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KNOWLEDGE AND PRACTICE OF HEPATITIS B PREVENTION AMONG HEALTH CARE WORKERS IN WESLEY GUILD HOSPITAL, ILESA, OSUN STATE NIGERIA

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ABSTRACT: *Background: Globally, health workers are at risk of contracting Hepatitis B infection if preventive measures are jeopardized. This study assessed the knowledge and practice of prevention of Hepatitis B, identified factors affecting practice of HBV prevention among health care workers (HCW) and assessed factors influencing vaccination against hepatitis B in Wesley Guild Hospital, Ilesa, Osun State, Nigeria. Method: A descriptive cross sectional design was adopted. One hundred and ninety-two health care workers were selected using simple random sampling technique. Data were collected using a structured questionnaire and was analyzed using SPSS version 20.0 Result: Findings showed that 99.5% of the respondents had good knowledge about HBV infection, 99% of the respondents had good knowledge on prevention of HBV infection. Knowledge was associated with academic qualification (P = 0.001). Also, 60.9% had good practice of prevention of hepatitis. Years of experience was not associated with practice of prevention of HBV Infection (P = 0.056). Also, 85.4% of health workers had been tested for hepatitis virus before and less than three – quarter had received HBV vaccine. Also, (29.2%) had never received hepatitis B vaccine. Barriers associated with HBV vaccination among HCW include: availability of hepatitis B vaccine in the hospital (87.5%), cost of the vaccine (76%) fear of needle prick during vaccination (50%). Conclusion: The study concluded that majority of the health care workers had good knowledge of Hepatitis B prevention but not all of them with good knowledge carried out good practices regarding to HBV infection prevention.*

KEYWORDS: HBV Infection Prevention, Knowledge, Health Care Workers

INTRODUCTION

The burden of Hepatitis B among healthcare professionals cannot be over-emphasized. It is associated with serious public and personal health outcomes and considered to be the most important cause of occupational acquired viral hepatitis amongst Doctors and Nurses who are particularly at risk of contracting the infection via contact with blood and other secretions in the course of discharging their duty (Gonieweicz, Wiosczcak, Neimcewicz, Wilt & Marciniak, 2012).

More importantly, Hepatitis B is a serious global health public problem and the health professionals are at most risk. The infection is contagious and easily transmitted from one infected person to another by blood to blood contact, mother to child, unprotected sexual intercourse, sharing of eating utensils and other barber shop and beauty salon equipment. Hepatitis B is an important occupational hazard for health workers but can be prevented if the individual has the knowledge about the disease process (Adekanle, Ndububa, Olowookere, Ijarotimi & Ijadunola, 2015).

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According to the World Health Organization (2016) the average number of injuries per healthcare worker (0.2 to 4.7% sharp injuries per year). The annual proportion of healthcare workers exposed to blood-borne pathogens was 5.9% for HBV, corresponding to about 66,000 HBV infections in healthcare workers worldwide (Aspinall, Hawkins, Fraser, Hutchinson & Goldberg, 2011). Health Care Workers (HCWs) have been shown to have an up to four-fold increased risk of acquiring HBV infection (Jha, Chadha, Bhalla & Saini, 2012). The main risk factor to contract HBV infection for HCWs is direct contact with infectious material, especially HBV-infected blood or via a needle stick injury with HBV-contaminated body fluids. For example, recapping of hollow-bore needles are associated with increased risk of needle stick injuries, consequently, proper precautions (e.g., use of disposable gloves) against blood-borne infections are lacking in these workers (Ansa, Udoma, Umoh & Anah, 2002). This makes health professionals at risk of being infected with Hepatitis B Virus. Hepatitis B is an important occupational hazard for health care workers (WHO 2012). Previous studies have shown that HCWs have up to four-fold increased risk of acquiring HBV infection (Jha, Chadha, Bhalla & Saini, 2012). The main risk factor to contract HBV infection for HCWs is direct contact with infectious material, especially HBV-infected blood or via a needle stick injury with HBV-contaminated body fluids (Pellissier, Yazdanpanah, Adehossi, Tosini, Madougou & Ibrahima, 2012). Previous studies have reported a lack of awareness of HBV among HCWs; consequently, proper precautions (e.g., use of disposable gloves) against blood-borne infections are lacking among these workers (Ansa, Udoma, Umoh & Anah, 2012).

Previous studies have shown that there is low perceived risk of Hepatitis B infection and low vaccination coverage despite high awareness of Hepatitis B vaccine (Adekanle et al., 2015). Despite being health care workers, it seems that health care workers lack adequate knowledge on prevention of Hepatitis B, though, few studies had focused on knowledge of health care workers in this environment, hence, the need for study. The objectives of the study are as follows, to;

- Assess the level of knowledge of health care workers on causes and risks factors that predisposes them to HBV Infection.
- Determine health care workers knowledge on the mode prevention and treatment of HBV Infection
- Identify factors affecting practice of HBV prevention among health care workers and
- Assess the barriers that prevent health care workers from being vaccinated against hepatitis B.

