



# UPTAKE AND COMPLETION RATES OF HEPATITIS B VACCINATION AMONG HEALTH CARE WORKERS AT A REFERRAL HOSPITAL IN UYO, AKWA IBOM STATE

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## ABSTRACT

Health care workers are four times more likely to contract hepatitis B infection. Thus, the hepatitis B vaccination is recommended as a preventive measure to protect health workers. This study determined the uptake and completion of hepatitis B vaccination among health workers and the factors associated with vaccination uptake and completion in Uyo, Akwa Ibom State, Nigeria. The study was a descriptive, cross-sectional design, carried out in 2021 among all cadres of health workers at the only tertiary/referral hospital in Uyo, the capital of Akwa Ibom State. A pretested, semi-structured, self-administered questionnaire was completed by health workers that consented on information relating to socio-demographic data, vaccination history, knowledge of hepatitis B vaccine and infection, and risk perception of hepatitis B infection. These were analyzed in SPSS version 20 as means and proportions with 95% Confidence Intervals. Chi-square test for Independence was used to examine association between variables at a P-value set at 0.05. Of the 281 study participants, females were 158 (56.2%) and 123 (43.8%), males; mean age was 37.4±8.5 years. Less than half, 132 (47.0%) had received at least one dose of hepatitis B vaccine. Of the 129 that had ever been vaccinated, 31(24%) had fully been vaccinated (completed required three doses). Years of practice ( $P=0.011$ ), education ( $P<0.01$ ), professional role ( $P<0.01$  and type of staff ( $P<0.01$ ) were associated with uptake of vaccination. For completion of vaccination, years of practice ( $P=0.042$ ) and professional role ( $P<0.01$ ) The study found a low uptake of hepatitis B vaccination, and even lower complete vaccination rates among the health care workers in a tertiary hospital in Uyo. Years of practice and type/professional role of staff were found to influence uptake and completion of vaccination. Given its importance hepatitis B vaccination is advocated to be included as part of the orientation exercise and periodic examination for hospital staff.

**KEYWORDS:** Hepatitis B, Hepatitis B Vaccination, Uptake, Completion Rate, Health Care Workers, Akwa Ibom State Nigeria

## INTRODUCTION

Around two billion people are estimated to be living with hepatitis B infection globally <sup>(1)</sup>. This infection is caused by the Hepatitis B virus (HBV), which affects the liver causing liver cirrhosis and hepatocellular carcinoma in chronically infected persons <sup>(2)</sup>. The WHO has characterized the universal burden of hepatitis B into three categories: high, middle, and low endemicity; highly endemic zones such as North America, Asia, and Sub-Saharan Africa having prevalence above 8% <sup>(3)</sup>.

Hepatitis B infection is a serious occupational concern for health care workers (HCWs) who work with patients and/or infectious materials such as body fluids, sperm, and vaginal secretions, contaminated medical supplies and equipment, and contaminated surfaces <sup>(4)</sup>. To safeguard against infections, the World Health Organization (WHO) recommends that high-

risk populations, such as HCWs, be targeted for routine vaccination against vaccine-preventable diseases such as hepatitis B <sup>(5)</sup>. Despite evidence that HBV infection can be prevented by vaccination, and the vaccine been produced for this purpose, there are vast disparities in hepatitis B vaccination uptake around the world, including among healthcare personnel <sup>(6)</sup>. Nigerian healthcare workers are particularly vulnerable because the country is an endemic area with a 15%–37% HBV carrier rate <sup>(7)</sup>. In health-care settings, HBV is most commonly transmitted by needle prick injuries and a lack of compliance to universal precautions, thus reiterating the importance of vaccination <sup>(8)</sup>. The vaccination schedule involves a 3-dose timeline vaccination which begins with receiving the primary dose at month 0. Taking only this initial dose protects the individual up to 30-50%. The second dose is scheduled for a month following the first dosage, and



taking this additional dose protects against HBV in adults as high as 75%. After 6 months, the concluding dose is given, which provides 90% protection to the individual <sup>(9)</sup>. In developing countries, vaccination uptake is as low as between 18-39% compared to high vaccination rates throughout developed countries where vaccination among health workers is as high as 67-79% <sup>(10)</sup>. In Nigeria, however, research has consistently indicated poor percentages of Hepatitis B immunization among healthcare personnel with several challenges accounting for the vaccination uptake in Nigeria <sup>(11)</sup>. This study aimed to determine the rate of uptake and completion of hepatitis B vaccination among health care workers, and also identify factors associated with uptake and completion of hepatitis B vaccination.

