Print ISSN: 2319-2003 | Online ISSN: 2279-0780

## **IJBCP** International Journal of Basic & Clinical Pharmacology

DOI: http://dx.doi.org/10.18203/2319-2003.ijbcp20175213

### **Original Research Article**

# Perspectives of students in a medical school regarding Hepatitis B and C in North West India

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**Received:** 06 October 2017 **Accepted:** 09 November 2017

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#### **ABSTRACT**

**Background:** Hepatitis B and Hepatitis C are among the major public health problems in the world and students in the medical schools as a group is highly vulnerable to these infections. The current study aimed to assess the perspectives (knowledge, attitude and practices) of these students about both Hepatitis B and Hepatitis C.

**Methods:** The present cross-sectional study was conducted in a medical school in northwest India using a self administered questionnaire. This study was carried out in the month of July 2017 using a convenience sample of Pre-final MBBS students.

**Results:** The knowledge of the respondents was found to be good on most of the parameters except for living with Hepatitis B/C patient being a risk factor for disease and Hepatitis B being curable. On the same pattern, attitudes were also found to be positive on most of the parameters except willingness to undergo screening for the diseases. Practices of the respondents were also adequate except for use of gloves while examining a patient/collecting blood sample. An important positive practice observed was that 92.8% of the respondents were protected against Hepatitis B.

**Conclusions:** The study has concluded that perspective of medical students towards Hepatitis B and Hepatitis C are reasonably good and areas of concemneed to be taken care of. Both these diseases remain a challenge for health community in general and medical students in particular due to their being an occupational hazard, so the need for infection control training before they start clinical education is strongly recommended.

Keywords: Hepatitis B, Hepatitis C, Medical students, Northwest India

#### INTRODUCTION

The term "hepatitis" implies injury to the liver by inflammatory cells, a condition caused by numerous origins. All inclusive, most cases of hepatitis are caused by viruses, predominantly the hepatitis B and C viruses. Estimated 325 million people are living with chronic hepatitis infections (HBV or HCV) worldwide making Hepatitis a major public health problem across the world. As per estimates one in twelve people in the world is chronically infected with either Hepatitis B or C. About 78% of all the primary liver cell carcinoma and 57% of all

cases of liver cirrhosis are due to Hepatitis B and C.<sup>2</sup> An estimated 257 million people are living with Hepatitis B virus infection (defined as HBs Antigen positive). The range of geographical distribution of Hepatitis B varies from 0.7% to 6.2% in different regions of the world depending upon the endemicity of disease.<sup>3</sup> Globally an estimated 71 million people have chronic Hepatitis C infection. World Health Organization (WHO) estimates reveal its global prevalence varies from 0.5% to 2.3%.<sup>4</sup>

Health care workers (HCWs) are at increased risk of exposure to both these diseases especially Hepatitis B. The

situation is particularly challenging in the developing countries where the prevalence is high in the general population and health care settings are far from satisfactory. Medical students are equally susceptible to risk of HBV and HCV due to various factors like lack of experience, insufficient training, duty overload, fatigue etc.<sup>5,6</sup>

Both Hepatitis B and C infection can be prevented by adhering to universal precautions like use of gloves, proper sterilization of medical equipment, proper hospital waste management and vaccination. Further post exposure prophylaxis can be used for prevention of HBV after accidental exposure to contaminated blood or body fluids. Health care personnel, including medical students, should have comprehensive knowledge of viral hepatitis infections, significance of vaccinations and practice of hygienic measure together with specific protective measures.

Knowledge, Attitude and Practices (KAP) study is a useful tool to design public health policies taking into account the awareness, beliefs and health seeking behaviour of the atrisk population. Although some authors have conducted K, A and P studies regarding Hepatitis B among medical students in different parts of India, but the data in our state was rather scarce. Therefore, the present study was conducted with the aim to assess the perspectives (KAP) of the medical students in a medical school in North West India.

#### **METHODS**

The present descriptive cross-sectional study was conducted among Pre-final MBBS students of a Government Medical College in Jammu region of J&K state, India. The study conducted in the month of July 2017 aimed to assess perspective of undergraduate medical students towards Hepatitis B and Hepatitis C. Due permission was sought from Institutional Ethical Committee before the study was carried out. All the students were briefed about the purpose of the study and confidentiality of the information was ensured. Informed verbal consent was taken from all the respondents.

