

Assessment of Knowledge, Attitude and Practice Towards Hepatitis B Virus Screening and Vaccination Among Auxiliary Health Workers in University of Maiduguri Teaching Hospital (UMTH)

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ABSTRACT

Background: Hepatitis B is one of the important blood-borne diseases that pose a challenge to public health. It is the most common cause of liver infection globally. Despite the high risk of hepatitis B in healthcare workers, the knowledge, attitude, and practice concerning hepatitis B infection among them is low. **Aim:** To document the level of awareness of HBV infection among auxiliary health workers and to identify the source of information on the knowledge of auxiliary health workers towards HBV infection. **Methods:** A cross-sectional descriptive study involving 240 auxiliary health workers in the University of Maiduguri Teaching Hospital that were interviewed using an interviewer-administered questionnaire. **Results:** The study population comprised an equal number of males (50%) and females (50%). The mean age of the respondents was 32.9 years. Majority had secondary education 96(40%) and were Kanuri tribe. In total, 81.1% of respondents knew that HBV is caused by a virus, and 70.8% believed the virus can be transmitted through blood transfusion and 71 (29.6%) through unprotected sexual intercourse. One hundred and sixty-eight (74.2%) respondents were aware of the availability of HBV screening programmes in the facility, 131 (54.6%) of them had been screened for HBV and received HB vaccine. Majority (96.7%) of the respondents believed that HBV is a public health problem, 93.8% agree their job puts them at high risk of HBV infection. **Conclusion:** The study concluded that majority of the respondents had information about HBV, and the major source of information was through other health workers. A good number of the respondents had been screened or taken vaccination against HBV.

Keywords: knowledge, hepatitis B virus, screening, vaccination, auxiliary health workers.

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Introduction

Hepatitis B virus (HBV) infection is a very important public health problem globally and is the tenth leading cause of death among all diseases.¹ Globally, about 360-400 million people are chronically infected with HBV.^{2,3} Every year between 0.61 million and one million people die from HBV infection,³⁻⁵ mainly due to the sequelae of chronic hepatitis, such as liver cirrhosis and hepatocellular carcinoma (HCC).^{1,6,7}

In the healthcare setting, the risk of HBV infection is mainly among healthcare workers (HCW), but this risk also exists even among staffs that do not directly meet patients. The prevalence of HBV is 2-10 times in HCW as compared to the general population.^{8,9} Percutaneous or mucosal exposure to infected blood and body fluids, and the use of inadequately sterilized medical equipment are the main risk factors of HBV infection in HCW.⁹ In developing countries, where the prevalence of HBV is high in the general population, the risk of



occupational exposure is also high.¹⁰⁻¹³ Abiola et al¹⁴ reported that about 20 million Nigerians are infected with hepatitis B virus and are at risk of developing liver cirrhosis and hepatocellular carcinoma (HCC). Worryingly, majority of these people are not aware that they are carrying the virus and are transferring the infection to other people in the community. According to a study by Aishwarya et al,¹ among health care workers in a tertiary health care hospital in Mysuru, India, nurses had good knowledge about hepatitis B when compared to the technicians and auxiliary health care workers (AHCWs). A similar study from Usman Dan-fodiyo University Teaching Hospital, Sokoto, Nigeria, revealed that majority of the respondents (78.2%) demonstrated good knowledge of HBV infection. However, there was no difference between knowledge of HBV infection and any of the socio-demographic variables ($p > 0.05$). Although majority of the respondents (86.3%) knew hepatitis to be caused by a virus, some of them misperceived it to be caused by bacteria (7.3%), or parasite (6.5%). Similarly, majority of the respondents knew the various mode of transmission of HBV infection, where 95.0% believed it can be transmitted via needle prick, (73.4%) via percutaneous injury, and (82.3%) from mother to her child. About (71.8%) considered the virus to be a risk factor for liver cancer and a large proportion (62.1%) believed that the disease is curable. Prevention of HBV infection in the healthcare setting involves adherence to universal precautions, including protective barriers like gloves, proper hospital waste disposal, proper sterilization of medical equipment and vaccination.¹⁶⁻¹⁹ A study from Cameroon showed poor practice among study participants, with only 10% vaccination rate against HBV and 55.9% accidental exposure to blood.²⁰ The endemicity of hepatitis B virus infection in developing countries makes auxiliary health care workers at high risk of occupational exposure than the general population.²¹ This is largely because of constant exposure during handling of biomedical wastes, including blood and its products. This study aims to assess the level of awareness of HBV infection among auxiliary health workers and to identify the source of information on the knowledge of auxiliary health workers towards HBV infection.

