

The level of knowledge of hepatitis B infection among Turkish dental students

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Abstract

Aim: Dentists are at high risk of hepatitis B infection. The aim of this study was to evaluate the knowledge of students from Ordu univeriyt, faculty of dentistry on hepatitis

Materials and Methods: Questionnaires consisting of 76 questions related to students' socio-demographic status, knowledge of hepatitis infection about the ways of transmission, prevention and risk groups, and vaccination status were distributed to all dental students.

Results: Total of 155 students participated in the study and completed the questionnaire. The level of knowledge of the 4th and 5th year students was significantly higher than the other students ($p=0.001$). Fifth year students had significantly better knowledge about the transmission and prevention ways of the hepatitis when compared with the 1st year students B ($p=0.001$). Although, only 60% percent of the students have been vaccinated, the vaccination rates were higher in both 4th and 5th year-students when compared to the other classes. Forty-one percent of the students did not know that HBV is contagious during asymptomatic period.

Conclusion: There was a lack of knowledge about the hepatitis B infection especially among the 1st and 2nd year students. Therefore, the continuous education of infectious diseases is required starting from the first year of the dental school.

Keywords: Dental Students; Hepatitis B; Knowledge.

INTRODUCTION

Hepatitis B virus (HBV) infection is one of the most common and serious diseases in the world (1). Besides threatening health, it also causes serious damage to economy of the country. HBV is transmitted from one individual to another via direct blood to blood contact, from mother to infant, and unprotected sexual contact (2). Risk factors associated with this infection include drug abuse, piercings, blood transfusions, dialysis, and dental procedures (2).

Among the professionals, dentists are in the main risk group (1). In dental clinics, the staff can be either directly or indirectly exposed to the infection. The main transmission can occur through needles, cuts, splashing and biting (3) with the direct contact with blood, oral and other secretions (4). Also, injuries with the contaminated instruments can cause transmission.

The level of knowledge about the infection, the way of transmission and the protection is of importance especially for the students who are at the beginning of their career. The good knowledge can prevent the spread

of disease among patients and dentists. It is not possible to avoid all injuries in the clinic. Therefore, it is important to use proper protective clothing such as gloves, mouth mask and goggles (5). Oral health workers (students, dentists etc) must be fully immunized against disease by receiving a Hepatitis B vaccine and must be sure to have acquired immunity to protect both themselves and their patients. The purpose of this study was to determine the knowledge about hepatitis B infection, the vaccination and immunization status among 1st to 5th year dental students in the Ordu University Faculty of Dentistry.

MATERIALS and METHODS

Questionnaire was designed to be able to evaluate the knowledge of the students, on the basis of previous literature (6-8). Self-administered questionnaires consisted of 76 questions were given to all students from year 1 to year 5. The questions were divided into 6 sections including socio-economic-demographic information, general knowledge levels about hepatitis B, the risk groups, the ways of transmission, the ways of protection, and the vaccination/immunization. They were asked to select one answer from 'true', 'false' or 'no idea'

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for questions in the section 2-5. The last section assessed the knowledge about the vaccine, the number of required doses and immunization status. Totally 155 of 187 students were participated in the study and completed the questionnaire.

The normality of the data was examined by the Kolmogorow-Smirnov test. Variance Analysis (ANOVA) was used to compare multiple groups (classes). LSD was used when the parametric conditions were provided for the multiple comparison test, and Tamhane test was used when the parametric conditions were not met. A p-value <0.05 was considered statistically significant.

RESULTS

Totally 155 students (48 male, 107 female) students were participated in the study. The differences between socioeconomic levels of the patients were found statistically significant (p<0.05).

Where general knowledge about HBV infection was determined, the correct answer rate was 61%. The difference between the knowledge levels according to the year of the school was statistically significant (p=0.001) (Table 1). While the level of knowledge of the 5th and 4th year students was higher than the 1st, 2nd and 3rd year students, the differences between the 5th and 4th years and 1st and 2nd years were not statistically significant. The class with the lowest level of knowledge was the 1st year. Among all students, only 17.4% of the students gave the correct answer to the question 'it may cause bowel cancer'. Fourty-one percent of them did not know that HBV is contagious during asymptomatic period.

The correct response rate was 85% for the questions about risk groups. The difference between the knowledge levels of risk groups according to the year of the school was

statistically significant (p=0.001) (Table 1). The rate was statistically lower in the 1st year, while the differences between the other groups were similar. The difference between the knowledge levels of students who see themselves at risk and those who are not at risk for HBV is statistically significant (p=0.001). Students who see themselves at risk have higher knowledge levels than the others.

