



ISSN Print: 2394-7489
ISSN Online: 2394-7497
IJADS 2022; 8(1): 227-232
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www.oraljournal.com
Received: 08-11-2021
Accepted: 15-12-2021

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Assessment of knowledge, awareness and acceptance of hepatitis B infection and its vaccination among dental students in metro city of western Maharashtra

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DOI: <https://doi.org/10.22271/oral.2022.v8.i1d.1433>

Abstract

Introduction: Hepatitis B infection is a potentially life-threatening liver infection caused by hepatitis B virus. It is considered as an important occupational hazard for dentists as they are at a greater risk of exposure to the virus from an infected patient. The present aim of the study is to evaluate knowledge, awareness and vaccination status on hepatitis B among dental students.

Materials and Methods: A questionnaire study was conducted among dental students. The data was collected by a structured, self-administered and pre-tested questionnaire and analyzed. The statistical analysis was done using descriptive statistics.

Results: In this study, there were a total of 150 participants between 18-35 years of age. 64% of the students were aware about different modes of transmission of hepatitis B. 96.6% of the students were aware of hepatitis B vaccine but only 53.3% had the knowledge about vaccination dosing schedule for adults. 70.7% dental students were vaccinated whereas 18% students were non-vaccinated. Among those, 38.6% of the students were partially vaccinated.

Conclusion: Knowledge and awareness regarding Hepatitis B infection and its vaccination was satisfactory. Majority of the dental students were either fully or partially vaccinated. Therefore, the dental students must be encouraged to not only take the vaccination but also to complete their doses during their clinical practices.

Keywords: Dental students, dosing schedule, hepatitis B infection, hepatitis b vaccination, questionnaire study

Introduction

Hepatitis B infection is a serious life threatening liver infection caused by hepatitis B virus (HBV), which is a DNA virus belonging to Hepadna virus family^[1, 2]. In 2020, World Health Organization (WHO) estimated that around 3.25 million people worldwide were living with chronic hepatitis B infection and approximately 900,000 people died due to Hepatitis B virus^[3]. Therefore, it is known as one of the major public health problem worldwide^[1]. Hepatitis B virus causes acute as well as chronic liver diseases. The acute infection begins with symptoms such as general malaise, loss of appetite, nausea/vomiting, body ache, low grade fever and darkened urine which progress to development of jaundice. The incubation period is 30-180 days. The chronic infection may either be asymptomatic or associate with chronic inflammation of liver leading to cirrhosis, liver cancer and liver failure over a period of several years, if left untreated^[4]. Hepatitis B is 50-100 times more contagious than HIV and is predominantly transmitted through transfusion of blood and other body fluids, sharing contaminated needles or syringes, needle stick injury, sexual contact or from mother to baby at birth^[5]. Since healthcare workers are more exposed to blood and body fluids, they are at a greater risk of developing the infection. It has also been documented that HBV infection is the most important infectious occupational hazard among dental professionals because of percutaneous injury that happen in dental practice. So, training for precautions and awareness for hepatitis B virus and vaccine should be mandatory^[6, 7]. WHO recommends the use of oral treatment with antiviral drugs such as tenofovir or entecavir as the most potent drug for hepatitis B virus.

However, the treatment does not cure the infection but only suppresses the replication of the virus [8]. Therefore, prevention by vaccination is the only safe strategy against high prevalence of hepatitis B infection. Hepatitis B virus vaccine is available since 1981 which contains HBs Ag protein and aluminium phosphate and aluminium adjuvant. In 1992, the Global Advisory Group to WHO recommended that all countries integrate hepatitis B vaccine into national immunization programs by 1997 [1]. Hepatitis B vaccine was introduced in India in the year of 2008 [2]. One of the local vaccine is Gene Vac-B, manufactured by Serum Institute of India Ltd, Pune, Maharashtra. Engerix-B, manufactured by Glaxo Smith Kline, Rixensart, Belgium has also been marketed in India for several years [9]. The recommended dosing schedule for adults is 0, 1, 6 months, given intramuscularly and for infants, it is as soon after birth, 6 weeks, 14 weeks or 6, 10, 14 weeks. The volume of monovalent hepatitis B vaccine depends on the age of an individual which is 0.5 ml per dose for 19 years and younger and 1ml per dose for 20 years and older [10, 11, 12]. The complete vaccine series induces protective antibody levels in more than 95% of individuals which lasts at least 20 years and is probably lifelong [8]. Hence, the purpose of the study was to assess the knowledge, attitude and practice of hepatitis B infection and its vaccination, among dental students in metro city of Western Maharashtra.

