



Knowledge, Attitude and Uptake of Hepatitis B Vaccine among Clinical Medical Students of a Tertiary Institution in Southeast Nigeria

N. C. Eze^{1*}, E. C. Egba², J. E. Ogbanna², S. N. Nwamini², P. U. Nweke² and J. S. Amasiyanya²

¹Department of Community Medicine, Federal Teaching Hospital, Abakaliki, Ebonyi State, Nigeria.

²Department of Community Medicine, Ebonyi State University, Abakaliki, Ebonyi State, Nigeria.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

Editor(s):

(1) Dr. Wagner Loyola, Canada.

Reviewers:

(1) Sandi Alfa Wiga Arsa, Indonesia.

(2) Nathalia Costa Gonzaga Saraiva, Federal University of Paraiba, Brazil.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/57925>

Original Research Article

Received 06 April 2020

Accepted 13 June 2020

Published 24 June 2020

ABSTRACT

Background: Hepatitis B virus infection is a global public health problem especially in developing countries like Nigeria. Good knowledge of Hepatitis B virus, its infection and positive attitude by the public are key to the prevention of Hepatitis B infection. The infection can be prevented with Hepatitis B virus vaccine. This study aimed at assessing the Knowledge, Attitude and Uptake of Hepatitis B virus vaccine among Clinical Medical Students of Ebonyi State University, Abakaliki.

Materials and Methods: The study is descriptive cross-sectional in design and comprised of 187 Clinical Medical Students selected by consecutive sampling technique. Data was collected using pretested, semi-structured, self-administered questionnaires and analysed using Statistical Package for Social Sciences (SPSS) for Microsoft window version 22.

Results: The mean age of the respondents was 25.6 ± 3.2 years. About 80.7% of the respondents (Clinical Medical Students of EBSU) had good knowledge of HBV infection. Also, all the respondents (100%) had good knowledge of HBV vaccine. Nearly, 74.3% of our respondents were concerned about being infected with HBV. However only 55.6% of them had tested for HBV surface

*Corresponding author: E-mail: ezenelson24@gmail.com;

antigen. Also 84.2% of the respondents said they would like to be vaccinated. Although the participants in this study had positive attitude towards HBV vaccination, only 29.4% of the respondents had received HBV vaccine. Most of those vaccinated received incomplete doses of the vaccine while only very few received complete doses of the vaccine.

Conclusions: There should be sustained health education to Clinical Medical Students on the need to be vaccinated against HBV and also HBV vaccine should be made free to the general public so as to remove the challenge created by cost.

Keywords: Knowledge; attitude; uptake; HB vaccine; clinical medical students; Abakaliki.

1. INTRODUCTION

Hepatitis B virus (HBV) infection is a global public health problem, especially in developing countries. Globally, over 2 billion people have been infected with HBV, and there are over 350 million carriers [1]. Good knowledge of Hepatitis B virus, its infection and positive attitude by the public are key to the prevention of Hepatitis B infection.

HBV infection poses a health risk to health care workers who are in close proximity to infected individuals and their bodily fluids [2]. Medical students in tertiary health institutions are particularly high-risk group in the current literature [2].

Hepatitis B is a serious blood born infection caused by hepatitis B virus (HBV). It is the most common cause of chronic hepatitis, liver cirrhosis and hepato-cellular carcinoma [3-5].

HBV is spread through body fluids such as blood, vaginal secretions, semen. Its routes of infection include sexual intercourse, unintentional needle sticks or using of infected needles, organ transplantation and blood transfusions [6]. Infected pregnant women can also transmit the infection to their newborns during delivery [7].

WHO recommends that everybody belonging to an already identified high-risk group should be vaccinated. Some of these high-risk groups include: people who frequently require blood and/or blood products, dialysis patients, people interned in prisons, intravenous drug users, people with multiple sexual partners, healthcare workers, household and sexual contacts of people with chronic HBV infection [7]. The infection can be prevented with Hepatitis B vaccine uptake [7]. Good knowledge of Hepatitis B virus, its infection and positive attitude by the public are key to its prevention. This study therefore determined knowledge, attitude and

uptake of HBV vaccine among clinical medical students of EBSU.