### METHODOLOGY

This descriptive, cross-sectional study was carried out at the University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, Nigeria. Three hundred and nine (309) participants were selected through a multistage sampling method between June and July 2021. The study population included doctors, pharmacists, medical laboratory scientists, health records officers, nurses, physiotherapists, administrative staff, radiographers, environmental health personnel, community

health officers, cleaners, and ward attendants. A semi-structured, self-administered questionnaire comprising sections on sociodemographic data, history of vaccination, reasons for vaccination/non-vaccination, knowledge of hepatitis B, and risk perception of health workers, was distributed among the participants.

The questionnaire was pre-tested in different hospital among 40 health care workers. A reliability test yielded Cronbach's alpha coefficient of 0.94, while validity was assured at an item-total correlation of 0.89. Approval for the study was obtained from the Research and Ethics Committee of the University of Uyo Teaching Hospital, while informed consent was obtained from each study participants. Analysis of results was conducted using SPSS version 20, and Chi-square test for independence was used to determine the association between variables at a *P*-value of 0.05.

### RESULTS

Out of the 309 questionnaires distributed, 290 were returned, 19 were not returned, and nine were omitted from the analysis due to inappropriate completion. Consequently, only 281 were used in this research, yielding a 90.9% response rate.

#### *Socio-demographic characteristics of study participants*

**Table 1: Socio-Demographics of the Respondents**

Demographic variables	No. of Respondents (n= 281)	Percentage (%)
<b>Sex</b>		
Male	123	43.8
Female	158	56.2
<b>Age (years)</b>		
Less than 20	3	1.1
20-30	64	22.8
31-40	136	48.4
41-50	52	18.5
51-60	26	9.3
<b>Education*</b>		
Primary	3	1.1
Secondary	44	15.8
Tertiary	232	83.2
<b>Religion**</b>		
Christianity	277	98.6
Traditional	1	0.4
<b>Years of practice</b>		
<1 year	28	10.0
1-5 years	99	35.2
6-10 years	83	29.5
11-15 years	34	12.1
>15 years	34	12.1
No Response	3	1.1
<b>Professional role</b>		
Admin Staff	26	9.3
Pharmacist	26	9.3
Doctor	25	8.9
Medical Lab Scientist	25	8.9
Ward attendant	24	8.5
Environmental Health officer	23	8.2

Radiographer	23	8.2
Records Officer	23	8.2
Cleaner	22	7.8
Nurse	22	7.8
Physiotherapist	22	7.8
Community Health Officer	20	7.1
<b>Type of staff</b>		
Clinical	189	67.3
Non-Clinical	92	32.7

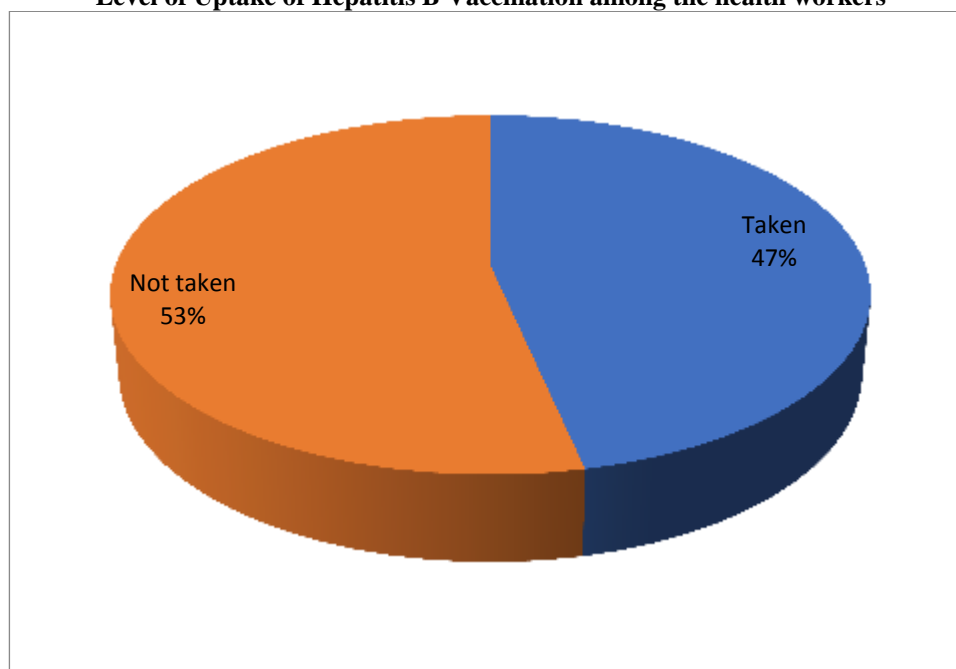
\* Two missing responses \*\*Three missing responses