The data collection tool was a predesigned self-administered questionnaire. The questionnaire was prepared by the faculty members of Community Medicine and help was sought from faculty of Internal Medicine and Microbiology for its validation. The questionnaire was pretested during a pilot study which was conducted among a group of 25 Final year MBBS students who eventually were not part of the study group. The results of the pre-test were evaluated and some modifications into the final version of the questionnaire were incorporated.

The questionnaire had 29 items grouped into four sections: socio-demographic and history of hepatitis, knowledge, attitude and practice sections.

The data thus collected was tabulated and analysed. Chi square test was conducted to determine the association of independent variables with the outcome variables of interest which included knowledge, attitude and practices related to Hepatitis B and Hepatitis C. P-value <0.05 was considered as significant.

#### **RESULTS**

In all, 140 students were administered the questionnaire and majority of them (52.8%) were females. Of the total, 51.4% of the respondents belonged to the Hindu religion and 55.7% were residing in the urban areas. Regarding history of Hepatitis B infection in the family, only 12.14% of the respondents replied in the affirmative (Table 1).

Table 1: Demographics including family history of Hepatitis among the respondents (n=140).

Socio demograph variable	nic	Number	Percentage
Age in completed	21 years	21	15.00%
	22 years	90	64.29%
	23 years	23	16.43%
years	24 years	06	4.28%
C 1	Male	66	47.14%
Gender	Female	74	52.86%
Religion	Hindu	72	51.43%
	Muslim	59	42.14%
	Sikh	07	05%
	Others	02	1.43%
Residence	Urban	78	55.71%
	Rural	62	44.29%
Family income per month (in Rupees)	<50000	38	27.14%
	>50000	102	72.86%
Have you or	Yes	17	12.14%
your family member ever suffered from Hepatitis B/Hepatitis C infection	No	123	87.86%

The results showed that 95% of the respondents were aware of Hepatitis B vaccine availability. Male students had better knowledge of mode of spread of the disease (p <0.05). More male than female students said that living with a Hepatitis B/ Hepatitis C patient was a risk factor (p <0.05) while both male and female students had good knowledge regarding the diagnosis of Hepatitis B and Hepatitis C. Both group of students had good knowledge about treatment, post exposure prophylaxis and role of screening of blood transfusion (p >0.05). Higher proportion of male students had correct knowledge about Hepatitis B being curable than their female counterparts and this difference was found to be statistically significant (p<0.05) (Table 2).

Table 2: Knowledge of the respondents regarding hepatitis B (n=140).

Question	Dognongo	Males	Females	Total	P	
Question	Response	(n=66)	(n=74)	(n=140)	value	
Is honotitis Dynassina available	Yes	65(98.48)	68(91.89)	133(95.00)	0.15	
Is hepatitis B vaccine available	No	01(1.52)	06(8.10)	07(5.00)	0.13	
Modes of spread of Hepatitis B and Hepatitis C is	Yes	60(90.91)	54(72.97)	114(81.43)	0.00	
blood/sexual contact	No	06(9.09)	20(27.03)	26(18.57)	0.00	
	Yes	62(93.94)	55(74.32)	117(83.57)	0.01	
Carriers of hepatitis B can transmit infection	No	04(6.06)	19(25.68)	23(16.43)	0.01	
Hepatitis B/ Hepatitis C can be transmitted by	Yes	61(92.42)	67(90.54)	128(91.43)	0.60	
unsterilized syringes, needles and surgical instruments	No	05(7.58)	07(9.46)	12(8.57)	0.69	
Living with Hepatitis B / Hepatitis C patient is a risk	Yes	50(75.76)	27(36.49)	77(55.00)	0.00	
factor for the disease	No	16(24.24)	47(63.51)	63(45.00)	- 0.00	
Medical history and laboratory tests help in the	Yes	64(96.97)	69(93.24)	133(95.00)	0.54	
diagnosis of Hepatitis B/ Hepatitis C	No	02(3.03)	05(6.76)	07(5.00)	0.54	
Treatment of Hepatitis B includes immunotherapy/	Yes	62(93.94)	67(90.54)	129(92.14)	0.45	
Hepatitis B vaccination	No	04(6.06)	07(9.46)	11(7.86)	0.45	
Doct armaguna muanhrularia ia availahla in Hanatitia D	Yes	56(84.85)	63(85.14)	119(85.00)	0.06	
Post exposure prophylaxis is available in Hepatitis B	No	10(15.15)	11(14.86)	21(15.00)	0.96	
Screening of blood transfusion and Hepatitis B	Yes	63(95.45)	68(91.89)	131(93.57)	0.61	
vaccination help in prevention	No	03(4.55)	06(8.11)	09(6.43)	0.61	
H 421 D 1 1/4 4 1	Yes	18(27.27)	35(47.29)	53(37.86)	0.01	
Hepatitis B can be cured/treated	No	48(72.73)	39(52.70)	87(62.14)	0.01	
Honotitis D vaccina is safe for all ages	Yes	58(87.88)	63(85.14)	121(86.43)	0.63	
Hepatitis B vaccine is safe for all ages	No	08(12.12)	11(14.86)	19(13.57)		

Table 3: Attitudes of the respondents regarding hepatitis B (n=140).