Materials and Method

A questionnaire based study was conducted among students of dental colleges in metro city of Western Maharashtra. The study aimed to assess the knowledge, awareness and acceptance of hepatitis B infection and its vaccine. The main objective was to determine how many students were vaccinated and to know the reasons for those who have not taken the vaccine. The study was carried out for duration of three months. The participants were selected based on the following inclusion criteria: i) undergraduate students including interns and ii) postgraduate students. Healthcare professionals (teaching staff) and grade IV workers (non-teaching staff) were excluded from this study. The input parameter for sample size calculation using G*power software version 3.1.9.2 as follows: 80% power of the study, alpha error 0.05, effective size 0.5 and degree of freedom 5. Calculated sample size was 140. The final considered sample size was 150. Convenient sampling technique was used in the study. The data was collected through structured, self-administered, pre-tested and validated questionnaire, written

in English language. It consisted of two parts and comprised of 33 questions. The first section included demographic data such as age, gender, designation, religion and marital status and the second part consisted of questions based on knowledge, attitude and practice towards hepatitis B virus and vaccine. Some of the responses were based on Likert scale and some were yes/no questions. The reliability statistics were calculated and the Cronbach alpha value was 0.618. The questionnaire was designed on Google forms (Google LLC, Mountain view, California, United States) and the link was distributed among dental students (UG and PG) via e-mail, WhatsApp number and other social media platforms. A brief introduction about the study was given and informed consent was also obtained from each student in which voluntary participation was assured. Data collected were entered into a spreadsheet (Microsoft excel 2016). Statistical analysis was done using descriptive statistics using statistical package for the social science (SPSS) 23.0 version (IBM, Chicago, Illinois, United States). The p-value was set at 5%.

Results

In table 1, from a total of 150 students who completed the questionnaire, more than half of the participants (89.3%) belong to age group of 18-25 years, while individual of age group of 26 to 35 years constituted of only 10.7% of the study population. Majority of the study population were female (66.7%). In table 2, about 95.3% students were aware that Hepatitis B is caused by hepatitis B virus, but there is still lack of knowledge in 4.6% students about the causative organism. Regarding modes of transmission, an average of 64% of the students were aware about different types of transmission whereas 24.7% of the students were not aware of transmission of hepatitis B through sharing of items like toothbrush and razor. Regarding Hepatitis B vaccine, 96.6% students were aware of it and 80% believed that vaccination is the most effective way to prevent Hepatitis B infection. 53.3% of the students had the knowledge about vaccination dosing schedule for adults while 40% were aware about the dosing schedule for infants.

In table 3, around 78.7% dental students were vaccinated and 18% were non-vaccinated. Among those who were vaccinated, 38.6% of the students were partially vaccinated. Reasons for not taking the vaccine include: not aware of the vaccine (6.7%), fear of needle (5.3%), don't feel the need (4.7%), and fear of side effects (4%). 88.7% of the students indicated routine use of PPE and 92% followed proper sterilization and disinfection.

