

ORIGINAL ARTICLE

Knowledge, Attitude and Practice Towards Hepatitis Virus Infection Prevention Among Healthcare Interns and Medical Students in A Tertiary Hospital, South-East Nigeria

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DISCLOSURE

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Abstract

Background: Hepatitis B and C viruses are common and preventable causes of liver disease. Health care workers are prone to infection by the hepatitis B and C viruses. In Nigeria there is no current guideline on vaccination of health care workers especially health care interns.

Objective: To determine the knowledge, attitude and practice of health care interns and students towards hepatitis virus infection prevention.

Methodology: This is a cross-sectional descriptive questionnaire-based study which was carried out among healthcare professional interns and medical students. Informed consent and ethical approval were obtained for this survey. Data entry and analysis was done using SPSS version 22 and appropriate descriptive statistics was applied.

Results: A total of 253 interns of several healthcare professional groups and medical students took part in the survey. The healthcare interns were 115 (45.5%) and medical students were 138 (54.5%). They were 112 males (44.3%) and 141 females (55.7%), with age range 18-40 years and mean age of 22.9± 3.2 years. The respondents that knew that both hepatitis B and C were infective in nature were 225 accounting for 90.7% of respondents. The respondents with good knowledge on the modes of transmission of hepatitis were over 90% for known modes of transmission while those that knew of mother to child transmission accounted for 77.6% (n=180). Regarding the attitude of the respondents toward hepatitis B and C, only 60.4% (n=148) thinks that they are at risk of getting hepatitis infection. Those that have not received any form of hepatitis B vaccination were 163 accounting for 65.4% (n=163/253) of respondents. A high percentage of the respondents 97.8% (n=223/253) knew hepatitis B and C can cause liver disease.

Conclusion: Despite a good knowledge of hepatitis B and C infectivity, attitude towards prevention of the infection was poor. The study reveals an urgent need for adequate and effective government and institutional policies towards prevention of viral hepatitis.

Key words: Hepatitis B, Hepatitis C, Prevention, Interns, South- East Nigeria.

INTRODUCTION

Viral hepatitis is a major global health challenge with more than 300 million patients chronically infected, causing over 1 million deaths per year.¹ Approximately 240 million persons are infected with chronic hepatitis B virus (HBV) while another 80 million persons are infected with chronic hepatitis C virus.¹ Nigeria is one of the countries with a high burden of viral hepatitis with a prevalence of 11% for hepatitis B and 2.2% for hepatitis C infections.²

Hepatitis B and C are common causes of liver disease. They are capable of causing diseases ranging from acute hepatitis, chronic hepatitis, liver cirrhosis to primary liver cell cancers (PLCC).¹ However, immunization and/ or early detection and treatment of hepatitis B virus will prevent these diseases.³ Newer curative therapies have also emerged for the treatment of hepatitis C virus infection.⁴

The Federal government of Nigeria included the hepatitis B vaccine in the expanded programme of immunization for all infants born from 2004 in a bid to reduce the prevalence of hepatitis B virus.⁵ However, there is no other program for the adult population or others who were born before the commencement of the program.

Health care workers are particularly prone to infection from the hepatitis B and C viruses via contact with body fluids of patients. Among the healthcare community, the medical students and healthcare professional interns may even be at higher risk of acquiring these viral infections as they are just learning to examine patients and to do some

procedures involving contact with patients' body fluids. They are also more likely to be less cautious compared to the older healthcare workers and less likely to observe universal precautions with resultant greater chances of having needle stick injuries.⁶

The American Advisory Committee on Immunization Practices recommended that healthcare workers belong to one of the groups of persons who should be vaccinated against hepatitis B virus.⁷ In Nigeria currently, there is no clear-cut government policy on vaccination of medical students and healthcare interns against viral hepatitis. Institutional policies on this subject varies across the country; while the policy of some health institutions makes provision for the vaccination of their medical students and healthcare interns, others do not.

This study therefore aims to determine the knowledge, attitude and practice of professional healthcare interns and medical students towards viral hepatitis prevention and also to determine their vaccination status. Information obtained from the study will add to the body of data for a nation-wide advocacy for hepatitis vaccination of healthcare workers at large.

