

Attitudes of Nigerian dentists towards hepatitis B vaccination and use of barrier techniques

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Summary

Objective: Hepatitis B virus constitutes a significant threat to the health of the dental professional. Infection with hepatitis B virus can however be prevented through hepatitis B vaccination and use of barrier techniques. This study therefore assesses the attitudes of Nigerian dentists towards hepatitis B vaccination and use of barrier techniques.

Materials and Method: A questionnaire survey of 160 dental practitioners in Lagos, Ibadan, Ife and Benin.

Result: 48.1% had complete vaccination, 3.1% incomplete vaccination and 48.8% no vaccination. 97.5% reported routine use of gloves and 70.6% reported routine use of masks. 61.3% and 23.1% reported routine use of protective gowns and eyewear respectively.

Conclusion: There is need to improve the rate of hepatitis B vaccination among Nigerian dentists and to encourage consistent use of barrier techniques.

Key-words: Attitudes, Dentists, Hepatitis B vaccination, Barrier techniques.

Résumé

Objectif: Virus Hépatite B constitue une menace importante pour le bien être de la profession dentaire. Toutefois, on peut éviter une infection de Virus Hépatite B à travers une vaccination contre hépatite B et l'utilisation des techniques de la barrière. Donc cette étude fait une évaluation des comportement des dentistes nigériens envers la vaccination contre hépatite B et l'utilisation de la méthode de barrère.

Matériels et méthode: Une étude à travers un questionnaire de 160 praticiens dentaire à Lagos, Ibadan, Ife et Benin.

Résultat: 48,1% avaient une vaccination complète, 3,1% vaccination incomplète et 48,8% aucune vaccination. 97,5% ont annoncé l'utilisation de routine des gants et 70,6% ont annoncé l'utilisation de routine des masques. 61,3% et 23,1% avaient annoncé l'utilisation de routine de la blouse de sécurité et des lunettes respectivement.

Conclusion: C'est nécessaire d'améliorer le taux de la vaccination de Hépatite B parmi les dentistes nigériens et d'encourager l'utilisation continue de la méthode de la barrière.

Introduction

Hepatitis B virus (HBV) has been recognized as an occupational hazard for dentists for several decades.^{1,2,3,4} Several studies have shown that dentists can contract Hepatitis B virus through accidents or lapses in patient care delivery.^{1,2,3,4} The dentist has three times the risk of acquiring hepatitis B compared to the general population.¹⁻³ Furthermore, 0.04-0.06 percent of dental health care workers are reported to be HBV carriers.⁵ Minute quantities of blood

(less than 0.0000001ml) have been reported to transmit the disease.⁶

In Nigeria, however, there is little or no information on hepatitis B vaccination and use of protective barriers among dentists. This study therefore assesses attitudes of Nigerian dentists towards hepatitis B vaccination and use of barrier techniques.

Materials and Methods

This study was carried out in four major cities in Nigeria namely Lagos, Ibadan, Ife and Benin. The sample comprised of residents in various dental specialties, specialists and general practitioners from teaching hospitals, general hospitals, military and naval hospitals and private dental clinics. Pre-structured questionnaires were hand-delivered to the dentists. Some were collected back immediately while others were returned within 12 weeks. Information on demographic data, perception of listed occupational hazards, hepatitis B vaccination and use of protective barriers were sought. Data was analysed using the EPI info 6 software.⁷

Results

Questionnaires were distributed to 200 dentists. One hundred and sixty dentists returned properly filled questionnaires (response rate of 80.0%). Eighty-five (53.1%) were males while seventy-five (46.9%) were females. Their ages ranged from 26 to 60 years, with a mean of 34.6±7.17 years (Table 1). Table 2 shows the years of professional experience. One hundred and twelve (70%) of the respondents perceived Hepatitis B virus infection as the greatest hazard in the dental environ-

Table 1 Distribution of respondents by age

Age	Frequency	Percent
26-30	59	36.9%
31-35	53	33.1%
36-40	14	8.8%
41-45	19	11.8%
46-60	15	9.4%
	160	100%