Table 1: Demographic details of study participants. (N=150)

Sr. No.	Particulars	Responses	Number (N)	Percentage (%)	Total (N) (%)
1	Gender	Female	129	86%	150 (100%)
		Male	21	14%	
2	Age (years)	18-25 years	134	89.30%	150 (100%)
		26-35 years	16	10.70%	
3	Designation	Undergraduates	127	84.70%	150 (100%)
		Postgraduates	23	15.30%	
4	Religion	Muslims	122	81.30%	150 (100%)
		Hindus	24	16%	
		Christians	2	1.30%	
		Atheist	1	0.70%	
		Buddhist	1	0.70%	
5	Marital Status	Single	142	94.70%	150 (100%)
		Married	8	5.30%	

Table 2: Knowledge and awareness related questions, responses of the study participants (N=150)

Sr. No.	Questions	Responses	Number (N)	Percentage (%)	Total (N) (%)
1	Have you heard of Hepatitis B infection?	Yes, I have heard	148	98.6	150 (100%)
		No, I haven't heard	1	0.7	
		I am not sure	1	0.7	
		I don't know	0	0	
2	Are you aware that Hepatitis B infection is caused by virus?	I am aware	143	95.3	150 (100%)
		I am not aware	0	0	
		I am not sure	5	3.3	
		I don't know	2	1.3	
3	Hepatitis B infection can result in?	Liver Cancer	5	3.3	150 (100%)
		Cirrhosis	8	5.3	
		Acute liver failure	11	7.3	
		All of the above	126	84	
4	Which of the following modes of transmission of Hepatitis B virus are you aware of?	Through contact with blood	13	8.6	150 (100%)
		Sharing items like toothbrush and razor	1	0.7	
		Sexual intercourse with infected person	1	0.7	
		Option 1 and 3	37	24.7	
		All of the above	96	64	
		I don't know	2	1.3	
5	Can Hepatitis B infection be transmitted from mother to fetus?	Yes	108	72	150 (100%)
		No	6	4	
		Maybe	30	20	
		I don't know	6	4	
6	Can Hepatitis B infection be transmitted by unsafe needles or sharps?	Yes	138	92	150 (100%)
		No	3	2	
		Maybe	5	3.3	
		I don't know	4	2.7	
7	Which of the following are symptoms of Hepatitis B infection?	Jaundice, dark urine	21	14	150 (100%)
		Nausea, vomiting, loss of appetite	3	2	
		Joint pain	1	0.7	
		All of the above	125	83.3	
8	Is it possible for a person to be infected from Hepatitis B virus and not have any symptoms?	Yes	77	51.3	150 (100%)
		No	10	6.7	
		Maybe	53	35.3	
		I don't know	10	6.7	
9	Which one of the following is the most effective way of preventing Hepatitis B infection?	Personal hygiene	7	4.7	150 (100%)
		Vaccination	120	80	
		Universal precautions	8	5.3	
		Avoid injecting drugs	1	0.7	
		Infection control and sterilization protocol	14	9.3	
		Not preventable	0	0	
10	Are you aware of Hepatitis B vaccine?	Yes, I am aware	145	96.6	150 (100%)
		No, I am not aware	1	0.7	
		I am not sure	3	2	
		I don't know	1	0.7	
11	What do you think is the ideal dose of Hepatitis B vaccine?	1 dose	5	3.3	150 (100%)
		2 doses	41	27.3	
		3 doses	90	60	
		I don't know	14	9.3	
12	What is the route of administration of Hepatitis B vaccine?	Intramuscular	133	88.7	150 (100%)
		Intradermal	2	1.3	
		Subcutaneous	0	0	
		I don't know	15	10	
13	What is Hepatitis B vaccination dosing schedule for adults?	0, 1, 2 months	45	30	150 (100%)
		0, 1-2, 4-6 months	80	53.3	
		0, 4-6 months	12	8	
		0, 1-2 months	13	8.7	
14	What is Hepatitis B vaccination dosing schedule for infants?	At birth, 6, 14 weeks / 6, 10, 14 weeks	60	40	150 (100%)
		At birth, 3, 6 weeks / 6, 10, 14 weeks	46	30.6	
		6, 14, 18 weeks	37	24.7	
		3, 6, 12 weeks	7	4.7	
15	How long does a full dose of Hepatitis B vaccine protect someone?	1-5 years	31	20.7	150 (100%)
		Around 10 years	43	28.6	
		20 years or more	37	24.7	
		I don't know	39	26	
16	What is your source of awareness of Hepatitis B	Television	14	9.3	150 (100%)
		Newspaper	6	4	

	vaccine?	Social media	24	16	
		Medical training	106	70.7	
17	Has your institution arranged a free of cost Hepatitis B vaccination drive for their students?	Yes	77	51.3	150 (100%)
		No	58	38.7	
		Maybe	5	3.3	
		I don't know	10	6.7	

