

Knowledge, Attitude and Practice of Hepatitis B and Infection Control of Dental Undergraduates of a Private Medical University in Cochin.

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Running title: Hepatitis B in medical professionals

Clinical Significance: Though the medical professionals were among the high-risk groups for hepatitis, they have little knowledge about this disease and the mode of its transmission.

Article citation: Vani Vishwanathan, 1 Reshma Rajagopal, 2 Navaneetha Krishnan V, 1 Krishnaja Kumar, 1 Rahul Sajeev, 1 Vijay Kumar S, 2 Beena R Varma. 3. Knowledge, Attitude and Practice of Hepatitis B and Infection Control of Dental Undergraduates of a Private Medical University in Cochin. JOURNAL OF ORAL MEDICINE, SURGERY, PATHOLOGY, BIOLOGY. 2016; Vol 1, no 1: 12-20

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ABSTRACT

Viral hepatitis has become one of the silent epidemics throughout the world. Liver cirrhosis and carcinoma are a consequence of Hepatitis B. It can be transmitted through numerous routes, and the dental office is one of them. The transmission could be through direct or indirect contact with blood, droplet fluids, oral fluids, aerosols, etc.

Aims and Objective: The study was conducted on dental undergraduate students of a private dental school in Kochi, Kerala, INDIA; to assess and compare the knowledge, attitude and practice of Hepatitis B infection and the measures that were taken, to control it.

Materials and Method: This cross sectional survey included 105 clinical dental students. Filled up data, within a self-structured questionnaire, relating to knowledge, attitude and practice of hepatitis B was collected from each individual. Response rate was 100%.

Results: The mean level of knowledge about hepatitis B in dental undergraduate students was adequate. The third year students had an overall higher KAP (Knowledge, Attitude and Practice) score than other undergraduates.

Conclusion: Dental surgeons have increased chances of acquiring Hepatitis B infection as compared to the other specialists in the medical field, owing to their prolonged exposure to aerosols during dental procedures. Hence it is advisable for dental clinicians, to consider every patient, as a carrier for the hepatitis virus, and thereby employ more measures to prevent and protect against this silent killer infection.

INTRODUCTION

Dental health care professionals are more vulnerable to various infections caused by hepatitis B and C viruses, staphylococci, streptococci, HSV type 1, HIV, rubella, influenza and other prevalent infectious agents.¹

Hepatitis B is an infection in which there is inflammation of the liver caused by hepatitis B virus and transmitted through contact with blood or other body fluids of a person who has the virus. It is the foremost source for world-wide cause of infections, cirrhosis and carcinoma of the liver. It is the 10th leading cause of death worldwide. HBV is also transmitted by skin prick with an infected, contaminated needle and syringe during surgical and dental procedures.²⁻⁷ Health care workers are at an increased risk of cross infection as well as transmission of HBV.

Risk factors can be prevented if health worker includes routine use of barrier techniques (gloves, masks), sterilization of dental instruments and vaccination against HBV.^{8,9}

HBV can be prevented by strict implementation of appropriate barrier precautions, to prevent skin and mucous membrane exposure, when handling blood and other body fluids of all patients.^{10, 11, 12, 13, 14, 15} In dental setup, hands are considered major source of cross infections, the potential remnants of blood being retained on the hands until 5 days until meticulous cleaning of contaminated hands is done.

Wearing gloves in the dental setup has been advised for prevention of infection to patients or other staff.^{13, 14,}

¹⁵Dental students undergo serious threats during their clinical training due to possibility of exposure to blood borne pathogens with the risk of infection with HBV.¹⁵ Hence this study was undertaken, to assess the knowledge, attitude and practice of hepatitis B and infection control, of dental undergraduates of a private medical university in Kochi, Kerala, INDIA.

MATERIALS AND METHODS

The study was conducted:

- To assess the knowledge, attitude and practice of hepatitis B infection and its control, among the third year, final year students and interneers of dental undergraduate course.
- To compare the knowledge, attitude and practice of hepatitis B and infection control between the third year, final year students and interneers of dental undergraduate course.

Cross sectional survey was conducted among undergraduate dental clinical students in a private dental college in Kochi, Kerala, INDIA.