Methodology

Study area: the study was conducted at the University of Maiduguri Teaching Hospital

Maiduguri (UMTH) Borno State. Maiduguri has an estimated population of about 1.2 million people according to the 2006 National Population Census figures.

Study design/population: This is a cross-sectional descriptive study involving auxiliary health workers in the University of Maiduguri Teaching Hospital. Auxiliary health workers from all the departments were randomly selected. The field work lasted for the period of four weeks, considering only the week days (from Monday to Friday). These are hospital support staff such as porters, technicians, aides, and assistants. The sample size was estimated at 194 using Epi Info statistical software, however 240 adults who consented to give information were enrolled into the study to allow for missing data. They were interviewed using an interviewer-administered questionnaire. We included adults aged 18 years and older under the employment of the UMTH. Majority of the respondents were of Kanuri extraction. Other ethnic groups included were Shuwa Arab, Bura, Marghi, Hausa/Fulani and Kibaku among others. The study lasted for a period of four weeks from 28/04/2017 to 27/05/2017.

Source of data and data collection: Data were collected from consenting persons (auxiliary health workers), using structured questionnaires. The questions were read to them in a language they understand, the interviewers were allowed to fill in the answers appropriately. The questionnaire consists of thirty-seven questions which are divided into sections: Thus, Section A, consists of sociodemographic data of the respondents. Section B is designed to assess the knowledge, attitude, and practice of the respondents towards hepatitis B virus screening and vaccination.

Data analysis: The information obtained from the respondents was analyzed using SPSS v20 (2014) and presented in tables using Microsoft Word® as percentages.

Results

Demographic characteristics: Two hundred and forty auxiliary health workers in UMTH were involved in this study. Their ages ranged between 20 to 70 years with majority, ⁸³(34.6%) between 20-29 years old. Males and females were equally represented (50% each). A higher proportion of the participants 75 (31.3%) were Kanuris, and about two thirds, 158



(65.8%) were married. In terms of the educational level, 96 (40.0%) of the participants had Secondary school certificate (SSC) while 74 (30.8%) had no formal education (Table 1).

TABLE 1: Socio-Demographic Data of Auxiliary Health Workers in UMTH, April-May 2017

Variable	Frequency	Percentage
Age (years)		
20-29	65	27.1
30-39	83	34.6
40-49	58	24.2
>50	32	13.3
No response	2	0.8
Sex		
Male	120	50.0
Female	120	50.0
Ethnicity		
Kanuri	75	31.3
Babur	53	22.1
Marghi	41	17.1
Others	71	29.5
Marital status		
Single	56	23.4
Married	158	65.8
Divorced	14	5.8
Widowed	12	5.0
Department		
Surgery	2	0.8
Medicine	23	9.6
Obstetrics and Gynaecology	44	18.3
Paediatrics	23	9.6
Anaesthesia	10	4.2
Dental surgery	9	3.8
ENT	7	2.9
Orthopaedics	18	7.5
Physiotherapy	3	1.3
Radiology	7	2.9
Nursing	94	39.1
Educational level		
Secondary (SSC)	96	40.0
Diploma	36	15.0
Higher diploma	34	14.2
No formal education	74	30.8
Total	240	100.0

Assessment of knowledge towards Hepatitis B

In terms of knowledge of the aetiology and methods of transmission of HBV, 180 (75.0%) respondents demonstrated that they have ever read about HBV infection. Although most of these respondents 157 (65.4%) knew HBV infection to be caused by a virus, some of them misperceived it to be caused by bacteria 20 (8.3%) and parasites 25 (10.4%).

Sixty (25%) respondents reported that their major source of information about HBV was through health workers, while the source of information was through television and radio in 54 (22.5%) and 32 (13.3%) respondents respectively. Regarding knowledge of the method of transmission of HBV, 170 (70.8%) of the respondents knew that the virus can be



transmitted through transfusion of unscreened blood, 162 (67.5%) through contaminated instruments and 71 (29.6%) through unprotected sexual intercourse. Two hundred and eight (74.2%) of the respondents were aware of the availability of HBV screening (Table 2).