The characteristics of participants are presented in Table 1. The respondents' average age was 37.37±8.51 years. The age of the respondents was between 20 and 59 years. The results showed that 3 (1.1%) of the respondents were less than 20 years, while nearly half, (48.4%, n=136), about two-fifth (18.5%, n=52), and about one-tenth (9.3%, n=26) of the respondents were between 31-40 years, 41-50 years and 51-60 years respectively. The sex distribution showed that below half, 123 (43.8%) were males and 158 (56.2%) were females. All the participants had one form of formal education or

another with most, 232 (83.2%), having had tertiary education. . The breakdown of their Years of Practice showed that 28 (10.0%) were less than 1 year, 99 (35.2%) were within 1-5 years, while 83 (29.5%), 34 (12.1%), and 34 (12.1%) were within 6-10 years, 11-15 years and over 15 years of practice, respectively. The distribution of the professional role was almost even at 23 (8.2%) because of the disproportionate stratified random sampling used in which equal numbers of respondents were selected from each of the professions. Result however, showed that overall, 189 (67.3%) were clinical staff and 92 (32.7%) were non-clinical staff.

#### *Uptake and completion of hepatitis B vaccination*

**Level of Uptake of Hepatitis B Vaccination among the health workers**



**Figure 1: Level of uptake of Hepatitis B Vaccination among the health workers in UUTH**

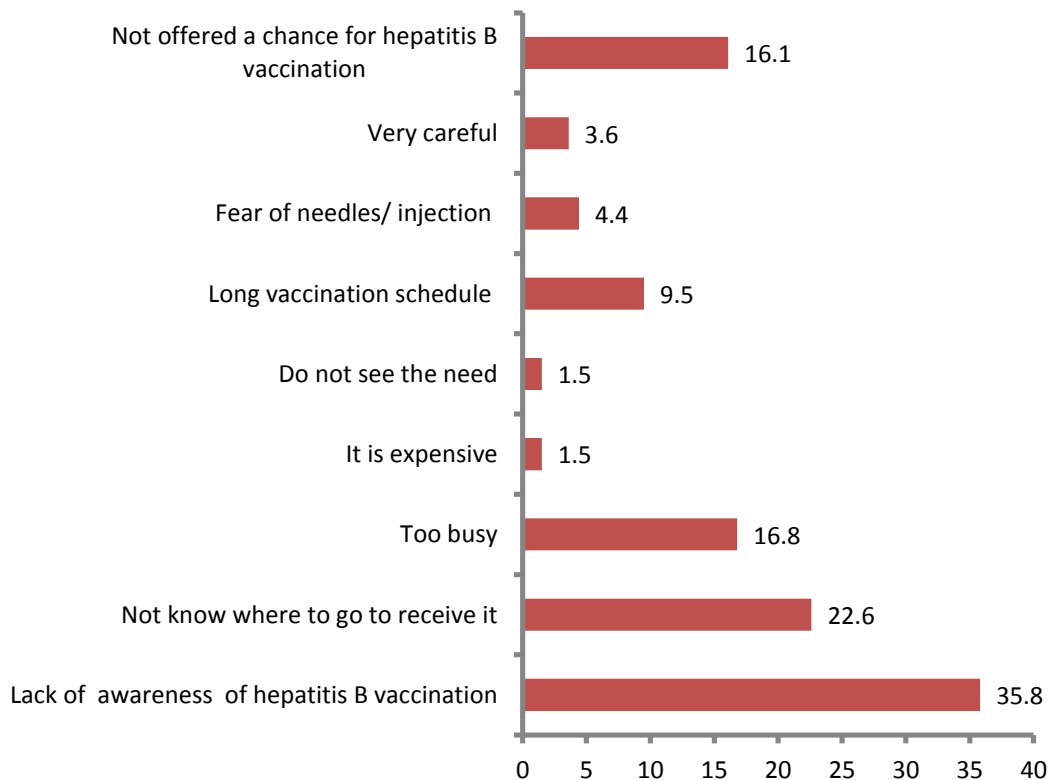
The proportion of health workers in UUTH that have ever taken Hepatitis B Vaccination was 47% (n=132) while 53% (n=149) had never taken the vaccination (see Figure 1).