Table 3: Attitude and practice related questions, responses of study participants. (N=150)

Sr. No.	Questions	Responses	Number (N)	Percentage (%)	Total (N) (%)
1	Dentist are more susceptible to Hepatitis B infection than other people.	Strongly agree	100	66.6	150 (100%)
		Agree	38	25.3	
		Neutral	7	4.7	
		Disagree	4	2.7	
		Strongly disagree	1	0.7	
2	How effective do you think is Hepatitis B vaccine in protecting someone from Hepatitis B infection?	Not effective	8	5.3	150 (100%)
		Less effective	5	3.3	
		Moderately effective	41	27.3	
		Very effective	90	60	
		I don't know	6	4	
3	Hepatitis B vaccine is safe.	Strongly agree	87	58	150 (100%)
		Agree	57	38	
		Neutral	6	4	
		Disagree	0	0	
		Strongly disagree	0	0	
4	Do you think it should be made mandatory for all healthcare workers to receive the Hepatitis B vaccination?	Strongly agree	103	68.7	150 (100%)
		Agree	41	27.3	
		Neutral	5	3.3	
		Disagree	1	0.7	
		Strongly disagree	0	0	
5	In your opinion, should the institution provide Hepatitis B vaccination to all their students?	Strongly agree	107	71.3	150 (100%)
		Agree	36	24	
		Neutral	5	3.3	
		Disagree	1	0.7	
		Strongly disagree	1	0.7	
6	Should screening of Hepatitis B be part of routine blood investigation?	Strongly agree	83	55.3	150 (100%)
		Agree	56	37.3	
		Neutral	10	6.7	
		Disagree	1	0.7	
		Strongly disagree	0	0	
7	Do you agree that there is still more awareness required among dental students on Hepatitis B vaccination?	Strongly agree	87	58	150 (100%)
		Agree	48	32	
		Neutral	15	10	
		Disagree	0	0	
		Strongly disagree	0	0	
8	Have you ever received Hepatitis B vaccination?	Yes	118	78.7	150 (100%)
		No	27	18	
		Maybe	2	1.3	
		I don't know	3	2	
9	If no, why have you not received the vaccination?	Lack of awareness	10	6.7	32 (21.4%)
		Fear of needle	8	5.3	
		Fear of side effects	4	2.7	
		Too expensive	3	2	
		Don't feel the need	7	4.7	
		It's against my belief or religion	0	0	
10	If yes, then how many doses of Hepatitis B vaccine have you received?	1 dose	17	11.3	118 (78.6%)
		2 doses	41	27.3	
		3 doses	60	40	
		more than 3 doses	0	0	
11	When did you receive the last dose of vaccination?	1-6 months ago	12	8	118 (78.6%)
		1-2 years ago	69	46	
		3-4 years ago	25	16.6	
		5 or more years ago	12	8	
12	Would you recommend your family or spouse to be vaccinated as well?	Yes	126	84	150 (100%)
		No	0	0	
		Maybe	21	14	
		I don't know	3	2	
13	Would you prefer doing Hepatitis B test before marriage?	Yes	84	56	150 (100%)
		No	13	8.7	

		Maybe	46	30.6	
		I don't know	7	4.7	
14	Is taking thorough history of patient, to rule out Hepatitis B status, a part of your routine practise?	Yes, always	79	52.7	150 (100%)
		Yes, sometimes	47	31.3	
		Rarely	16	10.7	
		Never	8	5.3	
15	Do you use personal protective equipment (gloves, facemask, eye protection, etc.) in your routine dental practise?	Yes, always	133	88.7	150 (100%)
		Yes, sometimes	13	8.7	
		Rarely	2	1.3	
		Never	2	1.3	
16	Do you take care of proper sterilization and disinfection to prevent cross infection among patient and dental personnel?	Yes, always	138	92	150 (100%)
		Yes, sometimes	9	6	
		Rarely	0	0	
		Never	3	2	

