



Assessment of Knowledge and Attitude towards Hepatitis B Infection Among Dental Students in two Teaching Hospitals of Punjab, Pakistan

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ABSTRACT

Objective: To evaluate the knowledge and attitude of dental students towards hepatitis B infection. **Study Design:** A Cross Sectional Study (survey). **Settings:** University Medical & Dental College Faisalabad and FMH College of Medicine and Dentistry Lahore. **Duration:** Two months from February 1 to March 31, 2018. **Methodology:** A structured questionnaire consisted of total 27 open and closed ended questions were distributed among 200 first year and final year BDS students. The aim of questionnaire was to assess knowledge and attitude towards hepatitis B infection. The questions were divided into three different sections; Section A: Demographic Detail; Section B: Knowledge Questions and Section C: Attitude Questions. **Results:** Out of 200 distributed questionnaires 191 (95.5%) were collected and analyzed. The most of the participants were females 149 (78%) students and the number of male students was only 42 (22%) with male to female ratio 1:3.5. The age of the participants ranged from 17-25 years (mean age: 21.4 years). Among 191 participants 99 (52%) students were from first year BDS class and 92 (48%) from final year BDS class. The majority of study participants (73%) had adequate knowledge on hepatitis B infection and its mode of transmission. However, results revealed that there are still misinterpretations regarding the attitudes of participants towards hepatitis B infected patients and only 44% participants have adequate concept regarding this. **Conclusion:** The results of this study showed that the overall level of knowledge about hepatitis B infection among the first year and final year BDS students is fairly satisfactory. However, there are still misconceptions regarding the attitudes, which reflect the wrong impression of the disease among students. This calls for well-structured health education programs stressing on such misconceptions.

Keywords: Hepatitis B, Attitude, Knowledge, Dental students.

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INTRODUCTION

Hepatitis B virus (HBV) infection is an increasing world-wide health problem, affecting more than one third of the world's population.^{1,2} In Pakistan the prevalence of HBV is increasing day by day.² According to the figures published by world health organization four million people in Pakistan have already diagnosed with HBV infection.^{2,3}

The main routes for the transmission of HBV infection are unprotected sexual intercourse, unscreened blood transfusions, use of contaminated needles, body tattooing and piercings, treatment by acupuncture, patients on dialysis due to kidney failure, from infected mother to the child.^{3,4}

In medical and dental set-up the major source of transmission is from needle and wire stick injuries and due to direct contact of saliva or blood from infected patients.^{1,5} According to data published by World health organization in Pakistan the major causes of HBV infection are due to inadequate sterilization of instruments, reuse of needles by health professionals and due to unscreened blood transfusions.²

The health care workers, working in close proximity to infected patients and their body fluids are at great risk of occupational exposure to HBV infection.⁶ The risk of occupational exposure increases in developing countries where the incidence of HBV is high in general public and health care facilities are poor with an inadequate waste disposal methods.¹ Worldwide there are about 35 million health care workers and estimated incidence of

percutaneous injuries is approximately 66,000 leading to HBV infection per annum.^{3,7}

The incidence of hepatitis B virus infection can be reduced by adopting the universal precautions like the use of protective barriers which includes mask and gloves, proper sterilization of used medical instruments, adequate hospital system for waste management and vaccination of health care workers and general public.^{1,2,5} Other methods to reduce the incidence of HBV infection is by giving proper education regarding its methods of transmission to the general public, all health care professionals and students.^{8,9}

Medical students can play a very important part in preventing the spread of HBV infection by enhancing the disease knowledge among themselves and the patients they treat on daily basis.⁷ However various studies have confirmed that there is a poor knowledge among health professionals regarding the risks of occupational exposure to HBV infection.^{1, 6, 10} A study conducted by Lao democratic People's Republic has shown that 86.5% of medical students had poor knowledge on modes of HBV transmission and risks associated with the disease. A similar study From Cameroon has highlighted poor practice among the participants of the study with only 10% vaccination rate against HBV and 55.9% accidental exposure to blood.^{1,7,11} Therefore, our study had the objective to assess the knowledge and attitude of dental students in two teaching hospitals of Punjab, towards hepatitis B infection.

METHODOLOGY

Study Design: Cross Sectional Study (Survey).

Settings: University Medical & Dental College Faisalabad and Fatima Memorial Hospital College of Medicine and Dentistry Lahore Pakistan.