**Table 4.2:** Possible reason for not receiving hepatitis B vaccination

Reasons for not have received hepatitis B vaccination	No. of Respondents	Percentage (%)
Lack of awareness of hepatitis B vaccination	49	35.8
Not Know where to go to receive it		
Too busy	31	22.6
Not offered a chance for vaccination	23	16.8
Long vaccination schedule	22	16.1
Fear of needles/injection	13	9.5
I am very careful	6	4.4
It is expensive	5	3.6
I do not need it	2	1.5
	2	1.5

The result in Table 4.2 presents possible reasons why the health personnel did not receive the vaccination which was analyzed and the result obtained is as presented in Table 4.2. From Table 4.2, lack of awareness of hepatitis B 49 (35.8%),

not knowing where to go to receive it 31 (22.6%) were the two major reasons why the health workers have not received the vaccination.



**Figure 4.2:** Reasons for not receiving hepatitis B vaccination by health workers in UUTH.

This result is also depicted using a bar chart as shown in Figure 4.2. Figure 4.2 also shows that lack of awareness of

Hepatitis B vaccination was the major reason among the health workers for not receiving hepatitis B vaccine.

**Completion of  $\geq 3$  doses of hepatitis B vaccination among the health workers in UUTH**

**Table 4.3:** Doses of hepatitis B vaccination received by the health workers

Doses received	No. of Respondents	Percentage
1 dose	73	56.6
2 doses	25	19.4
3 or more doses	31	24.0
Total	129	100.0

No response =3.

Table 4.3 presents the percentage of health workers that took different doses of hepatitis B vaccination. Results revealed that 73 (56.6%) of the health workers in UUTH that took hepatitis B vaccination in UUTH took only 1 dose, 25 (19.4%)

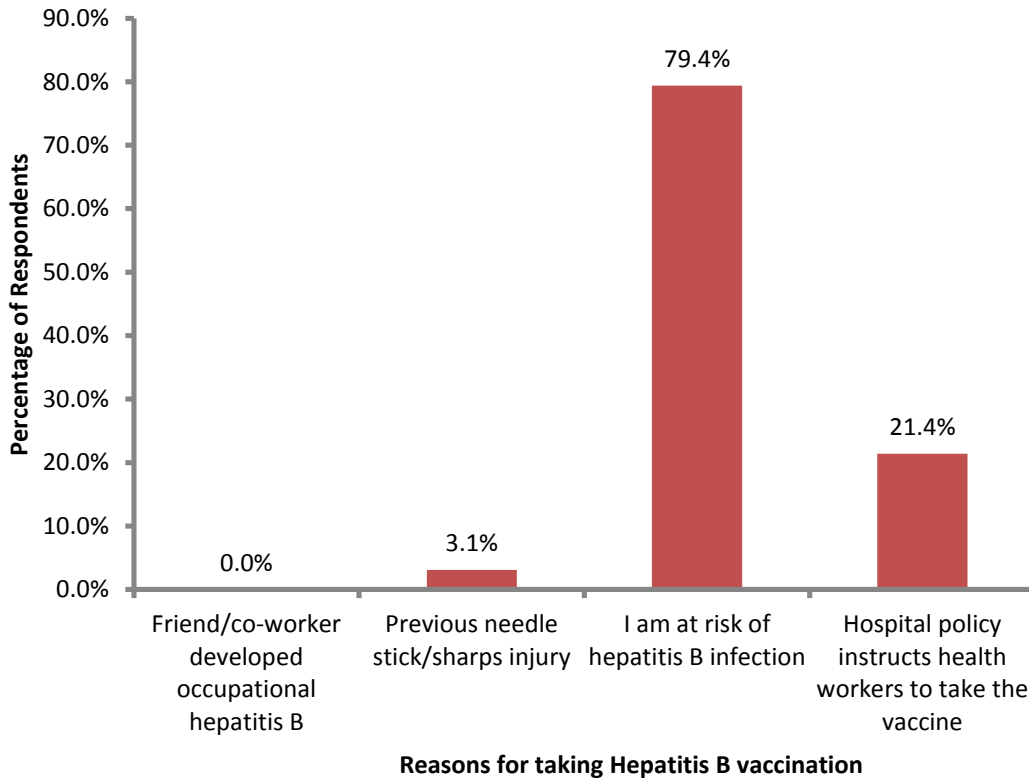
took 2 doses while only 31 (24.0%) of the respondents took 3 or more doses of the vaccination. This implied that only 31 health workers in the University of Uyo Teaching Hospital completed their dose of hepatitis B vaccination.