Discussion

Dentists are among the population groups that are highly exposed to HBV infected patients. They are at a higher risk for accidentally acquiring the infection as their routine practice includes the use of sharp instruments in an environment contaminated with saliva and blood. Although virus transmission via saliva is possible, the major occupational risk is accidental needle stick injuries^[5, 6]. Several studies around the world have shown that vaccination prevents hepatitis B infection and dentist vaccination has proven beneficial in preventing the spread of the disease and improving the health status of dentists. Other studies have also shown that poor knowledge among dentists accounted for lower numbers of people vaccinated against hepatitis B. Therefore, it is necessary that dental students be aware of Hepatitis B infection and its vaccination.

In this study, 98.6% were aware of Hepatitis B infection. Knowledge regarding modes of transmission was found to be moderate; around 64% of students were aware of all the modes of transmission while the rest mentioned only few modes. This result is better than the study done by Khan *et al.*^[13] among medical students of Karachi, which found 57.1% had knowledge about all modes of transmission of hepatitis B. This is contradictory to the studies by Kasetty *et al.*^[14] which revealed 82.1% of dental professionals had correct knowledge regarding the same. A similar result was found by Sadanandam P *et al.*^[2] among first year medical students (63%).

Prevention is more effective than any other therapy for hepatitis B infection. Therefore, immunization is the best way to eliminate HBV related diseases. Since 1982, when the hepatitis B vaccine became available and has been proven safe to both adults and children, attempts have been made in different parts of the world to encourage vaccination among dental professionals also. In this study, around 78.7% students were vaccinated and 18% students were never vaccinated. Result of this study is good compared to the studies done in Iran and Nigeria, where vaccination rate among dental surgeons were 51.2% and 68.6% respectively^[6, 15]. Similar results were reported by Gomathi TP *et al.*^[16] in their study among dental interns (76%) and Mustafa S *et al.*^[7] (80.5%) among dental students in Multan. To take the vaccine and also encourage others to take the vaccine, proper and adequate amount of knowledge on the vaccine and its doses is required. This study reported that 60% of the students pointed out that hepatitis B vaccine have a total of 3 doses. But, among those who were vaccinated, only 40% had completed the doses and 38.6% were partially vaccinated.

The study in Islamabad, by Mohsin B *et al.*^[1] among medical students had a similar result (33% and 27% respectively), which is better than the results found by Azodo CC *et al.*^[15]

where 48.6% of the Nigerian dentists were partially vaccinated and only 20% were fully vaccinated. This is contradictory to the results seen in the study by Jalaleddin H *et al.*^[6] where majority (48.1%) of Iranian dentists were fully vaccinated and only 3.1% of the vaccinated dentists had incomplete vaccination. The study in Multan showed that out of 80.5% vaccinated students, 27.1% were partially vaccinated and 53.4% were fully vaccinated, but 38.6% of the fully vaccinated students, had also taken booster dose.⁷ Poor knowledge about the doses of the vaccine resulted in more number of students being partially vaccinated.

In the study conducted by Mohsin B *et al.*^[1] the most common reasons for not taking the vaccine among medical students were laziness (53%) and lack of awareness (23%). Another study in Multan reported that most of the dental students did not take vaccine due to busy schedule (39.7%) or lack of knowledge (21.4%) while fear of needle was seen in only 6.1% of the students^[7]. Whereas in this study, the most common reasons were lack of knowledge (6.7%), fear of needle (5.3%) and doesn't feel the need (4.7%). Around 95% of the students believed that Hepatitis B vaccine should be mandatory for all dentists and that the institution should provide the vaccine to all their students. 84% would also recommend their family members to get vaccinated. The limitation of this study was the small sample size. The study can be done using a large population with different variables in different region of India.

Conclusion

Knowledge and awareness regarding Hepatitis B infection and its vaccination was satisfactory. Majority of the dental students were either fully or partially vaccinated, however there were few who were non-vaccinated. Therefore, the dental students must be encouraged to not only take the vaccination but also to complete their doses during their clinical practices.