2. MATERIALS AND METHODS

A descriptive cross-sectional design was used for the study. The study population comprised Clinical Medical Students of EBSU. A minimum sample size of 168 respondents was calculated using the formula: $n = z^2pq/d^2$. However, to allow for 10% non-response rate, a sample size of 187 was used. Consecutive sampling technique was used for subject selection. Ethical approval was obtained from the Research and Ethics Committee (REC) of EBSU. Consent was obtained from the respondents. Data was collected using pretested, semi-structured, self-administered questionnaires and analyzed using Statistical Package for Social Sciences (SPSS) for Microsoft window version 20. Data collection lasted for four weeks (July 2019).

3. RESULTS

Table 1 showed that the mean age of the respondents was 25.6 ± 3.2 years. Fifty seven point two percent (57.2%) of the respondents were within age range of 18-27 years with a significant proportion (89.8%) being single. Table 2 below showed that a significant proportion of respondents (88.2%) have heard of HB vaccine. About 80.7% and 69% of the respondents knew that HB infection is caused by virus and the best way of prevention is by vaccination respectively. In Table 3 below, Majority (74.3%) of the respondents were worried about being infected with HBV. However, only 55.6% have been tested for HBV surface antigen. Also, 89.8% of the respondents expressed willingness to be vaccinated. In Table 4 below, only 29.4% of the respondents had received HB vaccine. Majority (64.2%) have not received HBV vaccine. About 55.8% gave 'not readily accessible' as reason for not been vaccinated.

Table 1. Socio-demographic characteristics of respondents (n=187)

Age group (years)	Frequency	Percentage
18-27	107	57.2
≥ 27	80	42.8
Mean age (25.6 ± 3.2 years)		
Sex		
Male	104	55.6
Female	83	44.4
Marital status		
Single	168	89.8
Married	19	10.2
Class level		
400	85	45.5
500	81	43.3
600	21	11.2

Table 2. Awareness and knowledge of Hepatitis B virus vaccine (n=187)

Have you heard of HBV vaccination	Frequency	Percentage
Yes	165	88.2
No	16	8.6
Don't know	6	3.2
HBV is a viral infection		
Yes	151	80.7
No	36	19.3
Source of information		
Hospital	65	34.8
Newspaper/Television/Radio	15	8.0
Workplace	5	2.7
School	102	54.5
Best way of preventing HBV is by vaccination		
No	58	31.0
Yes	129	69.0

Table 3. Attitude towards HBV Infection and its vaccination (n=187)

Worried about being infected by HBV	Frequency	Percentage
Yes	139	74.3
No	36	19.3
Don't know	12	6.4
Tested for HBV		
Yes	104	55.6
No	77	41.2
Don't know	6	3.2
Would like to be vaccinated against HBV		
Yes	168	89.8
No	6	3.2
Don't Know	13	7.0

4. DISCUSSION

Awareness and knowledge assessment in this study showed that a significantly high proportion of the respondents were aware of HB vaccine and a large proportion also had good knowledge of Hepatitis B vaccine. This proportion of

respondents with good knowledge may be due to their daily participation in educational programs on Hepatitis B virus infection and prevention within and outside the academic setting as quite above half of the respondents got their information from the school. This finding is in agreement with the findings in another study at

Table 4. Uptake of HBV vaccine

Have you been vaccinated against HBV	Frequency	Percentage
Yes	55	29.4
No	120	64.2
Don't know	12	6.4
If not vaccinated, reasons for not being vaccinated (n=120)		
Expensive	17	14.2
Not readily accessible	67	55.8
Not interested	22	18.3
Others	14	11.7
Reasons for being vaccinated (n=55)		
It was free	22	40.0
Fear of being infected	17	30.9
Advice from friend doctor	16	29.1
No of doses received (n=55)		
1 dose	26	47.3
2 doses	24	43.6
3 doses	5	9.1

Irua, Nigeria [8] and also comparable with the results of two other separate studies in Osun [9] and Lagos [2] both in Western Nigeria. It is however at variance with the findings in similar studies done at University of Jos [10] in Cameroon among medical students [11]. Poor knowledge was also reported among medical and health science students in a study done at Haramaya University, Ethiopia [4]. The findings in this study are however in contrast with two other separate studies done in India [12].