METHODOLOGY

This is a cross-sectional descriptive study which was carried out among interns of several healthcare professional groups and medical students. Informed verbal consent was obtained from participants. Consecutive consenting participants who gave their consent were enrolled for the study. A self-administered questionnaire was used to

obtain information on socio-demographic characteristics, the knowledge of viral hepatitis B and C, attitude and practice of viral hepatitis preventive measures. Information on the hepatitis B vaccination status of the respondents was also obtained. The questionnaire was adapted from a similar study done in Northwest Ethiopia.⁸

The study was carried out during a one-day health campaign on hepatitis at Nnamdi Azikiwe University Teaching Hospital Nnewi. Nnamdi Azikiwe University teaching hospital is a tertiary teaching hospital located in Anambra State, South-East Nigeria. It serves the state as well as neighbouring states like Delta, Imo, Abia and Enugu States. Apart from offering expert care to patients, it also provides training for medical students and resident doctors in specialty areas such as internal medicine, paediatrics, obstetrics and gynaecology and surgery (orthopaedic, plastic, otorhinolaryngology, urology, neurosurgery, paediatrics surgery and general surgery). Currently, cadres of medical personnel such as anaesthetists, radiographers, physiotherapists, medical laboratory scientists and nurses also undergo training in the hospital.

Medical students in their clinical years (from 4th to 6th year) were recruited in the study as they were involved in clinical examinations and simple procedures like cannulation. Interns from several healthcare professional groups including house-officers (medical interns) nurses, medical lab scientists, pharmacists and physiotherapists who were at risk of contact with body fluids from patients were also recruited. Intern in this study refers to a graduate in a professional

field (such as medicine, pharmacy or medical lab sciences) gaining supervised practical experience.

The following operational definitions were used in this study for the scoring of knowledge, attitude and practices.

Good knowledge: if $\geq 70\%$ of respondents are able to answer the knowledge item question correctly. If not up to 70%, knowledge will be considered poor.

Positive attitude: if $\geq 70\%$ of respondents are able to answer the attitude item question correctly. If not up to 70%, attitude will be considered negative

Good practice: if $\geq 70\%$ of respondents are able to answer the practice item question correctly. If not up to 70%, practice will be considered as malpractice.

Ethical approval for the study was obtained from Nnamdi Azikiwe University Teaching Hospital Ethics Committee.

Data were analyzed using statistical package for social sciences (SPSS) version 21. Information obtained were presented with relevant tables and a figure.

RESULTS

A total of 253 interns of several healthcare professional groups and medical students were surveyed. The healthcare interns were 115 (45.5%) and medical students were 138 (54.5%). There were 112 males (44.3%) and 141 females (55.7%) with age range 18-40 years and mean age of 22.9 ± 3.2 years.

Table 1 shows the respondents knowledge of the nature of hepatitis and mode of transmission of viral hepatitis. Two hundred and twenty-five respondents accounting for 90.7% knew that both hepatitis B and C were infective in nature. The agreed modes of transmission were open wounds and cut by 95.3% (n=221) of respondents; through

contaminated blood and blood products 96.3% (n=236); via unsterilized syringes, needles and surgical instruments 97.6% (n=241); via unsafe sex 93.1% (n=230) and mother to child transmission 77.6% (n=180). The number of respondents that believe hepatitis is caused by witchcraft accounted for 19.8% (n=48).

Table 1. Knowledge of hepatitis and mode of hepatitis transmission

Questions	Yes (%)	No (%)	Total (%)*
Are Hepatitis B and Hepatitis C infective?	225 (94.5)	13 (5.5)	238 (100.0)
Can Hepatitis B and C be transmitted by contaminated blood and blood products?	236 (96.3)	9 (3.7)	245 (100.0)
Can Hepatitis B and C be transmitted by unsterilized syringes, needles, and surgical instruments?	241 (97.6)	6 (2.4)	247 (100.0)
Can Hepatitis B and C be transmitted by unsafe sex	230 (93.1)	17 (6.9)	247 (100.0)
Is Hepatitis transmitted by witchcraft?	48 (19.8)	194(80.2)	242 (100.0)
Can hepatitis be transmitted from mother to child	180 (77.6)	52 (22.4)	232 (100.0)
Can Hepatitis B and C be spread through casual contact?	53 (22.9)	178(77.1)	231 (100.0)
Can Hepatitis B and C be spread through contact with open wounds/cut?	221 (95.3)	11 (4.7)	232 (100.0)

*Represents the number of respondents to the specific question not the total number of respondents interviewed.

Table 2 shows the respondents knowledge on hepatitis detection, prophylaxis and treatment. The percentage of respondents that knew hepatitis is detected through laboratory test were 98.8% (n=247) and 98.0% (n=241) for hepatitis B and hepatitis C respectively. Those that know that hepatitis B can be prevented by vaccination were 219 accounting for 96.9% of respondents and those that know that hepatitis C cannot be prevented currently through vaccination were 33 accounting for 15.9% of respondents. The number of respondents that agreed that hepatitis B is treatable was 208 accounting for 87.4%, while

the number of respondents that agreed that hepatitis C is curable was 164 accounting for 71.3%.

