7)	2(3.3)
8	Hepatitis B contagious	8(66.7)	4(33.3)	27(75.0)	9(25.0)	55(60.4)	36(39.6)	60(98.4)	1(1.6)
	Average	6(50.0)	6(50.0)	22(59.1)	14(40.9)	65(70.9)	26(29.1)	50(81.8)	11(18.2)

As can be seen in Table 6, the computed chi-square was 267.1 with a degree of freedom of 2 and a significance level of $p=0.05$, yielding $P<0.00001$. This suggests that there existed a noteworthy variation in the degree of awareness regarding hepatitis B

vaccination among adult patients seeking medical attention in Oyiabo Rivers State institutions according to their age. As a result, in the examined site, different age groups have varying levels of knowledge regarding the hepatitis B vaccination.

Table 6: Chi-square of no significant difference in the level of knowledge of hepatitis B virus vaccination among adults seeking care in Oyiabo Rivers State based on age

Variable	N	TRUE O(E)	FALSE O(E)	Cal χ^2	df	P-value
< 25 years	57	37 (10.5)	20(5.7)	267.1	2	<0.00001
25–44 years	69	50 (17.3)	19(6.6)			
> 44 years	74	53(19.6)	21(7.8)			

The computed chi-square, with a degree of freedom of 1, a $p=0.05$ threshold of significance, and $P<0.00001$,

is displayed in Table 7. This suggests that there was a notable gender-based disparity in the degree of

hepatitis B vaccine awareness among adults seeking care in Oyigbo Rivers State hospitals. As a result,

males in the investigated locality know less about the hepatitis B vaccination than females do (Table 7).

Table 7: Chi-square of no significant difference in the level of knowledge of hepatitis B virus vaccination among adults seeking care in Oyigbo Rivers State based on gender

Variable	N	TRUE O(E)	FALSE O(E)	Cal χ^2	df	P-value
Males	124	79(49.0)	45(27.9)	105.6	1	< 0.00001
Females	76	54(20.5)	22(8.4)			

4. Discussion

Table 1 reveals that 76 (38%) ladies and 124 (62%) males took part in the study. Among the respondents, 57 (28.5%) were under 25, 69 (34.5%) were between 25 and 44, and 74 (37%), were over 45. 12 respondents (6%), 36 respondents (18%), 91 respondents (45.5%), and 61 respondents (30.5%) reported having never attended college.

Table 2 shows the adults in Oyigbo L.G.A. Rivers State's level of awareness regarding the hepatitis B vaccination. The information demonstrates that Oyigbo people had a high degree of vaccine knowledge on hepatitis B. This is in line with the findings of Giri and Phalke (2014), who discovered that medical interns at Rural Medical College in Loni, Maharashtra, India, had a high degree of understanding of the hepatitis B vaccination. According to Abiola et al. (2013), health personnel at the Lagos State Accident and Emergency Center likewise possessed a high degree of understanding in their study on knowledge, attitude, and practice of hepatitis B vaccine.

Table 3 shows that high levels of knowledge were had by both males and females. In Oyigbo Rivers State, however, women are more knowledgeable than men about the hepatitis B vaccine. This could be the outcome of raising awareness in their prenatal clinics. This is consistent with the findings of Noreen et al.'s (2014) cross-sectional study from a rural Punjabi district in Pakistan on women's understanding of the hepatitis B vaccine, which revealed that women had a high degree of knowledge of the shot. Taking into consideration the data in Table 7, which displays the result of the chi-square of no significant difference based on age, it was found that there was a significant difference in the level of knowledge of hepatitis B vaccination among adults seeking care in hospitals in Oyigbo Rivers State based on gender. This shows that in the examined locality, males and females had different levels of knowledge regarding the hepatitis B vaccination. This finding runs counter to that of Shrestha et al. (2020), who found a very small

difference between the knowledge of the hepatitis B virus vaccination among males and females in Nepal.

Table 4 demonstrates that among Oyigbo hospital patients seeking care, respondents of all age groups had a good level of knowledge of hepatitis B virus immunization. This result is consistent with that of Shrestha et al. (2020), who discovered that older pupils knew more about the hepatitis B vaccine than younger ones. The results of a chi-square analysis show that there was a significant difference in the level of knowledge about hepatitis B vaccination among adults seeking care in hospitals in Oyigbo Rivers State based on age. There was also a significant difference in the level of knowledge about gender and the same thematic area regarding hepatitis B vaccination. Shrestha et al. (2020) discovered, however, that the level of awareness of hepatitis B vaccination in the population they studied was not significantly influenced by age.