A good knowledge of HB virus, its modes of infection as well as adequate vaccination may reduce infection rate. Studies carried out among health care workers in Sudan and Morocco revealed that most of them knew blood as a medium of infection but lacked adequate vaccine coverage. Inadequate knowledge of HBV among health workers may reflect their behavioural pattern to vaccination and safety measure [5,9].

In India, a study revealed that majority of the third year students knew about the vaccine type, vaccination schedule, type of syringes, route of administration, safe disposal of syringe and needles and other preventive strategies. On the contrary, very few second year students had correct knowledge regarding the same [12].

Among medical students at Northern Border University, Arar Kingdom of Saudi Arabia, a study showed that a significantly large proportion knew that vaccine could prevent HBV infection [13], but at variance with those in North West Ethiopia where a large proportion of the respondents were aware that they are at risk of

contracting HBV and believed that HBV vaccine is effective and safe [14,15].

Vaccine uptake and immune response to HBV infection study done in southwest region of Cameroon revealed that health care workers though few were the most vaccinated. Upon assessing the reasons for not being vaccinated, lack of awareness was topmost. Some of the participants had never heard about hepatitis B infection while others were not aware there was a vaccine against HBV infection. This automatically implies that there is low sensitization coverage on HBV infection in Cameroon despite the high HBV prevalence in the country. Although health care workers topped the number of vaccinated cases among the study groups, majority of them were still not vaccinated despite their awareness [16].

Significantly high proportion of the respondents in this study affirmed they would like to be vaccinated. However, a large proportion were concerned about being infected by HB virus. This positive attitude could be adduced by their good knowledge of HBV infection and vaccine. These findings were comparable with the result of a study done in Iran [17] but however in discordance with the findings in other studies carried out in Port-Harcourt [18] and Jos [10].

Although, a significantly large proportion of respondents in this study had positive attitudes towards HBV vaccination, only few had received HBV vaccine.

This low level of uptake may due to unavailability and expensive nature of the vaccine. These

findings (reasons) were at variance with the results of studies done in Greece [19] and Iran [17] but comparable with the findings from other similar studies done in Port-Harcourt [18], Irua [14] and Jos [20] on the uptake of HBV vaccine. These variations in Greece and Iran could be due to better availability and accessibility of HBV vaccine among respondents.

5. CONCLUSIONS

This study found good knowledge among the respondents. There was positive attitude towards HBV vaccination among the respondents. However, uptake of HBV vaccine was poor. More intensive health education programs for the clinical medical students and indeed the general public on the need to be vaccinated against HBV is recommended. The HBV vaccine should be subsidized and/or made free to ameliorate the barrier created by cost. HBV infection is of public health importance in Nigeria. Health workers and clinical medical students who are at high risk of the infection should be tested and vaccinated against HBV infection accordingly.