METHODOLOGY

The study employed a descriptive cross sectional design to determine the knowledge of prevention of hepatitis B among health care workers in a Nigerian hospital.

Population and sampling; The study population comprises health care workers in WGH, Ilesa, such as Nurses, Doctors, Pharmacist, Medical Scientist, Physiotherapist, Health attendants and Laundry workers. Simple random sampling techniques were used to proportionately select 192 health workers in various department of the institution using shift duty roaster and call duty roaster as the sampling frame. The sample size for this study was determined using Naegle's rule.

$$N = Z^2PQ/d^2$$

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Where Z is the standard normal variance = 1.96, P is the prevalence rate, Q = 1-P, D = 0.05

Prevalence rate (P) = as summed to be 13% among health care workers. It gave the sample size of 174respondents, 10% attrition rate added (18) which makes 192 respondents.

Instrument for data collection and analysis; Data were collected with aid of a self administered questionnaire; the instrument was structured in line with the culture, settings and objectives of the study. The instrument was subjected to proper scrutiny by experts in the fields of nursing and medicine. The questionnaire has four sections. Section A consist of socio demographics variables of the respondents, section B consist of questions on knowledge of the respondents about hepatitis B, which consist of 34 items altogether (32) in closed ended format , section C assessed respondents preventive measure practice on hepatitis B, it consists of 6 items with options ranged from Yes (3), No (2), Don't know (1),while section D assessed barriers to vaccination respondent faced in preventing themselves from hepatitis B, comprises of 4 test items in closed ended format. Each correct option was given 1 mark while wrong answers had 0. The highest possible mark was 29. Scores above 50% were categorized as having good knowledge, while scores below had poor knowledge.

Ethnical consideration; Ethical clearance for this study was obtained from Ethic and Research Committee of Institute of Public Health, Obafemi Awolowo University, Ile-Ife and permission was also obtained from the Head of each Department and other administration. In addition, respondents gave informed consent before the commencement of the study.

RESULTS

Table 1 presents the socio-demographic distribution of the respondents. It showed that majority of the respondents were female (60.9%), More than half (55.7%) of them were within age range of 31-40, while 76.6% were married and Yoruba were the predominant ethnic group (92.7%) . Also, 52.6% of the respondents were nurses; the table further showed that (34.4%) had 1-5years of work experience.

Table 2 showed the summary of knowledge of respondents by their profession and depicted that majority (99.5%) of the respondents had good knowledge about HBV infection. Of all the health workers included in the study, only 0.5% of the attendant had poor knowledge.

Table 3 showed that all (100%) of the respondents indicated that hepatitis B is preventable by vaccination. Majority (98.4%) of the respondents signified that vaccine is effective against HBV, and that wearing of protective materials could prevent HBV infection (97.9%). Also, 86.5% agreed that hand washing (91.1%) and lotions such as jik could prevent HBV infection.

Table 4 showed that majority (85.4%) of the respondents had been tested for hepatitis B virus. Meanwhile, almost three-quarter (70.8%) had received HBV vaccine. While near to half of the respondents (46.4%) had completed the 3 doses of HBV vaccine, more than a quarter (29.2%) had never received hepatitis B vaccine.

Table 5 showed that majority (87.5%) opposed that non-availability of hepatitis B vaccine is a barrier preventing health workers from taking hepatitis B vaccination in the institution. Majority (76.0%) agreed that cost of vaccine is a barrier to HBV prevention. 70.8% disagreed with the protocol for the needle stick injury as a barrier. Half (50.5%) signified that fear of

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needle prick during vaccination as a barrier, while majority (90.6%) opposed adverse reaction as a barrier to hepatitis B prevention.

Table 6: Association between Academic Qualification and Knowledge on HBV Infection

Variables		Knowledge Level		Total	
		Poor	Good		
Academic Qualifications	SSCE	1	5	6	X2 = 31.162
	OND/HND	0	35	35	Df = 8
	RN/RM/RPON/RAEN	0	68	68	Exact P value =
	BNSC	0	34	34	0.001
	MBBS	0	23	23	
	MSC	0	7	7	
	B.PHARM	0	10	10	
	BMLS	0	8	8	
	BMR/B.PHY	0	1	1	
Total		1	191	192	

Table 6 showed that all the respondents had good knowledge, except the lowest academic qualification (SSCE) with poor knowledge. Pearson Chi square test indicates a significant association between academic qualification and HBV infection ($X^2 = 31.162$, df = 8, P = 0.001).