Table 5 demonstrates that respondents with no formal education had average knowledge of the hepatitis B vaccination in Oyigbo, Rivers State; respondents with elementary education had average knowledge; and respondents with secondary and higher education had high levels of knowledge. This finding is consistent with that of Noreen et al. (2014), who discovered that participants in the rural districts with tertiary education levels had a better degree of knowledge of hepatitis B.

5. Conclusion

In conclusion, there was a significant degree of awareness regarding hepatitis B virus immunization among the individuals applying to hospitals in Oyigbo Rivers State. Both genders of persons seeking medical attention at Oyigbo Rivers State hospitals demonstrated a high level of knowledge of the hepatitis B virus vaccination. Nonetheless, women (71.2%) knew more about the hepatitis B virus immunization than men (63.8%). Among individuals receiving care in Oyigbo hospitals, all age groups had a high degree of knowledge of the hepatitis B virus vaccination: those under 25 years old (64.9%), those between 25 and 44 years old (72.5%), and those over

44 years old (71.6%). The hepatitis B vaccination was not well known by adult patients seeking care in Oyigbo LGA, Rivers State; the least knowledgeable group was the one with no formal education (50.0%), followed by those with elementary education (59.1%), secondary school (70.9%), and higher education (81.8%). Age significantly differed in patients' awareness of the hepatitis B virus immunization among those receiving care in Oyigbo hospitals ($P<.00001$). The level of awareness of the hepatitis B virus vaccine was considerably different ($P<.00001$) among adults seeking care in Oyigbo hospitals. It is advised that the State Ministry of Health host lectures and workshops to ensure that everyone is highly informed about the hepatitis B vaccination. Laws requiring the hepatitis B vaccination for all people and booster injections for individuals who have already received the jab. Non-governmental organizations should begin making attempts to attract more attention.

References

- [1]. Abdulsalami, N., Tekena, O. H., Sergei O. V, Germano, M. R., Bernard, B. A. & Vitaly, A. A. (2016). Prevalence of hepatitis B infection markers in representative areas of Nigeria. *International Journal of Epidemiology*, 15(2), 274.
- [2]. Abiola, A., Akodu, B. & Omoyeni, O. (2013). Knowledge, attitude, and practice of hepatitis B vaccination among health workers at the Lagos State accident and emergency centre, TollGate, Alausa, Lagos State. *West African Journal of Medicine*, 32(4), 257-262.
- [3]. Adekanle, O., Ndububa, D.A., Ayodeji, O.O., Paul-Odo, B. & Folorunso, T.A. (2015). Sexual transmission of the hepatitis B virus among blood donors in a tertiary hospital in Nigeria, *Singapore Medical Journal*, (51) 12, 944-947.
- [4]. Adeyemi, A.B, Enabor O.O, Ugwu I.A, Bello F.A. & Olayemi, O.O. (2013). Knowledge of hepatitis B virus infection, access to screening and vaccination among pregnant women in Ibadan, Nigeria. *Journal of Obstetrics and Gynaecology*, 33, 155-9.
- [5]. Aniaku, J. K., Edem, K.A & Adam, F. (2019). Assessment of knowledge, attitude and vaccination status of hepatitis B among nursing training students in Ho, Ghana. *Annals of Global Health*, 85(1)18, 1-9.
- [6]. Atiba, B.P., Ajao, K.O., Babalola, R.N., Awosusi, A.E., Ayeni, O. O, & Ijadunola, K. T. (2018). Hepatitis B virus infection and its modes of prevention among clinical students of Obafemi Awolowo University (OAU), Ile-Ife, Nigeria. *African Journal of Medical Science*, 43, 31-37.
- [7]. Berinyuy, B.E, Alawode, R.A., Mohammed, A.B., Babalola, B.S., Mustapha, A., Oshevire, R.M., Okunlola, M.B. & Lawal, A. (2019). Prevalence of Hepatitis B Virus in Nigeria: Review Update. *Annals of Public Health & Epidemiology*, 1(1), 21.
- [8]. Buisson, Y., Latthaphasavang, V., Khampanisong, P., Pathoumthong, K., Souvong, V. & Quet, F. (2014). Vaccination status, knowledge and awareness towards hepatitis B among students of health professions in Vientiane, Lao PDR. *Vaccine*, 32(39), 4993-4999.
- [9]. Centre for Disease Control and Prevention. (2015). *Viral Hepatitis - Hepatitis B information*.
- [10]. Clement, C.J., Kane, M., Hu D. J. & Kim-Farley R. (2012). Hepatitis B vaccine joins fight against Pandemic disease. *World Health Forum*, 11, 165 - 8.
- [11]. Eckersberger, E., Jarrett, C., Larson, H., Paterson, P., & Smith, D. (2014). *Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: a systematic review of published literature, 2007-2012*. *Vaccine*, 32(19), 2150-2159.
- [12]. Färdig, M. & Lundberg, M. (2014). High School Students' knowledge of and attitudes to HPV and the HPV vaccine. Final thesis in nursing science, bachelor of science in nursing, Uppsala University, Medical and Pharmaceutical Sciences, Faculty of Medicine, Department of Public Health and Caring Science.
- [13]. Giri, P.A. & Phalke, D.B. (2014). Knowledge and vaccination status of hepatitis B amongst medical interns of Rural Medical College, Loni, Maharashtra, India. *South East Asia Journal of Public Health*, 3(2), 19-22.
- [14]. Hamborsky, J., Kroger, A., Wolfe, S.E. (2015). Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. Vol. 512. Centers for Disease Control and Prevention.
- [15]. Hepatitis B Foundation. (2015). *Hepatitis B and Primary Liver Cancer*. Hepatitis B Foundation.
- [16]. Kiire, C.F. (1996). *The epidemiology and prophylaxis of hepatitis B in sub-Saharan Africa: a view from tropical and subtropical Africa*. *BMJ*, 38(2), 23.