Table 3 shows the attitudes of the respondents towards hepatitis infection. The number of respondents that agreed that they are at risk of getting hepatitis was 148 accounting for 60.4% of those that answered the question. Those that disliked touching and treating people with hepatitis were 179 accounting for 71.6% of those that answered the question. Those that agreed that patients should be tested for hepatitis before they receive health care were 172 accounting for 69.6% of the

respondents. Those that agreed that following control guidelines will protect them from hepatitis infection were 230 accounting for 93.5%.

Table 2. Knowledge of hepatitis detection, prophylaxis and treatment

Questions	Yes (%)	No (%)	Total (%)*
Can Hepatitis B be prevented through vaccination?	219 (96.9)	7 (3.1)	226 (100.0)
Can Hepatitis C be prevented through vaccination?	175 (84.1)	33 (15.9)	208 (100.0)
Does Hepatitis B have post exposure prophylaxis?	164 (73.5)	59 (26.5)	223 (100.0)
Does Hepatitis C have post exposure prophylaxis?	142 (64.0)	80 (36.0)	222 (100.0)
Is Hepatitis B treatable?	208 (87.4)	30 (12.6)	238 (100.0)
Is Hepatitis B curable?	164 (71.3)	66 (28.7)	230(100.0)
Can Hepatitis B and C cause liver cancer?	223 (97.8)	5 (2.2)	228 (100.0)

*Represents the number of respondents to the specific question not the total number of respondents interviewed.

Table 3. Attitude towards hepatitis virus infection

Questions	Agree	Disagree	Not sure	Total*
I am not at risk of getting Hepatitis	62(25.3)	148(60.4)	35(14.3)	245
I do not believe in Hepatitis B vaccine	19(7.6)	228(90.8)	4(1.6)	251
Changing of gloves during blood collection is a waste of time	13(5.3)	230(93.5)	3(1.2)	246
All patients should be tested for Hepatitis before they receive health care	172(69.6)	58(23.5)	17(6.9)	247
I do not like touching or treating people with hepatitis	52(20.8)	179(71.6)	19(7.6)	250
Following infection control guidelines will protect me from being infected with Hepatitis at work	230(93.5)	11(4.5)	5(2)	246

*Represents the number of respondents to the specific question not the total number of respondents interviewed.

Table 4 shows the respondents practice of hepatitis prevention measures. The number of respondents that have been screened for hepatitis B were 131 accounting for 52.6% while 79 respondents accounting for 31.9% of the respondents have been screened for hepatitis C. The respondents that have received at least a dose of Hepatitis B vaccine were 90 (35.4%) while 25 respondents accounting for 9.8% had received the

complete immunization against hepatitis B infection. About 41.6% (n=101) of the respondents have had a needle prick while 54.5% (n= 110) always report needle prick injury (Table 4).

Figure 1 shows the immunization status of the respondents. Those that have been fully immunized at the time of survey were 25 accounting for 9.9%; those that have received one or two doses of the Hepatitis B vaccine

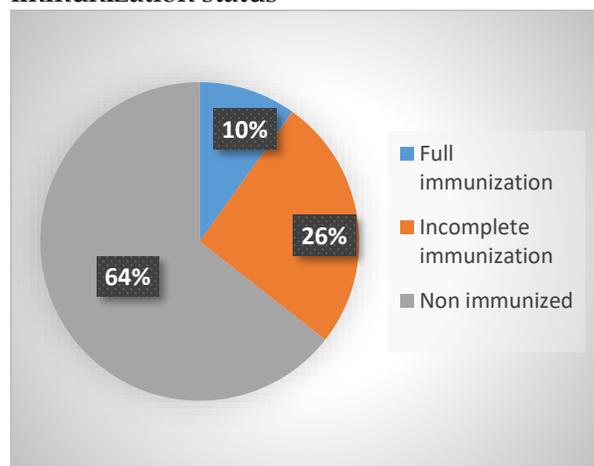
were 65 accounting for 25.7%. The remaining 163 respondents accounting for 65.4% have not had any form of hepatitis B vaccination.