Table 7: Association of knowledge and Years of Experience of respondents and their practice of prevention of Hepatitis B infection

		Practice			Total	
		poor	fair	good		
Knowledge	Poor	0	0	1	1	X^2= .644[a]
	Good	9	66	116	191	Df = 2
Total		9	66	117	192	P= .725

Table 7 shows the association of knowledge and years of experience of the respondents and practice of hepatitis B prevention. Pearson Chi square test indicates no significant relationship ($X^2 = .644$, df = 2, P = 0.725). We therefore conclude that there is no significant relationship between the knowledge of respondents and their practice of prevention of HBV infection.

Table 8: Association between years of experience and Practice of prevention of Hepatitis B infection

		Level of Practice			Total	
		Poor	Fair	Good		
Years of experience	1-5 years	3(33.3)	30(45.5)	33(28.2)	66(34.4)	X^2= 15.066[a]
	6-10 years	1(11.1)	15(22.7)	45(38.5)	61(31.8)	Df = 8
	11-20 years	2(22.2)	13(19.7)	21(17.9)	36(18.8)	P= .056
	21-30 years	2(22.2)	4(4.1)	16(13.7)	22(11.5)	
	≥30 years	1(11.1)	4(6.1)	2(1.7)	7(3.6)	
Total		9(100)	66(100)	117(100)	192(100)	

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Table 8 shows there is no significant relationship between years of experience and practice of prevention oh HBV Infection (X^2 = 15.066, df = 8, P = 0.056).

DISCUSSION

The socio- demographic distribution of the respondents revealed that more than half (55.7%) of the respondents were within age range of 31-40years. More than three quarter (76.6%) were married and Yoruba were the predominant ethnic group (92.7%). Academic qualifications obtained by more than one-third were RN/RM/RPON/RAEN. More than half (52.6%) of the respondents were nurses, and 34.4% had 1-5years of experience. The study revealed that majority (99.5%) of the respondents had good knowledge about HBV infection, This is similar to Abiola, et al, (2013) who reported in a study among health workers at the Lagos State that majority (70.2%) had good knowledge of hepatitis B infection and vaccination and the mean knowledge score (%) was 61.2 ± 20.7, this is less than 99.5% found in this study. Similarly. findings by Oyewusi, et al (2015) showed that 65.2% of health workers had good knowledge about hepatitis B prevention.

Findings from this study also revealed that, majority (99%) of the respondents had good knowledge on prevention of HBV infection. This conforms with Muller et al (2015), who reported that vaccines against Hepatitis B is 95% effective in preventing the infection and the development of chronic disease and liver cancer. Also, all the respondents in this study agreed that hepatitis B is preventable by vaccination and majority (80%) perceived that vaccine, wearing of protective materials, hand washing and lotions can prevent HBV infection. This supports assertions of Molinari (2003) that hepatitis B can be prevented by practicing standard precautions such as regular personal hygiene, use of protective barriers and by proper disposal of sharps, body fluids and other clinical wastes in health care institutions.

Furthermore, the study showed that majority (60.9%) had good practice, while 34.4% had fair practice of prevention of hepatitis B infection. Majority (85.4%) of the health workers had been tested for hepatitis B virus before and less than three-quarter had received HBV vaccine, this reflects a good practice. This is contrary to the result of Abiola, et al, (2013), who reported poor practices among respondents of up to 84.5%. 46.4% of healthcare workers in this study had completed the 3 doses of HBV vaccine, more than a quarter (29.2%) had none. This is close to 24% of the health Workforce reported worldwide that remain unvaccinated against HBV (Malewezi, *et al* 2016). Similar study carried out among Hong Kong adult Chinese population showed that 26% had HBV vaccination (Chunk, 2012). Also from the study, Availability of hepatitis B vaccine was not a barrier in this study as majority (87.5%) of HCWs signified that it is available in the hospital. This also opposes Abiola, et al, (2013) who reported that 67.6% gave non-availability of vaccine the reason for poor practice of HBV prevention. 76% indicated that the cost of the vaccine is a barrier, while 50.5% indicated that fear of needle prick during vaccination as a barrier.

CONCLUSION

The study concludes that despite the knowledge possessed by health care workers in this setting, the uptake of vaccination still leaves much to be desired owing to the good number who had not been vaccinated. Efforts should be intensified to ensure clear and concise

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immunization policies, and also effective monitoring should be put in place to ensure compliance at all government health facilities.