- [17]. Kiire C. F. (1993). The epidemiology and control of hepatitis B in Sub-Saharan Africa, *Prog Med Virology*, 40: 143-156. <http://www.nbmedicine.org/room/fact-sheets/detail/hepatitis-b> Accessed 22/10/2022
- [18]. Marinho, R., Meireles, L. & van Damme, P., (2015). Three decades of hepatitis B control with vaccination. *World Journal of Hepatology*, 7(18), 2127–2132. 1/23/2024
- [19]. Mesfin, Y.M. & Kibret, K.T. (2013). Assessment of knowledge and practice towards hepatitis B among medical and health science students in Haramaya University, Ethiopia. *PLoS One*. 8(11): e79642.
- [20]. Noreen, N., Kumar, R. & Shaikh, B. (2014). Knowledge about hepatitis B vaccination among women of childbearing age: a cross-sectional study from a rural district of Punjab, Pakistan. *East Mediterranean Health Journal*, 21(2), 129-133.
- [21]. Okonkwo, U.C, Ngim, O.E, Osim, H, Inyama, M.A. Esu, M. K.& Ndoma-Egba, R, (2017). Knowledge of hepatitis B virus infection among traders. *Nigeria Journal of Clinical Practice*, 20,415-20
- [22]. Olayinka, A.T., Oyemakinde, A., Balogun, M.S., Ajudua, A., Nguku, P.&Aderinola, M. (2016). Seroprevalence of hepatitis B infection in Nigeria: a national survey. *American Journal of Tropical Medicine and Hygiene*, 95(4):902–7.
- [23]. [Raofi, A., Hatefnia, E., Kazemnejad, A.& Alavian, S.M. \(2016\). Health beliefs in hepatitis B vaccination among pre-marriage women. *Biomedical Research*, 27\(1\), 116-122.](#)
- [24]. Shrestha, D.B., Khadka, M., Subedi, P., Pokharel, S&Thapa, B.B. (2020). Hepatitis B vaccination status and knowledge, attitude, and practice regarding Hepatitis B among preclinical medical students of a medical college in Nepal. *PLoS ONE*, 15(11), page 1-11. <https://doi.org/10.1371/journal.pone.0242658>
- [25]. Singhal, V, Bora, D & Singh S., (2019). Hepatitis B in health care workers: Indian scenario. *Journal of Laboratory Physicians*, 1(2), 41.
- [26]. Spearman, C.W., Afihene, M., Ally, R. (2017). Hepatitis B in sub-Saharan Africa: Strategies to achieve the 2030 elimination targets. *Lancet Gastroenterol Hepatology*, 2(12), 900–909.
- [27]. WHO (2018) *Hepatitis B Vaccines? Weekly Epidemiological Record*. Geneva: WHO.
- [28]. World Health Organization (2015). *Hepatitis B*. World Health Organization.
- [29]. World Health Organization (2022). Hepatitis B fact sheet. <https://www.who.int/news->