

## KNOWLEDGE, ATTITUDE AND PRACTICE OF HEPATITIS B AMONG DENTAL AND MEDICAL STUDENTS OF PRIVATE MEDICAL UNIVERSITY, KARACHI

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### ABSTRACT

*The aim of this study was to evaluate the knowledge, attitude and behaviour of hepatitis B and infection control of dental and medical undergraduates of private medical university, Karachi, Pakistan. It was the cross sectional survey study. 227 clinical students were approached. A self-structured questionnaire related to KAP of HB was used and data collected through survey questionnaire from each individual. Response rate was 100%. Data were entered and analyzed using Stata software. There were 84 (37%) students from dental college and 143 (63%) students from medical section. There were 92 (41%) male and 125 (59%) female students. The mean level of knowledge, attitude and practice of HB in medical and dental graduates was 58% and 65% respectively. The dental graduates had overall high KAP score than medical undergraduates and the results were statistically significant. Description of the frequency of knowledge, attitude and practice of hepatitis B and infection control has revealed that dental students follow preventive guidelines of transmission during treatment procedure and were more cautious during practice than medical students.*

**Key Words:** *Hepatitis B, Knowledge, Attitude, Practice, infection control, Dental and Medical students.*

### INTRODUCTION

Medical and dental health care professional are more vulnerable to various infections like hepatitis B and hepatitis C viruses, staphylococci, streptococci, herpes simplex virus types 1, human immunodeficiency virus (HIV), mumps, influenza, rubella and other prevalent infectious agents.<sup>1</sup> Hepatitis B is an infection in which there is inflammation of the liver caused by hepatitis B virus and transmitted through contact with the blood or other body fluids of a person who has the virus.<sup>2</sup> It is the foremost responsible for worldwide cause of infections, cirrhosis and carcinoma of the liver, Hepatitis B infection is 10th leading cause of death worldwide more than 350 million people are

affecting from it and are chronic carriers, 270 million are from developing countries, 75% weighted from Asian continent.<sup>3,4</sup>

HBV is transmitted by the skin prick with an infected, contaminated needle and syringe during the surgical and dental procedures. HBV can be prevented by strictly routine use of appropriate barrier precautions to prevent skin and mucous membrane exposure when handling blood and other body fluids of all patients.<sup>5</sup> Health care workers are at increased risk of cross infection as well as the transmission of HBV. Risk factor can be prevented, if health worker include routine use of barrier techniques (gloves, masks), sterilization of dental instruments, vaccination against HBV.<sup>6</sup> In dental setup hands are considered the major source of cross infections, the potential remnants of blood retain on hands till five days until meticulous cleaning of contaminated hands. Wearing gloves in dental setup has been advised for the prevention of disease to patients and other staff.

Medical and Dental students undergo serious threats during their clinical training due to possibility of exposure to blood-borne pathogens with the risk of infection with Hepatitis B virus. Large number of

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population infected by Hepatitis B virus increases the risk for medical and dental students to be infected.<sup>7</sup>

The purpose of this study was to evaluate the level of knowledge, attitude and behavior and infection control of hepatitis B of dental and medical students in Private Medical University, Karachi towards Hepatitis B and infection control.

## METHODOLOGY

Cross-sectional survey was conducted from April 2014 to June 2014 in under graduate medical and dental clinical students in private medical university, Karachi. Convenience sampling method was used for participant's enrolment in the study. Ethical permission was taken from the concerned medical and dental colleges officials before the start of the study. Third year and final year students were selected from the medical college and third year and final year students from the dental college.

A self-structured close ended questionnaire which had been implemented in Turkey in dental students to assess the knowledge, attitude and behaviour and towards hepatitis B infection control was selected with the kind permission of the author.<sup>9</sup> Surveys questionnaire was distributed and collected from the students in their respective lecture halls.

Statistical software, Stata SE/11 was used for the data entry and analysis. Descriptive statistics were presented in frequencies, percentages, mean, standard deviation and range. Chi-square and fisher exact test was used for the differences in the categories of knowledge, attitude and behaviour of hepatitis B related questions and between independent variables. T-test was used for the comparison of mean score between groups. Level of p-value less than 0.05 was used for the statistical significance.

## RESULTS

In current survey medical and dental education students were invited to take part in the study, 227 students filled the questionnaire, the response rate was 100%. There were 84(37%) students from dental section and 143(63%) students from medical section. Socio-demographic data presented in Table 1.