Implications of the study

The health status of a care provider is directly linked to the quality of care delivered. Hepatitis B affects the quality of care delivered. It is however important that attention should be given to factors that predispose health workers to hepatitis B infection care. The lack of compliance to hepatitis B vaccination among health workers calls for concern among stakeholders seeing that the only way to prevent hepatitis B infection among health workers is through effective vaccination programmes and adherence to universal precaution which often times cannot be guaranteed. There is need for increased awareness of the health workers on the availability and importance of vaccination as it is crucial in preventing hepatitis B infection. Nurses and other stakeholders should advocate for the provision of personal protective equipments in various health institutions to prevent hepatitis.

Recommendations

Based on the findings of from this study, a gap exists between the knowledge and practice of prevention of hepatitis B infection; hence the following recommendations were made:

- A significant number of health workers had poor practice of hepatitis B virus prevention, hence compulsory vaccination of HCWs and monitoring immune responses to the vaccine is recommended.
- Promotion of accessibility to vaccines against relevant vaccine preventable diseases in the healthcare facilities are hereby suggested, these can be subsidized for the health workers.
- Further studies with the aim of increasing the scope of this study are hereby recommended.

Table 1: Socio-demographic Characteristics *(n= 192)*

Variables		**Frequency**	**Percent**
Age	20-30	34	17.7
	31-40	107	55.7
	41-50	22	11.5
	51-60	29	15.1
	Total	192	100.0
Sex	Male	75	39.1
	Female	117	60.9
	Total	192	100.0
Marital status	Single	39	20.3
	Married	147	76.6
	Widow/widower	6	3.1
	Total	192	100.0
Ethnicity	Yoruba	178	92.7
	Igbo	11	5.7
	Others	3	1.6

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	Total	192	100.0
Academic qualifications	SSCE	6	3.1
	OND/HND	35	18.2
	RN/RM/RPON/RAEN	68	35.4
	BNSC	34	17.7
	MBBS	23	12.0
	MSC	7	3.6
	B.PHARM	10	5.2
	BMLS	8	4.2
	BMR/B.PHY	1	.5
	Total	192	100.0
Professions	Nurses	101	52.6
	Pharmacists	10	5.2
	Health attendant/technician	41	21.4
	Laundry workers	4	2.1
	Doctors	24	12.5
	Medical scientist	10	5.2
	Physiotherapists	2	1.0
	Total	192	100.0
Years of experience	1-5 years	66	34.4
	6-10 years	61	31.8
	11-20 years	36	18.8
	21-30 years	22	11.5
	30 years and above	7	3.6
	Total	192	100.0

Table 2; Summary of Knowledge on Hepatitis B Virus Infection by Profession.

		Professions (%)							**Total(%)**
		Nurses	**Pharm.**	**Health assistant**	**Laundry workers**	**Doctors**	**Medical scientist**	**Physio.**	
Knowledge	Poor	0	0	1(0.5)	0	0	0	0	1(0.5)
	Good	101(100)	10(100)	40(99.5)	4(100)	24(100)	10(100)	2(100)	191(99.5)
Total		101(100)	10(100)	41(100)	4(100)	24(100)	10(100)	2(100)	192(100)

Table 3: knowledge on Prevention of Hepatitis B Viral Infection

Variables	**Yes**	**No**
Is hepatitis B preventable by vaccination?	192(100.0%)	-
Do you think hepatitis B vaccine is effective against the virus?	189(98.4%)	3(1.6%)
Do you think wearing of protective materials like gloves, apron, and face masks when in contact with hospital equipment can prevent hepatitis B virus infection?	188(97.9%)	4(2.1%)
Do you think hand washing prevents hepatitis B virus?	166(86.5%)	26(13.5%)
Do you think lotions such as Jik and Savlon can help prevent hepatitis B virus infection?	175(91.1%)	17(8.9%)

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Table 4: Practice of Hepatitis B Prevention

Variables	Yes	No
Have you been tested for hepatitis B virus before?	164(85.4%)	28(14.6%)
If yes, when last? More than 2 years 1-2years Less than a year	 28 (17.1%) 50 (30.5%) 86(52.4%)	
Have you received hepatitis B vaccine?	136(70.8%)	56(29.2%)
How many doses have you received?		
None	56(29.2%)	-
1 dose	23(12.0%)	-
2 doses	24(12.5%)	-
3 doses	89(46.4%)	-

Table 5: Barriers Preventing Health Workers from Taking Hepatitis B Vaccination
Indicate the barriers to HBV prevention in your institution

Variables	No	Yes
Availability of vaccine	168(87.5%)	24(12.5%)
Cost of vaccine	46(24.0%)	146(76.0%)
Protocol for needle stick injury	136(70.8%)	56(29.2%)
Fear of needle prick during vaccination	95 (49.5%)	97(50.5%)
Adverse reaction to HBV vaccine	174(90.6%)	18(9.4%)

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