Convenience sampling method was used for participants' enrolment in the study. Ethical permission was taken from the institutional ethics committee.^{1, 2, 3} Thirty five students each from third year, final year and interns were included in the study. Responses were coded and analyzed.

A self-framed questionnaire was distributed and collected from students. Five questions regarding knowledge, three questions regarding attitude and seven questions regarding practice were included in the questionnaire. Descriptive statistics and ANOVA test were used for comparison of mean score between groups. A

p value = 0.05 was kept as level of significance.

RESULTS

One hundred and five students filled the questionnaire. Response rate was 100%. The study was conducted, to evaluate extent of awareness regarding transmission of hepatitis B infection among dental students. This study also focussed on the practice followed, regarding protective and preventive methods to avoid transmission of hepatitis B virus, and its control.

The mean knowledge scores were 4.08 ± 1.23 , 3.05 ± 0.07 , and 3.65 ± 0.9 for third years, final years and interns respectively. The attitude scores were 2.97 ± 0.16 , 3.0 ± 0.28 , and 2.9 ± 0.01 for third years, final years and interns respectively. The mean practice scores were 5.41 ± 1.05 , 4.51 ± 1.29 , and 3.54 ± 1.33 for third years, final years and interns respectively.

Table 1: Mean scores for Knowledge, Attitude, and Practice among the third year, final year students and internees of a dental school in a medical university

Mean scores	Third year	Final year	Internees
Knowledge score	4.08 \pm 1.23	3.05 \pm 0.07	3.65 \pm 0.9
Attitude score	2.97 \pm 0.16	3.0 \pm 0.28	2.9 \pm 0.01
Practice score	5.41 \pm 1.05	4.51 \pm 1.29	3.54 \pm 1.33

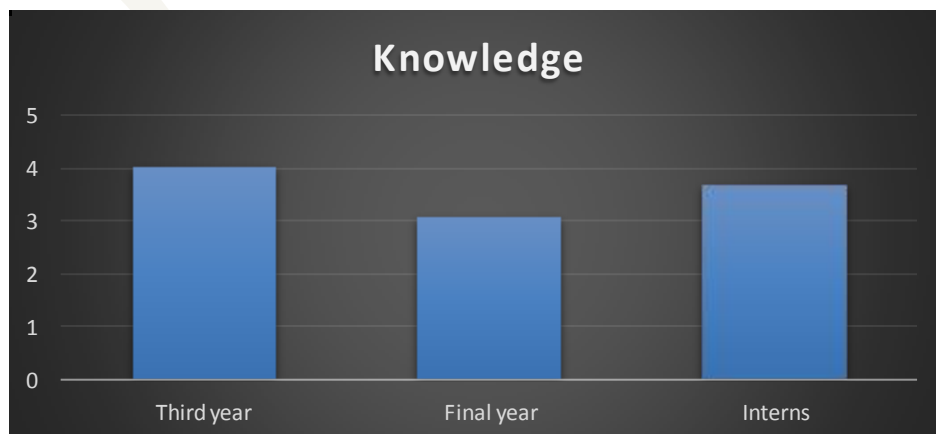
Thirty-five subjects each, from the third year, final year and internees were selected for the study, as the clinical exposure, begins during the third year of their course, and their syllabus includes details about the infectious diseases, their mode of spread, and their means of prevention.

ANOVA test was done to compare the mean scores of total knowledge, attitude and practice. It was found to be statistically significant ($p=0.01$) for total knowledge and total attitude scores. Post-hoc turkey test was done for further analysis.

Total knowledge and total attitude mean scores between third year and final year were found to be statistically significant ($p=0.00$ and $p=0.043$ respectively). However, the difference in mean scores of total practice was not found to be statistically significant. ($p=0.06$)