TABLE 2: Awareness, Source of Information, Knowledge of Aetiology and Method of Transmission of Hepatitis B Virus Among Auxiliary Health Workers in UMTH

Variable	Frequency	Percentage
Heard About Hepatitis B infection		
Yes	180	75.0
No	55	22.9
No response	5	2.1
Source of information (multiple answers)		
Television	54	22.5
Radio	32	13.2
Newspaper	20	8.3
Friends	30	12.5
Health worker	60	25.0
Mosque & church	7	2.9
Posters & flyers	3	1.3
Training & seminars	34	14.3
Knowledge of the cause of the disease		
Virus	157	65.4
Bacteria	20	8.3
Fungus	15	6.3
Parasites	25	10.4
No response	23	9.6
Method of transmission (multiple answers)		
Contaminated instruments	162	67.5
Blood transfusion (unscreened)	170	70.8
Sharing sharp objects	137	57.1
From mother to her unborn child	136	56.7
Contact with body fluid like saliva	123	51.3
Sharing cooking utensils	47	19.6
Mosquito bite	62	25.8
Unprotected sexual intercourse	71	29.6
Barbing instrument	127	52.9
Pedicure & manicure	96	40.0
Ear piercing, uvulectomy, circumcision	127	52.9
Aware of HBV screening?		
Yes	208	86.7
No	19	7.9
No response	13	5.4
HBV curable?		
Yes	191	79.6
No	49	20.4
Can cause liver disease?		
Yes	207	86.3
No	33	13.7
Total (number of those who have heard of HBV)	240	100.0

Assessment of attitude towards Hepatitis B



The attitude of auxiliary health workers toward HBV was assessed by asking questions with five level scales (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree). For opinions that were sought whether HBV is a great public health problem, 166 (69.2%) of the respondents strongly agreed and 66 (27.5%) respondents agreed that it is a public health problem. Respondents' attitude on whether their job puts them at greater risk of HB infection seems to favour strongly agree and agree with 119 (49.6%) and 106 (44.2%), respectively. Concerning the

mandatory vaccination of auxiliary health workers, most of the participants responded positively to this question, strongly agreed; being 129 (53.8%) and agreed 98 (40.8%). For the question item, effectiveness of the vaccine after exposure and importance of the vaccine as post-exposure prophylactic when patient status is unknown, the opinions seems to be inclining towards positive responses with the highest number of respondents being 71 (29.6%) and 71(29.6%) for strongly agree and agree respectively (Table 3).

TABLE 3: Attitude of Auxiliary Health Workers Toward Hepatitis B Virus Screening and Vaccination in UMTH, April-May 2017

Variables	Frequency (%)				
	SA	A	N	D	SD
HBV is a serious health problem	166(69.2)	66(27.5)	6(2.5)	2(2.5)	0.0(0)
Your job put you at risk of Hepatitis B Infection	119(49.6)	106(42.2)	11(4.6)	3(1.3)	1(0.4)
Is it necessary for you to receive HB Vaccine?	129(53.8)	98(40.8)	8(3.3)	4(1.7)	1(0.4)
Hepatitis B Vaccine is safe	106(44.2)	114(47.5)	14(5.8)	4(1.7)	2(0.8)
HCWs should not be involved in exposure-prone invasive procedures	30(12.5)	106(44.2)	79(32.9)	20(8.3)	5(2.1)
After exposure to contagious fluid/material, the vaccine reduces the likelihood of being HBV positive	71(29.6)	71(29.6)	60(25.0)	19(7.9)	19(7.9)
The vaccine is not important if the exposure is not with the patient blood	44(18.3)	51(21.3)	70(29.2)	28(11.7)	28(11.7)
There should be vaccine guideline in work areas	124(51.7)	87(36.3)	22(9.2)	6(2.5)	1(0.4)
Training of the vaccine is important for behavioural change	101(42.1)	108(45.0)	25(10.4)	5(2.1)	1(0.4)

KEY: SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree
Assessment of practices towards Hepatitis B

Assessment of response to practices related to HBV was done by asking four questions. Out of 240 respondents, 160 (66.7%) of the survey participants said that they had ever been exposed to HBV risky conditions. With regards to the type risky conditions, 82 (51.3%) have had contact with infected blood. Concerning the respondents

that knew the factors that contributed to their exposure, 98 (61.2%) said it was due to lack of exposure preventive measures and 26 (16.3%) said it was due to careless handling of patient or Infectious material. Forty-six (28.8%) of the respondent washed their hands with soap, water and antiseptic as post-exposure preventive measures (Table 4).