Duration: Two months February 1 to March 31, 2018.

Sample Technique: Convenient sampling technique.

Sample Size: Study participants consisted of total 200 students out of which 191 participants completed the questionnaire.

Inclusion and Exclusion Criteria: The students who were present at the day of particular study and were willing to participate were included in the study and those who were not willing to participate were excluded from the study.

Methods: The project was approved by the institutional ethical review committee and all students from the first and final year of the BDS course from the academic year 2017-2018 were included in the study on voluntary basis. Instructions were advised and purpose of the study was explained to all the participants prior to attempt the questionnaire.

Questionnaire: After literature search and preliminary discussion with panel of experts a questionnaire was developed consisting of 27 open and closed ended questions aimed at assessing knowledge and attitude of dental students about HBV. Informed consent was taken from the study participants prior to attempt the questionnaire and confidentiality of data was maintained. Data were collected by using a hard copy of questionnaire.

These questions were divided into three different sections; Section A: Demographic Detail; Section B: Knowledge Questions and Section C: Attitude Questions. Section B and C had Likert based options like Agree, Disagree and Undecided. The survey took an average only 10 to 15 minutes to complete.

Statistical Analysis: In order to eliminate the intra-observer error, the data collection process was closely supervised by the

same observers at their respective institutes who reviewed and completed the data collection questionnaires. The collected data were entered and analyzed using SPSS version 21.0 (SPSS Inc., Chicago, IL, USA). Data were expressed in frequencies and percentages.

RESULTS

Total 200 questionnaires were distributed. Out of these 191 participants completed the questionnaire with an overall response rate of 95.5%. The majority of the participants were females 149 (78%) students and the number of male students was only 42 (22%) with male to female ratio was found to be 1:3.5. The age of the participants ranged from 17-25 years (mean age: 21.4). Among 191 participants 99 (52%) students were from first year BDS class and 92 (48%) from final year BDS class. Majority of the students were from urban area 81.6% and rest participants were from rural area 18.4 % (Table: 1).

Table 1: General characteristics of the study participants

Variables		Number of subjects (%)
Gender	Male	42 (22%)
	Female	149 (78%)
Age	17-20	102 (53.4%)
	21-25	89 (46.6%)
Year of Study	1 st year	99 (52%)
	Final Year	92 (48%)
Residence	Rural	35 (18.4%)
	Urban	156 (81.6%)

Overall majority of study participants (73%) had adequate knowledge on hepatitis B infection and its mode of transmission. Among the students from both the colleges the knowledge level regarding hepatitis B infection was better in final year BDS class as compared to first year BDS class (Table 2).

Table 2: Knowledge of hepatitis B among the study population

Questions	Class	FMH			UMDC		
		Agree	Disagree	Undecided	Agree	Disagree	Undecided
Carrier of hepatitis B are at risk of infecting others	1 st year	47(94%)	3(6%)	-	44(89.8%)	5(10.2)	-
	Final Year	37(88%)	4(9.5%)	1(2.4%)	46(92%)	4(8%)	-
Can hepatitis B spread through casual contact such as holding of hands, sharing of toilet and drinking in the same glass	1 st year	33(66%)	16(32%)	1(2%)	25(51%)	24(49%)	-
	Final Year	14(33%)	27(64%)	1(2.4%)	21(42%)	27(54%)	2(4%)
Can hepatitis B spread through contact with open wound	1 st year	45(90%)	4(8%)	1(2%)	38(77.6%)	7(14.3%)	4(8.2%)
	Final Year	32(76.2%)	8(19%)	2(4.8%)	44(88%)	5(10%)	1(2%)
Can hepatitis B have transmitted by blood and blood products	1 st year	45(90%)	4(8%)	1(2%)	43(87.8%)	6(12.2%)	-
	Final Year	35(83.3%)	7(16.7%)	-	43(86%)	7(14%)	-
Can hepatitis B have transmitted by un-sterilized syringes, and surgical instruments	1 st year	43(86%)	4(8%)	3(6%)	46(93.9%)	2(4.1%)	-
	Final Year	35(83.3%)	7(16.7%)	-	47(94%)	2(4%)	-
Can hepatitis B have transmitted through saliva	1 st year	44(88%)	5(10%)	1(2%)	21(42.9%)	20(40.8%)	8(16.3%)
	Final Year	23(54.8%)	16(38.1%)	3(7.1%)	40(80%)	7(14%)	3(6%)
Is hepatitis B sexually transmitted disease	1 st year	26(52%)	23(46%)	1(2%)	23(46.9%)	20(40.8%)	5(10.2%)
	Final Year	24(57.1%)	16(38.1%)	2(4.8%)	42(84%)	5(10%)	3(6%)