Mean age = 34.6 ± 7.17

Table 2 Distribution of respondents by years of practice

Years of practice	Frequency	Percent
1-5	73	45.6%
6-10	41	25.6%
11-15	13	8.1%
Over 16	33	20.6%
	160	100%

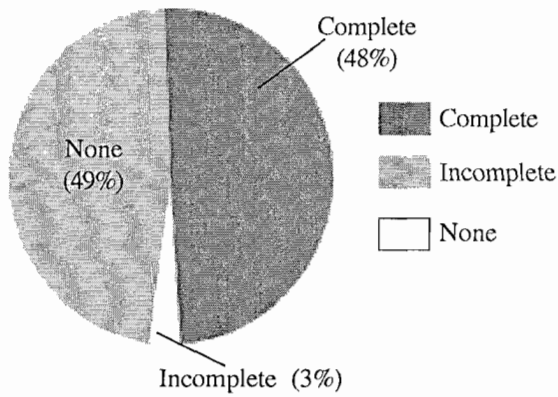


Fig. 1 Hepatitis B vaccination

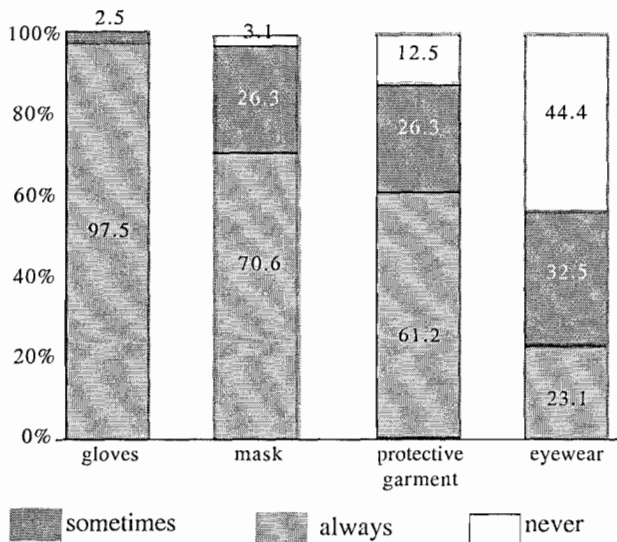


Fig. 2 Use of barrier techniques

ment. Forty-five (28.1%) others perceived HIV as the greatest hazard while three (1.9%) were concerned about other infections. Seventy-seven of the respondents had complete vaccination, giving an immunization rate of 48.1%. Five (3.1%) had incomplete vaccination and 78 (48.8%) no vaccination (Fig.1). Reasons for non-vaccination included high cost (7.2%), insensitivity to risk (45.8%), non-availability of vaccines (19.5%), inertia (22%), pregnancy (1.2%) and fear of complications (2.4%). 97.5% of the dentists indicated routine use of gloves and 70.6% routine use of masks. 61.3% and 23.1% of the dentists reported routine use of protective gowns and eyewear respectively. Fig.2 shows the frequency of use of barrier techniques.

Discussion

The mode of transmission of Hepatitis B virus may be percutaneous or non-percutaneous. A percutaneous exposure is the most likely route for transmission of HBV to the dentist. The dentist frequently works with rotating and sharp instruments in the clinic. Therefore, the risk of sustaining percutaneous injuries by the dentists is high. Non-percutaneous transmission involves the transfer of body fluids such

as blood, saliva and crevicular fluid. Dental procedures often cause splatter of body fluids which may contaminate the face, clothing, equipments and work surfaces.¹

Although the patient may become infected through injection or by trauma from dental manipulation and surgery, transmission of HBV in dental practice is mainly from patient to staff and rarely from dentist to patient.⁸ However, transmission of HBV from dentist to patient has been reported though few.^{9,10}

Viral hepatitis caused by HBV is a disease that has no oral manifestation but is of great concern to the dental profession due to the ease of transmission of the virus from patients with the condition. It may be difficult to identify those capable of transmitting HBV for several reasons. Many patients infected with hepatitis B virus may be unaware of their carrier status or they may be asymptomatic.¹¹ Others may not want to disclose their infectious status.