TABLE 4: Practice of Hepatitis B Virus Screening and Vaccination Among Auxiliary Health Workers in UMTH, April-May 2017

Variable	Frequency	Percentage
Exposed to HBV risky condition		
Yes	160	66.7
No	65	39.6
I don't know	12	15.0
No response	3	1.3
If yes, what was the risky condition (n=160)		
Contact with infected blood	82	51.3
Contact with body fluids like urine/saliva	42	26.3
Contact with contaminated material	18	11.2
Others	8	5.0
No response	10	6.2
What factor contributed to the exposure?		
Lack of exposure preventive measures	98	61.2
Being busy	18	11.2
Rushing at work	14	8.7
Careless handling of patient or infectious material	26	16.3
Others	2	1.3
No response	2	1.3
What sort of post-exposure preventive measure did you take?		
Immediate reporting	92	57.5
Know about the patient status	11	6.8
Allow injury to bleed	6	3.7
Wash with soap, water and antiseptic	46	28.8
Others	3	1.9
No response	2	1.3
Total	240	100.0

Vaccination

With regards to vaccine knowledge and uptake by respondents, 162 (90.0%) believed that the virus can be prevented by vaccination, 170 (94.4%) knew about HBV vaccine and 131 (54.6%) of them had been screened for HBV and received the vaccine. Eighteen (43.9%) respondents did not receive the full course of vaccination and 230 (97.0%) of the study participants were willing to take the vaccine if available, while 206 (85.8%) were willing to pay for it when asked to. Regarding the importance of taking the vaccine, 197 (82.1%) said it is very important, and only 2 (0.8%) of respondents were not in the opinion of taking the vaccine.

Discussion

Hepatitis B virus infection is of major health concern, especially in hospital settings. The risk of HBV infection among health workers is of

grave concern. The study aimed to assess the knowledge of HBV screening and vaccination among auxiliary health workers in UMTH Maiduguri. Our results showed a high overall knowledge regarding HBV infection, its aetiology, mode of transmission and viral screening. In all, a large number (34.6%) of the respondents belong to the economically active age group of the society (20-29 years). This age group may have received information on HBV screening and mode of transmission. Considering the departments of the respondents, a large proportion was from the nursing services department, since that is where most of the facility workforce lies. In addition, most respondents had secondary level education. A substantial proportion of the respondents had knowledge of HBV. This is similar to what was reported in other studies.^{15,22,23} Furthermore,



majority (81.6%) of the respondents knew HBV to be caused by a virus, 11.1% thought it to be caused by bacteria and 1.7% said it is caused by parasites. These findings were in accordance with a study by Hassan et al which found that 86.3% of the respondents knew it to be caused by a virus, 7.3% and 6.5% said it is caused by bacteria and parasite respectively. The study also showed that majority (96.7%) of the respondents knew that HBV is a public health problem; this is higher than what was reported by Afework et al 23 in Addis Ababa. This is because health workers in this hospital are commonly involved in community health services where diseases of public health importance are discussed.

Overall, the response towards HBV prevention among respondents was favourable where 53.8% strongly agreed and 40.8% agreed that HBV vaccination is effective and safe for the prevention of HBV infection. Most respondents (49.6% strongly agreed and 42.2% agreed) were aware that their work puts them at risk of acquiring HBV. The finding was in line with the studies from Adamawa, northern Nigeria²² and Saudi Arabia²⁴ among health care workers and dentists respectively.

The world health organization (WHO) recommends that all HCW in HBV endemic countries be vaccinated for HBV prevention. However, our study showed a low vaccination rate of 54%.

Conclusion

Our data demonstrated that majority of the auxiliary health workers are aware of HBV. We found a significant association between the source of information and method of transmission. Additionally, majority of the auxiliary health workers had good attitude towards HBV screening and vaccination and many respondents were willing to take the vaccine if available.

Recommendations

1. The screening of all auxiliary health workers should be part of the routine practice in all hospitals by the local, state and federal ministry of health in all health facilities across the country, irrespective of the risk factors, which have been shown as predictors of infection. If possible, the screening and treatment of positive cases should be made free as for HIV. This, in addition to universal immunization against Hepatitis B virus.

2. Also, there should be aggressive sensitization by the hospital management to increase awareness on the effects of hepatitis B among auxiliary health workers.
3. The Federal Government should, in addition to the above measures, establish the goal of eliminating hepatitis B and make national policies that specifically target people that are at risk of Hepatitis B infection of which Auxiliary health workers are one.

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