Table 4. Practice of hepatitis prevention

Questions	Yes (%)	No (%)	Total (%)*
Have you been screened for Hepatitis B?	131(52.6)	118(47.4)	249(100.0)
Have you been screened for Hepatitis C?	79(31.9)	169(68.1)	248(100.0)
Do you change gloves for each patient during phlebotomy?	186(88.2)	25(11.8)	211(100.0)
Have you ever had a needle prick injury?	101(41.6)	142(58.4)	243(100.0)
I always report needle prick?	110(54.5)	92(45.5)	202(100.0)
Have you been vaccinated against Hepatitis B?	90(35.6)	163(64.4)	253(100.0)

*Represents the number of respondents to the specific question not the total number of respondents interviewed

Figure 1. A pie chart showing the hepatitis B immunization status



DISCUSSION

Healthcare professionals are constantly exposed to the risk of hepatitis B and C through exposure to blood and blood products and the risk is further increased for those practicing in Nigeria, a sub-Saharan country, with high endemicity for the hepatitis viruses. Health care workers are among one of the groups that have been recommended by the advisory committee on immunization practices comprising the

American academy of Pediatrics, American academy of family physicians and American

medical association as high risk groups that should be immunized.⁷

This study showed good knowledge of the participants about the infective nature of both Hepatitis B and C and their modes of transmission. This is understandable as the study was among healthcare interns and medical students. Further contributions from social media where a lot of awareness is now being created cannot be ruled out. This is comparable to other studies which have been carried out in other centers that documented good knowledge of viral hepatitis among population of medical students and other healthcare professional students in UPTH, Nigeria and a similar group in Gondar, Ethiopia.^{6,8} However, it was higher than the 56.2% knowledge levels recorded among medical and health science students at Haramaya University Ethiopia, 59% from Iraq and 14.5% from Lao DPR.^{12,13,14} These lower values obtained from these places may be accounted for by the different tool used to access knowledge levels unlike that used in this study and the other similar studies that had high knowledge levels.

It was also discovered that most of the respondents (84.1%, n=175) think that Hepatitis C is preventable through immunization while another 64% (n=142) think it has post exposure prophylaxis; this casts doubt on the reliability of their source of information.

Approximately 70% (n=172/247) of the participants believe that all patients attending the hospital for treatment should be screened for hepatitis B and C before accessing healthcare services. A similar pattern was observed in the study carried out in North West Ethiopia where 55.7% (137/246) of the respondents thought so too.⁸ While this may be a pointer to stigmatization, it may also be to determine the level of protection taken while attending to an infected patient. However, there may be no need to be worried about this as all the emergency points in the hospital are able to screen for these viruses within minutes of patient's arrival. Interestingly most of the participants believe the infection control guidelines will protect them from being infected with hepatitis B and C at work thereby showing good acceptance and positive attitude towards the practice of the infection control guidelines.

Furthermore, it was observed that about half of the respondents have screened for hepatitis B in the past while just about a third have previously screened for hepatitis C. This could be because most times, organizations offer free screening for only hepatitis B since it is preventable by vaccination.

It was also observed that there was high acceptance for the hepatitis vaccine in this study as was in another hospital-based study

done in Ile-Ife among different health care workers where 91.9% of the workers had received one dose of the vaccine and 53.8% had completed the three doses.⁹ The healthcare workers in that study probably had more knowledge of the vaccine due to their number of years in the profession and they are also financially able to afford the vaccines.

Unlike the study done in Ile-Ife however, there was poor practice of hepatitis prevention among the study respondents as just 9.9% of the respondents were fully immunized. It is also similar to the low vaccination rate of 19.2% in Niger Delta University.¹⁰ This figure is lower than 34.8% obtained in University of Port-Harcourt Teaching Hospital South Nigeria.⁶ It was interesting and encouraging to note that the dental surgeons had a relatively high vaccination rate of 51.8%.¹¹ It is higher than 2% reported in North-West Ethiopia and this is accounted for by the difficulty encountered in transporting the vaccine from the capital to remote areas.⁸

This study showed high awareness of hepatitis B vaccine but poor practice of immunization similar to the study carried out by Okeke *et al.* among medical students in University of Jos with 91.6% (317/346) being aware of the availability of vaccine while only 42% were vaccinated.¹⁵ This could be related to the carefree nature of students and possible financial constraints although most of the medical students in Jos cited lack of opportunity as the reason. In this study about 41.6% (101/243) respondents had previous needle prick injury but only 54.5% (110/202) always reported the needle prick injury. This

is similar to what was obtained in university of Jos with 48.6% of the students having had previous needle stick injury.¹⁵

This low level of immunization seen in this study is of concern because immunization apart from being a means to prevent the development of hepatitis B infection and its chronic sequela, non-immunized healthcare workers can also serve as vehicles for the transfer of the infection to patients.

CONCLUSION

Knowledge about the infective properties of both hepatitis B and C and the modes of transmission were high among the study participants. However, participants had poor knowledge of the modes of detection and prevention of hepatitis B and C. Public lectures as well as other routes of information dissemination should be employed to increase awareness. Institutional based policies making immunization against viral hepatitis mandatory for healthcare interns and medical students in their clinical years should be encouraged.

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