Hepatitis B virus infection is now prevalent in every part of Nigeria.^{12,13} The prevalence in healthy population in Nigeria is estimated to be 15%.^{12,13} In sub-Saharan Africa, Hepatitis B virus is the major aetiologic agent of chronic hepatitis the ultimate sequelae of which may be liver cirrhosis and hepatocellular carcinoma.^{12,13} HBV is responsible for more than 90% of cases of hepato-cellular carcinoma. Furthermore, the clinical course of the infection is so insidious and silent that some patients present with the terminal phases of the disease on their first hospital attendance.¹⁴ It is therefore imperative that appropriate measures and interventions be instituted to prevent and control hepatitis B infection. Such measures include strict adherence to infection control procedures, especially use of protective barriers and hepatitis B vaccination.

Since 1981, when the hepatitis B vaccine became available, attempts have been made in different parts of the world to encourage vaccination among dental professionals.^{15,16,17,18} A survey conducted in London indicated that 75% of dentists had been vaccinated against HBV.¹⁷ In Saudi Arabia, only 25.3% of dental specialists and 14.4% of dental practitioners had been vaccinated against HBV.¹⁸ Previous studies have indicated increasing use of protective barriers by dentists.^{18,19} al-Ruhaimi¹⁸ reported the use of gloves by 95% of dentists in Saudi Arabia. In the Caribbean, gloves and facemasks were worn by 97% and 76% of dentists respectively.¹⁹

Dentists are at the top of the list of HBV high risk populations.⁴ Studies in the United States have reported a prevalence rate of 6.7-13.6% among dentists.^{1,20} The dentist is at high risk due to the type of instruments used, the procedures performed, frequent exposure to blood and other body fluids and the susceptibility to injury. This risk can be reduced however by hepatitis B vaccination and effective use of protective barriers.

Previous studies have documented poor attitude of dentists towards protection from HBV infection.^{4,18} In this study, 70% of the dentists perceived HBV as the highest risk for the profession but only 48.1% had received the HBV vaccination. This rate of immunization is much lower than the 74% reported for dentists in England and the 74% similarly reported for dentists in the Carribeans.^{17,19} In these countries,

unlike in Nigeria, dentists could have received the vaccine in dental school and vaccination is free to dental personnel.

In this study, main reasons for non-vaccination included low perception of risk, non-availability of vaccine, inertia and cost. A false sense of security bordering on complacency might have been responsible for this attitude. This gives cause for serious concern and suggests a lack of sensitivity to the danger posed by HBV infection not only to the dentist but also to the auxiliary staff, patients and family members.

Routine screening of patients was practiced by 11.3% of the respondents. Routine screening of patients and its effect on reducing the incidence of HBV infection has not been documented. In addition to economic and ethical implications, routine screening of patients may be impractical. Routine screening of only high-risk patients has been recommended.²¹

It is encouraging to note that a high percentage of responding dentists (97.5%) used gloves for all procedures. This is similar to the findings of Sote²² who reported use of gloves by 94.9% of dentists in Lagos, Nigeria. Only 23.1% of dentists in this study indicated routine use of eyewear. The use of eyewear for protection from splatter of blood and saliva has been well documented.²³ The need for use of masks to protect the oral and nasal mucosa from the splatter of blood and saliva has similarly been documented.²³ In this study, 70.6% of the dentists routinely used masks. This is lower than the 81% reported by Sote²² for Nigerian dentists. The decrease in use of masks may be due to low availability, which is a reflection of the poor state of the Nigerian economy.

It has been recommended that every patient must be considered potentially infectious and universal precautions be applied to all patients.¹¹ In industrialized countries, there is a growing number of dentists complying with these guidelines.^{24,25} In developing countries like Nigeria, the high cost of materials, irregular supplies and poor funding affect the implementation of these recommendations.

This study indicates a low rate of vaccination due to lack of education and lack of Hepatitis B vaccine at an affordable rate. Furthermore, this study also indicates that barrier techniques are not used all the time.

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