**Table 4.4: Possible reasons why the health workers in UUTH received Hepatitis B vaccination**

Reasons for receiving the vaccination	No. of Respondents	Percentage (%)
I am at risk of hepatitis B infection	104	79.4
Hospital policy instructs health workers to take the vaccine	28	21.4
Previous needlestick/sharps injury	4	3.1
Friend/co-worker developed occupational hepatitis B	0	0.0

Possible reasons for this were analyzed and the result presented in Table 4.4. The result in Table 4.4 indicates that feeling of being at the risk of hepatitis B was the major reason

why a majority of the health workers received the vaccination 104 (79.4%).



**Figure 4.3: Reason why health workers in UUTH took hepatitis B vaccination.**

This is also represented pictorially using a bar chart in Figure 4.3 which also reveals that perception of being at the risk of

hepatitis B infection was the major reason why most health workers in the study area received the vaccination.



**Factors associated with the uptake of Hepatitis vaccination among health workers in UUTH**

**Table 4.5:** Association between demographic variables and uptake of Hepatitis B Vaccination

Demographic variables	Taken (n=131) %	Not taken (n=150) %	P-value
<b>Sex</b>			
Male	48.0	52.0	0.780
Female	45.6	54.4	
<b>Age (years)</b>			
Less than 20	0.0	100.0	0.146
20-30	42.2	57.8	
31-40	46.3	53.7	
41-50	46.2	53.8	
51-60	65.4	34.6	
<b>Education</b>			
Primary	66.7	33.3	0.000**
Secondary	11.4	88.6	
Tertiary	53.4	46.6	
<b>Religion<sup>F</sup></b>			
Christianity	46.6	53.4	0.468
Traditional	100.0	0.0	
<b>Years of practice</b>			
<1 year	46.4	53.6	0.074
1-5 years	35.4	64.6	
6-10 years	51.8	48.2	
11-15 years	58.8	41.2	
>15 years	52.9	47.1	
<b>Professional role</b>			
Admin Staff	19.2	80.8	0.000**
Cleaner	9.1	90.9	
Community Health Officer	80.0	20	
Doctor	84.0	16	
Environmental Health officer	26.1	73.9	
Medical Lab Scientist	88.0	12	
Nurse	68.2	31.8	
Pharmacist	57.7	42.3	
Physiotherapist	27.3	72.7	
Radiographer	52.2	47.8	
Records Officer	26.1	73.9	
Ward attendant	20.8	79.2	
<b>Type of staff<sup>c</sup></b>			
Clinical	59.3	40.7	0.000**
Non-Clinical	20.7	79.3	

*P-values were generated from Chi-Square test of independence. F- p-value computed based on Fisher's Exact Test, c- p-value computed based on Continuity Correction, \*Significant at 5 % ( p<0.05), \*\*Significant at 1 % ( p<0.01)*

Results in Table 4.5 show the association between demographic variables and uptake of Hepatitis B Vaccination. There was no significant difference between the average age of the health workers that have taken the vaccination (38.45±8.50 years) and those that have not taken (36.74±8.56 years) (p = 0.103, p>0.05). The result indicates that none of the health workers with less than 20 years of practice have received the vaccination while more than half of the health workers between the age group 51-60 years 65.4% have received Hepatitis B vaccination. Result in Table 4.7 reveals

that less than half of the male (48.0%) and female (45.6%) have taken the vaccination while more than half of the health workers who have primary education (66.7%) and tertiary education (53.4%) has also taken the Hepatitis B vaccination. For those with secondary school education, only 11.4% of them have taken the vaccination. In terms of years of practice, more than half of the respondents with 6-10 years (51.8%), 11-15 years (58.8%), and more than 15 years of practice (52.9%) have taken the Hepatitis B vaccination while less than half of the respondents who have 1- 5 years of practice