Table 2 shows the frequency of answers that has been selected correctly by medical and dental respondents from the knowledge based questionnaire about the hepatitis B and infection control. The overall mean knowledge level of hepatitis B in medical and dental was 58 SD (27.36) and presented in Fig 1.

Data in Table 3 shows the frequency of distribution of answers chose by the medical and dental students regarding the attitude of hepatitis B and infection con-

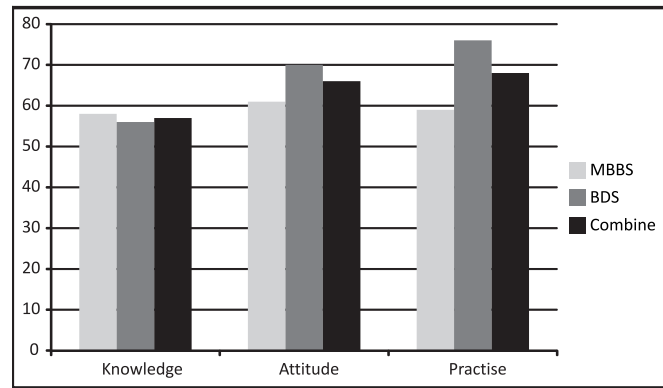


Fig 1: Knowledge, attitude and practice of hepatitis B and infection control among the medical and dental students.

trol. The mean attitude level of hepatitis B in medical and dental students was 65.66 % and is presented in Fig 1.

Table 4 shows the data regarding the practice of hepatitis B and infection control among the medical and dental students. The overall mean level of hepatitis B practice and infection control was 67% and the percentage was 59% in MBBS students and 76% in BDS students and is presented in Fig 1. The results showed that in general dental graduates has overall higher score level of attitude, knowledge and behavior and infection control as compared to MBBS students and the results are statistically significant with p value 0.0092.

## DISCUSSION

The frequency of male and female students who participated in the research was similar to the studies done in Iran<sup>10</sup> and in south Nigeria<sup>11</sup> and the mean age of the participating students was similar to study done in the city of Rasht.<sup>12</sup>

National survey on prevalence of hepatitis b revealed the occurrence of 2.5% HB Ag among 47043 people living in Pakistan.<sup>13</sup> In our survey 85% students believed that hepatitis B is prevalent disease in Pakistan. Hepatitis b frequency are mostly found higher in developing countries<sup>14</sup> in contrast the level are lowest in numbers in developed countries.<sup>15</sup>

Ghanaei et al found that frequency of students who answered in positive for the questions of spread of Hepatitis B via blood contact, sexual transmission and through blood transmission was 86.3%, 65.45% and 82.1% respectively.<sup>16</sup> In contrast, knowledge of transmission of hepatitis b by means of sexual contact, blood transfusion and secretion were 93% in this study.

It has been observed in present study that an overall lack of knowledge regarding the incubation period of hepatitis B in students were similar to the results

TABLE 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS BY MODE OF AGE AND GENDER

Characteristics	MBBS Numbers %		BDS Numbers %		Total no (%)	P value
Age in years						
19-20	4	2.80	23	27.38	27(11.89)	.001
21-22	60	41.96	40	47.62	100 44.05	
23-24	74	51.75	20	23.81	94 (40.41)	
25-26	5	3.50	1	1.19	6 (2.64)	
Gender						
Male	59	41.26	33	39.29	92(41)	NS
Female	84	58.74	51	60.71	135(59)	
Total	143	100	84	100	224 (100)	

TABLE 2: FREQUENCY DISTRIBUTION OF KNOWLEDGE AMONG MEDICAL AND DENTAL STUDENTS

Variable	True	False	No idea	P-value
1 Chronic HBV infection occurs after the development of effective immune response against viral antigens in infected person.				
MBBS	85(59.44)	32(22.38)	26(18.18)	.019
BDS	38(45.24)	17(20.24)	29(34.52)	
2 Hepatitis B vaccine is active and live vaccine.				
MBBS	69(48.25)	42(29.37)	32(22.38)	0.016
BDS	57(67.86)	15(17.86)	12(14.29)	