Can hepatitis B virus cause liver cancer	1 st year	38(76%)	9(18%)	3(6%)	22(44%)	14(28.6%)	13(26.5%)
	Final Year	31(73.8%)	9(21.4%)	2(4.8%)	40(80%)	8(16%)	2(4%)
Is hepatitis B vaccine available	1 st year	36(72%)	10(20%)	4(8%)	31(63%)	13(26.5%)	5(10.2)
	Final Year	34(81%)	7(16.7%)	1(2.4%)	43(86%)	7(14%)	-
Does hepatitis B vaccine provide protection	1 st year	40(80%)	5(10%)	5(10%)	32(65.3%)	8(16.3%)	9(18.4%)
	Final Year	38(90.5%)	3(7.1%)	1(2.4%)	40(80%)	6(12%)	4(8%)
Do you think hepatitis B virus has laboratory test	1 st year	42(84%)	2(4%)	6(12%)	39(79.6%)	2(4.1%)	-
	Final Year	39(92.9%)	2(4.8%)	-	49(98%)	-	1(2%)
Is hepatitis B curable/preventable	1 st year	42(84%)	5(10%)	3(6%)	37(75.5%)	6(12.2) %	6(12.2) %
	Final Year	34(81%)	5(11.9%)	3(7.1%)	46(92%)	1(2%)	3(6%)
Do you think that hepatitis B has post-exposure prophylaxis	1 st year	27(54%)	6(12%)	17(34%)	15(30.6%)	4(8.2%)	30(61.2%)
	Final Year	31(73.8%)	5(11.9%)	6(14.3%)	32(64%)	13(26%)	5(10%)

On the questions regarding the attitude of students towards hepatitis B infected patients, only 44% total participants have adequate concept regarding this. These misconceptions were also more common among the junior dental students when compared to those in final year students as documented in Table 3.

Table 3: Attitudes to hepatitis B infected patients among the study population

Questions	Class	FMH			UMDC		
		Agree	Disagree	Undecided	Agree	Disagree	Undecided
Would you accept hepatitis B patient in the same class as yours	1 st Year	35(70%)	10(20%)	5(10%)	31(63.3%)	12(24.5)	5(10.2%)
	Final Year	29(69%)	11(26.2%)	2(4.8%)	40(80%)	8(16%)	2(4%)
You don't mind sharing food with hepatitis B patient	1 st Year	19(38%)	26(52%)	4(8%)	21(42.9%)	27(55.1%)	1(2%)
	Final Year	19(45.2%)	20(47.6%)	3(7.1%)	28(56%)	22(44%)	-
Chronic infection with hepatitis B is shameful	1 st Year	9(18%)	40(80%)	1(2%)	3(6.1%)	44(88%)	6(12%)
	Final Year	11(26.2%)	30(71.4%)	1(2.4%)	3(6%)	44(88%)	3(6%)
Shaking hand/hugging hepatitis patient makes you uncomfortable	1 st Year	18(36%)	28(56%)	4(8%)	11(22.4%)	35(71.4%)	3(6.1%)
	Final Year	9(21.4%)	30(71.4%)	3(7.1)	14(28%)	34(68%)	2(4%)
Caring for hepatitis patient makes you uncomfortable	1 st Year	12(24%)	35(70%)	2(4%)	11(22.4%)	34(69.4%)	4(8.2%)
	Final Year	12(28.6%)	30(71.4%)	-	6(12%)	41(82%)	3(6%)
Hepatitis infected doctors/dentist/nurses should be allowed to work	1 st Year	22(44%)	24(48%)	4(8%)	18(36.7%)	27(55.1%)	4(8.2%)
	Final Year	20(47.6%)	22(52.4%)	-	21(42%)	25(50%)	4(8%)
Medical/dental personal should refuse treatment to hepatitis patient	1 st Year	16(32%)	32(64%)	2(4%)	12(24.5%)	35(71.4%)	2(4.1%)
	Final Year	11(26.2%)	29(69%)	1(2.4%)	4(8%)	45(90%)	1(2%)
All patients should be tested or hepatitis infection before they receive health care	1 st Year	45(90%)	5(10%)	-	42(85.7%)	6(12%)	1(2%)
	Final Year	30(71.4%)	10(23.8%)	2(4.8%)	45(90%)	3(6%)	2(4%)
Following infection control guidelines will protect from being infected with hepatitis infection at work	1 st Year	46(92%)	3(6%)	1(2%)	42(85.7%)	4(8.2%)	3(6.1%)
	Final Year	34(81%)	5(11.9%)	3(7.1%)	48(96%)	1(2%)	1(2%)
In Pakistan hepatitis vaccination must be mandatory for all health care workers	1 st Year	45(90%)	4(8%)	-	42(85.7%)	3(6.1%)	4(8.2%)
	Final Year	31(73.8%)	4(9.5%)	7(16.7%)	49(98%)	1(2%)	-