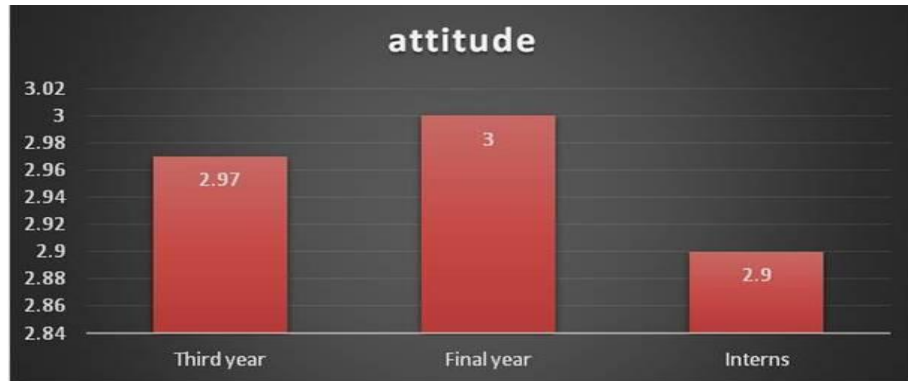
Graph 1: Mean Knowledge scores among different groups

GRAPH 1



Graph 2: Mean attitude scores among different groups

GRAPH 2



Graph 3: Mean practice score among different groups

GRAPGH 3



DISCUSSION

Hepatitis B and hepatitis C, are among major health problems globally, casting an enormous burden on the health-care system and a major source of patient's misery.^{14,15} They are important causes of hepatocellular carcinoma, and are likely to remain a serious health problem, resulting in substantial morbidity and mortality for several decades to come.¹⁶ These infections are also an important occupational hazard for

dental professionals. Generally, it is easy to assume that dental students, by virtue of their proximity to the health facility should have adequate knowledge about diseases and other health conditions. Therefore, this study has been carried out with a motive to assess knowledge, attitude and practice regarding hepatitis B infection and help in increasing awareness level for the benefit of dental students.

A majority of the respondents demonstrated an adequate level of knowledge of hepatitis B and C infection and the routes of transmission of the infection and the fact that the infection can be transmitted as a nosocomial infection. This finding is however, at variance with another study done in Karachi where the respondents demonstrated a very low knowledge of hepatitis B infection.¹⁷ This may be due to the fact that the present study was done in a tertiary care hospital with dental college attached with higher quality of teaching of medical related topics.

In the present study, it was concluded that the third year dental students, had a better knowledge regarding hepatitis B infection, as they had recently completed their classes on Microbiology and Pathology. Final year dental students had a better knowledge as compared to interns. It was also seen from the responses that third year, final year and interns were equally aware that blood, sexual contact, body fluids and secretions are the most important means of contamination by HBV and HIV. This finding was similar to the finding found in study among health care workers of a tertiary hospital in India and was similar to that of a study done among dental students in central India.¹⁸

Though it is expected that final years and interns should be having more knowledge, in the present study it was found to be different. The reason of improved knowledge among third years may be attributed to their General Medicine and Surgery taught as subjects during that year of study. Moreover, third students should be retaining more about Microbiology and Pathology subjects, which were taught during the second year of their undergraduate course.

Attitudes are directly under the influence of knowledge levels; therefore, it is necessary to increase the level and quality of training among medical and dental students to prevent discrimination and prejudice towards the infection and the patients.

HBV and HCV infections are serious public health problems that can have consequences in terms of psychological and occupational diseases. HBV and HCV are common causes of occupational diseases, which can be transmitted from patients to health-care professionals and from the professionals to their patients and may also spread to members of their family due to intimate contact. Fortunately, the infection transmission at occupational level can be prevented by following standard precautions. Discriminatory behaviour and attitude is common towards patients with hepatitis infection.

CONCLUSION

A cross sectional study was conducted among 105 undergraduate dental students to assess and compare their knowledge, attitude and practice of hepatitis B. The mean level of knowledge about hepatitis B in dental undergraduates was adequate. The third year students had overall highest mean KAP scores than other undergraduate groups.

HBV and HCV infections are serious public health problems that can have consequences in terms of psychological and occupational diseases. HBV and HCV are common causes of occupational diseases, which can be transmitted from patients to health-care professionals and from the professionals to their patients and which may spread to members of their family due to intimate contact. Fortunately, the infection transmission at occupational level can be prevented by following standard precautions. Discriminatory behaviour and attitude is common towards patients with hepatitis infection.

Source of funds: The study has been self-financed.

Conflict of interest: The authors have no conflict of interest with regard to the study

Consent form: All the participants of the study have duly signed the consent form.

Ethical committee permission: Available to the respondent, at the editorial office if desired.

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