Recommendations

1. It is recommended that a policy be implemented for complete vaccination and health education of all students in all dental colleges to ensure complete immunization.
2. The strongest recommendation for improving hepatitis B vaccination is that vaccine should be mandatory for all students before beginning of their clinical training and provision of vaccine free of cost by the institute.

References

1. Mohsin. B, Imran MK, Muhammad Waqas A, Mahmood J. Hepatitis B vaccination status among students of medical college in Islamabad. J Islamabad med and dental college (JIMDC). 2015;4(4):157-61.

2. Sadanandam P, Anil M, Rajamouli J, Aswan G. Awareness and vaccination status on Hepatitis B among first year medical students. *IOSR-JDMS*. 2017;16(10-IV):90-93.
3. Machmud PB, Glasauer S, Gottschick C, Mikolajczyk R. Knowledge, vaccination status and reasons for avoiding vaccinations against Hepatitis B in developing countries: A systemic review. *Vaccines*. 2021;9:625.
4. Ravichandran RK, Jitesh J, Ananda SR, Bhakti JS, Sowndarya G. Knowledge, attitude and practices regarding hepatitis B and infection control among clinical dental students. *International J Applied Dental Sciences*. 2019;5(3):43-6.
5. Thamir MA, Mohamad A, Gehad S, Talib H. Knowledge, awareness, attitude and practice of health-care professionals toward hepatitis B disease and vaccination in Saudi Arabia, Human vaccines and Immunotherapeutics. 2019;15(12):2816-823.
6. Jalaleddin H, Zahra AT, Kimia N, Hesameddin H, Zahra H. Knowledge, attitude and practise of Hepatitis B vaccination among Iranian dentists. *International J Collaborative Research on Internal Med and Public health*. 2014;6(7):199-206.
7. Mustafa SM, Jamil Mohsin J, Maryam S. Hepatitis B vaccination status of MBBS and BDS students in Multan medical and dental college, Multan, Pakistan. *Pak J Public health*. 2018;8(3):138-14.
8. World Health Organization. Hepatitis B. Available at: <https://www.who.int/news-room/fact-sheets/detail/hepatitis-b> (Last accessed on 20th December 2021).
9. Shivananda Virbhadrha S, Srikanth BS, Mohan M, Kulkarni PS. Comparison of two Hepatitis B vaccines (GeneVac-B and Engerix B) in Healthy infants in India. *Clin Vaccine Immunol*. 2006;13(6):661-64.
10. Serum Institute of India Pvt. Ltd. Hepatitis B Vaccine (rDNA) Paediatric and Adult. Available at: https://www.seruminstitute.com/product_recombinant.php (Last accessed on 20th December 2021).
11. Immunize India. Hepatitis B (HepB) Vaccine. Available at: <https://immunizeindia.org/content/hepatitis-b-hepb-vaccine/> (Last accessed on 20th December 2021).
12. Indian Paediatrics. IAP Hepatitis B Immunization Schedule. Available at: <https://www.indianpediatrics.net/nov2001/nov-1335-1338.htm> (Last accessed on 20th December 2021).
13. Khan N, Ahmed SM, Khalid MM, Siddiqui SH, Merchant AA. Effect of gender, age on knowledge, attitude and practise regarding hepatitis B and C and vaccination status of hepatitis B among medical students of Karachi, Pakistan. *Pak Med Assoc*. 60(6), 450-5.
14. Kasetty S, Mohania A, Dwivedi D, Tijare M, Kallianpur S, Gupta S. A cross-sectional study on knowledge of hepatitis B infection among dental professionals. *Virology Microbial*. 2013, 1-5.
15. Azodo CC, Ehizele AO, Uche I, Erhabor P. Hepatitis-B vaccination status among dental surgeons in Benin city, Nigeria. *Ann Med Health Sci Res*. 2012;2:24-8.
16. Gomathi TP, Chaudhari D, Dnyaneshwar C, Azhar S, Vinay V, Shetty V. Knowledge, attitude and practice of Hepatitis-B among dental interns - A questionnaire based cross-sectional study. *International J of recent scientific research*. 2016;7(9):13458-461.