DISCUSSION

Occupational exposure to blood-borne pathogens like HBV infection remains a notable threat to health care workers mainly in third world countries like Pakistan where this infection is highly widespread.^{12,13}

In common, health care workers and the general society have been reported to have negative attitudes towards people with HBV infection and usually first year medical and dental students show considerable fear of transmission of disease, obstructive emotions and professional resistance.^{14,15} There are numerous aspects related with negative HBV infection attitudes like; broad based ideology, a low level of knowledge, young age, panic, over-value risk assessment, not knowing anyone with HBV infection and lacking the encounter of caring for patient with HBV infection.^{8,16}

In this study, out of 200 questionnaires distributed among the participants 191 (95.5%) questionnaires were returned and analyzed. The majority of participants were female (78%) in this study. This female supremacy was also reported by other studies like Ali A *et al*² and Paul P *et al*³ who reported 65.6% and 56% females in their respective studies.^{2,17}

The age of the participants in our study ranged from 17-25 years with the mean age of 21.4 years. Mean age of the participants in other studies were as follows: 22.6 years in the study of Ramakrishnan *et al*⁵ and 23.2 years in the study of Ibrahim N *et al*.⁷

The findings of this survey are generally satisfactory despite some disappointing facts on basic knowledge for example 58.6% students from first year BDS class and 38% from final year BDS class think that HBV infection can spread through casual contact whereas 47% students were undecided about

the question of hepatitis B post exposure prophylaxis availability. This is in contrast to the study conducted by Ghomraoui FA *et al*⁶ who reported that 76 % students were well aware about the post exposure prophylaxis management of hepatitis B. Studies like Abdela A *et al*¹ also reported that 61% of first year and 73% students of final year BDS class were aware about the mode of transmission of hepatitis B infection.^{1,6}

According to results of this study it was also not encouraging to find that vast majority of participants have negative attitude towards hepatitis B infected persons for example in a question regarding sharing of food with hepatitis B patients 53% students from first year and 46% students from final year BDS class were disagree in response to this question. Whereas in question regarding healthcare workers infected with hepatitis B should be allowed to work or not, 51.5% students from first year and 51% students from final year were disagree with this.

On the other hand it was encouraging to find that the vast majority of the participants considered prevention and control remain the main methods to control HBV and in response to the question that in Pakistan hepatitis vaccination must be mandatory for all health care workers 88% from first year and 87% from final year agreed. These results are comparable with the results of Ali A,² Al-Jabri AA *et al*⁸ and Paul P *et al*.³

CONCLUSION

According to results of this study, the overall level of knowledge about hepatitis B infection among the first year and final year BDS students is fairly satisfactory. The majority of students showed some knowledge regarding HBV transmission, risk behaviors and prevention. However, there are still misconceptions regarding the attitudes, which reflect a false perception of the disease among students and has the potential to considerably affect the quality of patient care and the doctor-patient relationship.

LIMITATIONS

Limitation of this study was; that it was conducted in only two teaching hospitals of Punjab, Pakistan.

Therefore, a larger sample size study should be done to make a conclusive finding of knowledge and attitude of upcoming dental surgeons towards hepatitis B infection.

SUGGESTIONS / RECOMMENDATIONS

This calls for well-structured health education programs stressing on such misconceptions. Frequent workshops and seminars should be organized in order to provide up to date knowledge about HBV infection and means of prevention to both healthcare professionals and students.

CONFLICT OF INTEREST / DISCLOSURE

No conflict of interest declared.

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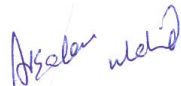

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