(46.4%) and 1-5 years of practice (35.4%) have taken the vaccination. Result also indicates that more than half of the community health officers (80.0%), Doctors (84.0%), Medical Lab Scientist (88.0%), Nurses (68.2%), Pharmacists (57.7%) and Radiographers (52.2%) have taken Hepatitis B vaccination while less than half of health workers in other professional role have taken the vaccination. Result also shows that the majority of the clinical staff (59.3%) have taken the vaccination while only a few non-clinical staff have

taken the vaccination (20.7%). Result indicates that education ( $p= 0.000$ ,  $p<0.01$ ), professional role ( $p =0.000$ ,  $p<0.01$ ) and type of staff ( $p =0.000$ ,  $p<0.01$ ) are significantly associated with the uptake of Hepatitis B vaccination ( $p<0.05$ ) while other demographic variables were not significantly associated ( $p>0.05$ ).

Therefore, education, years of practice, professional role, type of staff, were significantly associated with the uptake of Hepatitis B Vaccination ( $p<0.05$ ).

**Factors associated with completion of Hepatitis B vaccination among health workers in UUTH**

**Table 4.6: Association between demographic variables and doses of Hepatitis B Vaccination received by the health workers in UUTH**

Demographic variables	One dose (n=73) %	Two doses (n=25) %	≥ 3 doses (n=31) %	P-value	
<b>Sex</b>					
Male	52.5	18.6	28.8	0.502	
Female	60.0	20.0	20.0		
<b>Age (years)</b>					
Less than 20	0.0	0.0	0.0	0.107	
20-30	42.3	38.5	19.2		
31-40	59.7	11.3	29.0		
41-50	58.3	16.7	25.0		
51-60	64.7	23.5	11.8		
<b>Education</b>					
Primary	100.0	0.0	0.0	0.225	
Secondary	100.0	0.0	0.0		
Tertiary	54.1	20.5	25.4		
<b>Religion</b>					
Christianity	56.7	19.7	23.6	0.684	
Traditional	100.0	0.0	0.0		
<b>Years of practice</b>					
<1 year	53.8	23.1	23.1	0.042*	
1-5 years	57.1	22.2	11.4		
6-10 years	58.5	31.4	36.6		
11-15 years	40.0	25.0	35.0		
>15 years	72.2	4.9	5.6		
<b>Professional role</b>					
Admin Staff	100.0	0.0	0.0	0.000**	
Cleaner	100.0	0.0	0.0		
Community Health Officer	12.5	43.8	43.8		
Doctor	50.0	5.0	45.0		
Environmental Health officer	33.3	50.0	16.7		
Medical Lab Scientist	45.5	31.8	22.7		
Nurse	53.3	13.3	33.3		
Pharmacist	73.3	13.3	13.3		
Physiotherapist	66.7	33.3	0.0		
Radiographer	52.2	0.0	16.7		
Records Officer	83.3	0.0	0.0		
Ward attendant	280.0	20.0	0.0		
<b>Type of staff</b>					
Clinical	55.0	18.9	26.1		0.384
Non-Clinical	66.7	22.2	11.1		

*P-values were generated from Chi- Square test of independence. \*Significant at 5 % (  $p<0.05$ ), \*\*Significant at 1 % (  $p<0.01$ ).*



There was no significant difference in the average age of health workers that took 1 dose (39.81±8.97 years), 2 doses (36.60±8.82 years), and those that have completed their dose (37.00±6.79years) (F-calc. = 1.987, p = 0.141, p>0.05). The result in Table 4.6 revealed that years of practice (p = 0.042, p<0.05) and professional role (p = 0.000, p<0.01) were the only demographic parameters significantly associated with the completion of the recommended doses of Hepatitis B vaccination (p<0.05). The result showed that more health workers between 31-40 years (29.0%) and 41-50 years (25.0%) have completed their recommended dose compared with health workers in other age groups. The result indicated that the largest percentage of those that have completed their dose were health workers with 6-10 years of practice (36.6%) followed by those with 11-15 years of practice (35.0%). In terms of professional roles, a larger percentage of Community Health Officers (43.8%), Doctors (45.0%) have completed their recommended dose compared with those in other professional roles.