The overall correct answer rate for the questions about the ways of transmission was 64%. The difference between the knowledge levels of HBV transmission routes according to the year of the school was statistically significant (p=0.001) (Table 1). The knowledge of 1st year students was statistically lower when compared to others; also there was a statistically significant difference between 5th year and both 2nd and 3rd year students. Approximately, 72% of the students thought that to share same toilet-bath may cause the transmission of the disease.

When the knowledge about prevention from HBV infection was evaluated, the correct answer rate was 72%. The differences in the levels of knowledge between subjects were statistically significant (p=0.001) (Table 1). The lowest rates were observed at the first-year students. The difference between the other groups was not statistically significant. The most wrongly answered question (57.5%) was 'avoidance of close contact (shaking hands, hugging etc) with people with HBV infection'. The lowest correct answer rate was observed in 1st and 2nd year students.

Most of the 3rd, 4th and 5th year students know how many doses of vaccine should be necessary (88%, 82%, 83%, respectively). However, only 60% percent of the students have been vaccinated, and 36% of these have been confirmed if they had acquired immunity. The vaccination rates were higher in both 4th and 5th year-students when compared to the others.

	1st year (n=55)	2nd year (n=22)	3rd year (n=32)	4th year (n=28)	5th year (n=18)	p-value
General level of knowledge	45%	55%	66%	81%	77%	0.001*
Level of knowledge about risk groups	66%	91%	94%	98%	99%	0.001*
Level of knowledge about the ways of transmission	48%	68%	69%	76%	82%	0.001*
Level of knowledge about the ways of protection	58%	74%	79%	82%	86%	0.001*

* Statistically significant at the p <0.05 level

DISCUSSION

Among the all health care workers, dental community has the highest risk of infection. While dentists and oral surgeons are in the first rank, dental students are ranked sixth (9). Hepatitis B can transmit from dentist to patient or patient to dentist, even from one patient to another in the dental office. Therefore, high level of knowledge of HBV among dental students is fundamental to protect both themselves and the patients, and also to prevent spread of

the disease. The dentists should be aware of this contagious disease and can play a role in prevention by considering each patient as a potential carrier of the virus (4).

In a study in Croatia, it was reported that the students' knowledge increase with advances in education (10). Similarly based on our findings, fifth year students had significantly better knowledge regarding HBV compared to first year. The level of knowledge significantly increased with the year of class increases. Therefore, it can be said

that there is a requirement for increasing the knowledge of Hepatitis B infection especially among the 1st year dental students. A survey conducted in India (1) showed increased awareness about HBV infection in the final year dental students when compared to 3rd year students. They did not include the 1st and 2nd year students in the study, as the dental students do not enter the clinic before 3rd year due to the dental curriculum in India. Similarly, clinical training begin at the end of 3rd year in Turkey. But, in the preclinical training started at the 1st year, the dental students are also at risk of infection, as the virus remains viable for more than 24 hours under natural circumstances and for more than one week in plastery casts which students use in their preclinical training (9). Therefore, all students in the faculty were included in our study.

In the present study, the vast majority of students (72%), regardless of the class, thought that common use of toilet-bath is one of the ways of transmission. These results suggest that they do not really know the transmission routes. Our study is consistent with the study conducted in Brazil (11) reported lack of knowledge about the transmission ways among dental students. In dental clinics, the most common route of transmission is from percutaneous exposure (needle stick injuries) and also from contact with blood or saliva of infection (1). In a survey conducted in Netherlands, 32% of the participants reported one or more needle stick incidents in the present year (3). Blood is also might be present in the aerosols produced by the dental equipments such as an ultrasonic scaler or other high speed equipments (4). Therefore, it is important to use personal protective equipment to prevent exposure to HBV. However, the most important protection tool is vaccine against HBV. High vaccination rates (90%) were reported among medical professionals (12). In our study, although overall vaccination rates were low (60%), its rates increased as the year of class increased. This increase is due to the increase in the knowledge of HBV as a result of education.

Dental students are at greater risk due to their inexperience and the lack of knowledge of HBV at the beginning of their education life. In a survey conducted in Diyarbakır, the level of knowledge among high school students was evaluated and as a result only 20.5% of them had good level of knowledge (13). Therefore, it is important to start education about infectious diseases and the way of protection at the first year of dental school, and also they should be vaccinated against HBV. Vaccination programs should be mandatory and training in universal precautions should be given to all medical and paramedical students (14). Also, antibody titers should be evaluated after vaccination to confirm the acquired immunity. In our study, 36% of the students had post-vaccination test to detect whether or not they had acquired immunity. This rate is significantly lower in a study by Batista et al. (15) in which only 5.7% of the subjects reported the post-vaccination test. The dentists should be examined to detect anti-HBS after completion of the three-doses vaccination program.

As a result, especially during the first years of their career, the dentists/dental school students are at greater risk for acquiring HBV infection, therefore the awareness should be increased by education programs starting from the first year of the school.

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