TABLE 3: FREQUENCY DISTRIBUTION OF ATTITUDE AMONG MEDICAL AND DENTAL STUDENTS

	Very imp	Important	It doesn't matter	Donst imp	P-value
3 Patient contaminated with HBV must be called as the last patient					0.24
MBBS	32(22.38)	46(32.17)	42(29.37)	23(16.08)	
BDS	31(36.90)	15(17.86)	20(23.81)	18(21.43)	
4 Whole medical staff working with blood and body fluids in contact should be vaccinated					0.014
MBBS	104(72.73)	31(21.68)	5(3.50)	3(2.10)	
BDS	75(89.29)	9(10.71)	0(0)	0(0)	
5 Hepatitis and aids patients' information regarding systemic condition must be recorded on the patient file.					0.003
MBBS	91(63.64)	45(31.47)	5(3.50)	2(1.40)	
BDS	71(84.52)	13(15.48)	0(0)	0(0)	

TABLE 4: FREQUENCY DISTRIBUTION OF ATTITUDE AMONG MEDICAL AND DENTAL STUDENTS

		Always	Frequently	Some Times	Rarely	Never	P value
6	I wear gloves before touching membranes and non-intact skin of patient.						.016
	MBBS	97(67.83)	28(19.58)	10(6.99)	4( 2.80)	4(2.80)	
	BDS	73(86.90)	9(10.71)	1(1.19)	1(1.19)	0(0)	
7	I wash my hands before and after treatment procedure.						.004
	MBBS	90(62.94)	33(23.08)	13(9.09)	3(2.10)	4(2.80)	
	BDS	72(85.71)	8(9.52)	3(3.57)	1(1.19)	0(0.00)	
8	I wear goggles during treatment procedures of patients.						.035
	MBBS	58(40.56)	29(20.28)	27(18.88)	12(8.39)	17(11.89)	
	BDS	48(57.14)	13(15.48)	13(15.48)	8(9.52)	2(2.38)	
9	I use protective gowns to protect myself when treating patient.						.025
	MBBS	89(62.24)	26(18.18)	14(9.79)	7(4.90)	7(4.90)	
	BDS	65(77.38)	12(14.29)	2(2.38)	5(5.95)	0(0.00)	
10	I use protective mask to protect myself when treating patient.						.001
	MBBS	76(53.15)	25(17.48)	23(16.08)	9(6.29)	10(6.99)	
	BDS	72(85.71)	9(10.71)	1(1.19)	2(2.38)	0(0.00)	
11	I bend needles after injections and discard them into a medical waste container.						.035
	MBBS	96(67.13)	22(15.38)	11(7.69)	6(4.20)	8(5.59)	
	BDS	69(82.14)	9(10.71)	2(2.38)	4(4.76)	0(0.00)	
12	I check the indicator showing whether or not instruments have been sterilized before using them in a procedure.						.027
	MBBS	73(51.05)	32(22.38)	14( 9.79)	20(13.99)	4(2.80)	
	BDS	60(71.43)	9(10.71)	6(7.14)	9(10.71)	0(0.00)	

TABLE 5: MEAN, STANDARD DEVIATION, AND MINIMUM AND MAXIMUM SCORES OF KNOWLEDGE, ATTITUDE, AND PRACTICE VIS-À-VIS HEPATITIS B INFECTION

	MBBS Mean(S.D)	BDS Mean(S.D)	Total Mean(S.D)
Mean knowledge score	58.13(26.73)	56.77(29.17)	57.45(27.75)
Mean Attitude score	61.95(17.14)	70.83(18.07)	66.39(17.14)
Mean Practice score	59.65(9.86)	76.42( 10.90)	68.03( 9.66)

observed in dental students in Ankara University study.<sup>9</sup>

The results of the current study about the comparison of hepatitis B and HIV virulence showed deficiency in knowledge, 58% had answer positively and the results were dissimilar from the survey done in male dental students at dental college in Kingdom of Saudi Arabia<sup>17</sup> where the frequency was 83%.

For over the two decades ago vaccination program was initiated to overcome the prevalence and burden of hepatitis patients in population and since then it is available all over the country.<sup>18,19</sup> The level of knowledge of hepatitis b vaccine program was 71.35% and the results were similar to research done among the medical students of Karachi.<sup>20</sup>

A study was conducted to evaluate the magnitude of awareness regarding transmission of Hepatitis B amongst the Dental and medical students in private medical university. Karachi, Pakistan. This study also focused on the practice of dental and medical health care professionals regarding the protective and preventive measures to prevent the transmission of hepatitis B and infection control.

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