## DISCUSSION

The purpose of this study was to assess hepatitis B vaccine uptake, completion, and associated factors among health staff at the University of Uyo Teaching Hospital. This is the first study that I am aware of that looks at the hepatitis B vaccination situation among health professionals at the University of Uyo Teaching Hospital in Akwa Ibom State.

### Uptake of the vaccine among health workers in UUTH

Hepatitis B vaccine was found to have low uptake. Only 47% had ever gotten the vaccine, which is smaller than the results reported by <sup>(12)</sup> in nearby Bayelsa State and Jos in the North of Nigeria where the vaccination had been received by 65% of the researched population. This difference in result could be because this study looked at a broader variety of employees, such as cleaners, pharmacists, and administrative personnel, whereas the Bayelsa and Jos studies only looked at doctors, nurses, and laboratory scientists. Higher vaccination grades have been found in studies conducted in Ghana 53.1% <sup>(13)</sup>, Ethiopia 57.7% <sup>(14)</sup>, the United States 75% <sup>(15)</sup>, and China 86% <sup>(16)</sup>. This study's result is above the 22.4% obtained among professionals in Enugu <sup>(17)</sup>, 14.2%, <sup>(18)</sup>, and higher than results found in studies in Tanzania 8.6% <sup>(19)</sup> and Zambia 19.3% <sup>(20)</sup>. It is, however, almost the same as the result in the study conducted in Sokoto State where vaccine uptake was found to be 40.3% <sup>(21)</sup> and South-Sudan 44.2% <sup>(22)</sup>.

According to respondents who have been vaccinated, most of them affirmed that being at risk of hepatitis B infection 70.4%, hospital policy on vaccination 21.4% and previous needle stick injury 3.1% were some of the reasons why they had gotten vaccinated. Table 4.3

For persons who responded to not ever being vaccinated, Table 4.2, reasons for this were mostly lack of awareness of hepatitis B vaccination (35.8%), Not knowing where to go to get the vaccine (22.6%), being too busy (16.8%), and long

vaccination schedules (9.5%) are a few of the reasons for not getting vaccinated.

### Complete vaccination among health workers in UUTH

Regarding being vaccinated fully, findings from this study indicate even more reduced rates, as only 24% of the sampled population has been properly immunized (Figure 3). This finding is comparable to <sup>(23)</sup> findings who observed that respondents from their study who were fully vaccinated accounted for 20% of their study population. Although the study population for their study was targeted at only dental surgeons, this study explored a more diverse group of workers. Also, the findings on complete vaccination from this study might be from some respondents not being due for their concluding dose of the vaccine. Others may be ignorant that they need to take 3 doses to complete the vaccination. The finding for this study is also comparable to similar results from studies in Cameroon 24.5% among resident doctors and 22.1% in South-Sudan <sup>(24, 22)</sup>. This study included a wider group of health workers compared to the study in Cameroon which was undertaken among only resident doctors. The logic for the similarity between the study in Cameroon and this current study is unclear.

65% had been fully vaccinated in Ife <sup>(25)</sup>. The higher completion rate found in Ife compared to this study may be due to the existence of occasional vaccination programs in Ife. Elsewhere in Libya, complete vaccination was as high as 72% <sup>(26)</sup>. Also, this study's findings in terms of complete vaccination was higher than those obtained in Enugu 3.7% and Yobe State 18.13% <sup>(17,27)</sup>. This suggests that below half of the employees in the University of Uyo Teaching Hospital are fully protected from hepatitis B infection and are likely to contract the infection if exposure should occur.

### Factors Associated with the uptake of hepatitis B vaccination

In this study, analysis of the association between uptake of hepatitis B vaccine and sociodemographic variables was determined. Findings from our study reveal the following.

#### Age and uptake of hepatitis B vaccination

The age of the health workers had no bearing on whether or not they received the vaccine, according to this study. The basis for this result is unknown, although it is comparable to the findings of research in South Sudan, which found no link between health workers' age and vaccination uptake <sup>(22)</sup>. This differs from the outcome of a nearby study in Enugu, which revealed a link between the age of health professionals and the adoption of the hepatitis B vaccine <sup>(18)</sup>. This disparity could be attributed to the sizable sample size employed in the Enugu study versus this one.