CONSENT AND ETHICAL APPROVAL

Ethical approval was obtained from the Research and Ethics Committee (REC) of EBSU. Consent was obtained from the respondents. Data was collected using pretested, semi-structured, self-administered questionnaires and analyzed using Statistical Package for Social Sciences (SPSS) for Microsoft window version 20. Data collection lasted for four weeks (July 2019).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Alshammari MS, Alshamari NG, Alshammari AS, Kareem M. Electronic Physicians. 2017;(9):5388–94.
2. Algadheeb AS, Al-alsheikh AS, Al-hamoudi WK, Alswat KA. Medical students' awareness of and compliance with the hepatitis B vaccine in a tertiary care academic hospital: An epidemiological study. *J Infect Public Health* 2016;9:60-65.
3. Bello FM, Health P, Anne CP. Health Workers' knowledge, attitude and practice towards Hepatitis B Infection in Northern Nigeria. 2017;9(3):939–54.
4. Mesfin YM, Kibret KT. Assessment of knowledge and practice towards Hepatitis B among Medical and Health Science Students in Haramaya University, Ethiopia. *Scientific Research Publishing*. 2013; 8(11):1–6.
5. Reddy RS, Swapna LA, Ramesh T, Pradeep K. Knowledge, attitude and practice on hepatitis B prevention among dental professionals in India. *Pan African Medical Journal*. 2011;10(4).
6. Mohammed A, Aldeen Z, Alelyani AM, Alshammari KS, Abdulaziz M, Alsaif B, et al. Assessment of knowledge, attitudes and practices toward prevention of Hepatitis B virus infection among medical students in Hail Region, Saudi Arabia *Sky Journal of Medicine and Medical Sciences*. 2017;3(4):31–5.
7. Taher HA, Mansuri S. Hepatitis B infection control knowledge and practice of undergraduate students at college of dentistry, Madinah, Saudi Arabia. *BMC*. 2015;3(4):47–51.
8. Kesieme EB, Uwakwe K, Irekpita E, Dongo A, Bwala KJ, Alegbeleye BJ. Knowledge of Hepatitis B vaccine among operating room personnel in Nigeria and Their Vaccination Status. *Hepat Res Treat*. 2011;2011:7–12.
9. Adekanle O, Ndububa DA, Olowookere SA, Ijarotimi O, Ijadunola KT. Knowledge of hepatitis B virus infection, immunization with hepatitis B vaccine, risk perception, and challenges to control hepatitis among Hospital Workers in a Nigerian Tertiary Hospital. *Hepat Res Treat*. 2015;2015:1–6.
10. Daboer JC, Chingle MP, Banwat ME. Knowledge, risk perception and vaccination against Hepatitis B infection by Primary Healthcare Workers In Jos, North Central Nigeria. *Pan African Medical Journal*. 2017;6–10.
11. Noubiap JJN, Nansseu JRN, Kengne KK, Ndoula ST, Agyingi LA. Occupational exposure to blood, hepatitis B vaccine knowledge and uptake among medical students in Cameroon. *Open Access*; 2013.
12. Singh A, Jain S. Prevention of Hepatitis B-knowledge and practices among medical students. *BMC*. 2012;(2):52–6.
13. Reang T, Chakraborty T, Sarker M, Tripura A. A study of knowledge and practice regarding Hepatitis B among nursing students attending tertiary care hospitals in Agartala city. *International Journal of Research in Medical Sciences* 2015;3(7): 1641–9.

14. Abdela A, Woldu B, Haile K, Mathewos B, Deressa T. Assessment of knowledge, attitudes and practices toward prevention of hepatitis B virus infection among students of medicine and health sciences in Northwest Ethiopia. *BMC Res Notes*. 2016;1–7.
15. Demsiss W, Seid A, Fiseha T. Hepatitis B and C: Seroprevalence, knowledge, practice and associated factors among medicine and health science students in Northeast Ethiopia. *Plos One*. 2018;1–12.
16. Meriki HD, Tufon KA, Anong DN, Tony J, Kwenti TE, Bolimo AF, et al. Vaccine uptake and immune responses to HBV infection amongst vaccinated and non-vaccinated healthcare workers, household and sexual contacts to chronically infected HBV individuals in the South West Region of BMC. 2018;185:1–18.
17. Alavian SM, Mahboobi N, Savadrudbari MM, Azar PS, Daneshvar S. Iranian dental students' knowledge of hepatitis B virus infection and its control practices. *World Journal of Vaccines*. 2011;12:1627–34.
18. Paul N, Peterside O. Hepatitis B Vaccination rate among medical students at the University of Port Harcourt Teaching Hospital (UPTH). *World Journal of Vaccines*. 2015;(2):1–7.
19. Papagiannis D, Tsimtsiou Z, Chatzichristodoulou I, Adamopoulou M. Hepatitis B virus vaccination coverage in medical, nursing and paramedical students: *BMC*. 2015;8(5):1–9.
20. Fufore MB, Cook PA, Kirfi AM. Health workers' knowledge, attitude and practice towards hepatitis B infection in Northern Nigeria. *International Journal of Caring Sciences*. 2016;9(3):939-54.

© 2020 Eze et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://www.sdiarticle4.com/review-history/57925>