#### Years of practice and uptake of hepatitis B vaccination

In this study, an association was found between years of practice and uptake of the hepatitis B vaccine. Health workers with more length of time in the health profession had higher vaccine uptake. The most likely explanation for this outcome





may be that with long years in the profession, health workers may have had experiences that motivated them to receive the vaccine on a precautionary basis. This conclusion is harmonious with outcomes from surrounding investigations. Years of practice were found to be linked to vaccination uptake in Enugu<sup>(17)</sup>.

<sup>(12)</sup> also found years of practice to be associated with vaccine uptake among health workers in Bayelsa and Jos. Likewise, studies outside Nigeria in Ghana and Sweden have observed the same association between years of practice and uptake of hepatitis B vaccination<sup>(13, 28)</sup>. This finding is however in contrast to results from Serbia and Uganda where those who had worked for under 5 years were found to have higher vaccine uptake among the surveyed groups of health workers.<sup>(29, 30)</sup>

### **Professional role and uptake of hepatitis B vaccination among health workers in UUTH**

The professional role was observed to be associated with the uptake of hepatitis B vaccination in this study's findings. This is comparable to the findings of a neighboring study in Sokoto which also found an association between professional roles of the health employees and uptake of the vaccine<sup>(21)</sup>. Findings from this study indicate that medical laboratory Scientists had the highest vaccination uptake among other professions in the cadres of health workers studied, followed closely by doctors. This is akin to observations from studies conducted elsewhere in Zambia where it was shown that laboratory personnel had higher vaccination rates than other groups in the study<sup>(20)</sup>. The occupation was also found to be associated with vaccine uptake in Cyprus<sup>(31)</sup> found that vaccination was highest among Doctors, Laboratory personnel, and Nurses.

The health worker groups of cleaners, health attendants, and administrative staff had the lowest vaccine uptake in this study. This finding is perhaps due to health workers' low-risk perception of hepatitis B infection among this class of workers. A similar observation was also found in the study in Sokoto State<sup>(21)</sup>.

### **Factors associated with complete hepatitis B vaccination among health workers in UUTH**

For complete hepatitis B vaccination, findings from this study only found an association in years of practice and professional role. Other demographic parameters gender, age, educational attainment, religion, and category of staff (clinical or non-clinical) had little bearing on the completion of the vaccination schedule amongst health personnel at the University of Uyo Teaching Hospital. In addition, all other factors assessed like knowledge of the vaccine and infection, risk perception, and knowing where to get the vaccine were not associated with complete hepatitis B vaccination among the health workers in the University of Uyo teaching hospital.

### **Professional role and complete hepatitis B vaccination**

For the sociodemographic factors which were found to be associated. The professional role was found to be associated with completing the vaccination schedule. This finding is

comparable to a neighboring one in Ilorin<sup>(32)</sup>. Similar findings were also recorded from the study in Saudi Arabia where an association was found between professional role and complete vaccination<sup>(33)</sup>.

Completed vaccination was found to be higher amongst medical doctors, and community health officers closely followed by nurses and medical laboratory scientists having values of 45%, 43%, 33%, and 22.7% respectively. The lowest completion rates were found among cleaners, admin staff, physiotherapists, records officers, and ward attendants with no one in these groups completing the dose and thus had 0% complete vaccination. Pharmacist and Environmental health officers by contrast had complete vaccination of 13.3% and 16.7% respectively.

Although the finding that community health officer from this study is new and not comparable to any other studies, this is perhaps because of the across-board selection of health worker cadres involved in this study compared to other studies that investigated vaccination patterns among just medical doctors, nurses, or laboratory scientists.

### **Years of practice and complete hepatitis B vaccination**

Years of practice was also found to be associated with complete vaccination in this study. Similar results were found among health workers in Uganda<sup>(30)</sup>. Another study that compares well to this study in terms of years of practice is the study conducted in Saudi Arabia where years of practice was associated with being fully vaccinated<sup>(33)</sup>.

## **CONCLUSIONS**

This study found that in the University of Uyo Teaching Hospital, Akwa Ibom State, less than half of the workers have taken hepatitis B vaccination and only 24% have gone ahead to complete the required doses. It is also evident that professional groups of doctors, nurses, medical laboratory scientists, and community health staff have received their vaccination than other sets of the health workforce. Furthermore, those who have worked for long years have better hepatitis B vaccine uptake and completion rates. Ignorance about where to receive the vaccine, a hectic schedule, and protracted immunization schedules were some of the factors contributing to low vaccine uptake among health workers at the University of Uyo Teaching Hospital, according to the findings.

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