Question	Response	Males (n=66)	Females (n=74)	Total (n=140)	P value	
Willingness to get screened for Hepatitis B and Hepatitis C	Yes	36(54.55)	60(81.08)	96(68.57)	0.00	
	No	30(45.45)	14(18.92)	44(31.43)	0.00	
Do you accept Hepatitis B/ Hepatitis C	Yes	43(65.15)	63(85.14)	106(75.71)	- 0.00	
infected students in your class	No	23(34.85)	11(14.86)	34(24.29)	- 0.00	
I have concern in shaking hands/hugging a person infected with Hepatitis B/ Hepatitis C	Yes	46(69.69)	65(87.84)	111(79.29)	- 0.00	
	No	20(30.31)	09(12.16)	29(20.71)	0.00	
I wouldn't mind sharing shaving blades/tooth brushes with others	Yes	06(9.09)	08(10.81)	14(10.00)	0.72	
	No	60(90.91)	66(89.19)	126(90.00)	- 0.73	
Should Hepatitis C patient be vaccinated for	Yes	59(89.39)	65(87.84)	124(88.57)	- 0.77	
Hepatitis B	No	07(10.61)	09(12.16)	16(11.43)	- 0.77	
Should all health care workers receive Hepatitis B vaccination	Yes	63(95.45)	70 (94.59)	133(95.00)	0.99	
	No	03(4.55)	04(5.41)	07(5.00)	0.55	

Attitude results revealed that higher proportion of female students were willing to undergo screening for Hepatitis B/ Hepatitis C, accept Hepatitis B/ Hepatitis C infected students in the class and had no concern in shaking hand with a person infected with Hepatitis B/ Hepatitis C (p<0.05). Among other attitudes like sharing of blades/tooth brushes, vaccination of Hepatitis C patients with Hepatitis B and all health care workers receiving Hepatitis B vaccine were found to be positive in equal proportion in both the sexes (p>0.05) (Table 3).

In the practices, the authors found that 92.8% of the respondents had been protected against Hepatitis B. More females than males had screened themselves for Hepatitis B/ Hepatitis C and used gloves while examining a patient/ blood collection procedure and this difference was found to be statistically significant (p<0.05). All the students (100%) used sterilized syringe when required though a slightly lesser percentage (95%) requested for new blade/ sterilized instruments on a visit to hair salon. Further it was found that only 86.43% of the respondents reported on getting a needle stick injury. (Table 4).

Table 4: F	Practice of t	the respondents	regarding b	henatitis B	(n=140).

Question	Response	Males (n=66)	Females (n=74)	Total (n=140)	P value	
Have you got yourself vaccinated against	Yes	62(93.94)	68(91.89)	130(92.86)	0.89	
Hepatitis B	No	04(6.06)	06(8.11)	10(7.14)	0.89	
Have you ever got yourself screened for	Yes	03(4.55)	11(14.86)	14(10.00)	0.04	
Hepatitis B/ Hepatitis C	No	63(95.45)	63(85.14)	126(90.00)	0.04	
Do you always use sterilized/ disposable	Yes	66(100)	74(100)	140(100.00)		
syringe when needed	No	00(0.00)	00(0.00)	00(0.00)		
Do you always request for new blade/	Yes	63(95.45)	70(94.59)	133(95.00)	0.00	
sterilization instruments on a visit to hair salon	No	03(4.55)	04(5.41)	7(5.00)	0.99	
Do you always report on getting a needle stick	Yes	56(84.85)	65(87.84)	121(86.43)	0.60	
injury	No	10(15.15)	09(12.16)	19(13.57)	0.60	
Do you always use gloves when examining a	Yes	07(10.61)	23(31.08)	30(21.43)	0.00	
patient or blood collecting procedure	No	59(89.39)	51(68.92)	110(78.57)	0.00	

#### **DISCUSSION**

Hepatitis B and Hepatitis C are blood borne pathogens which pose a significant occupational hazard to health care workers especially in countries with high prevalence of these diseases. KAP surveys have been successfully used to design health intervention methods and public health policies.

Family history of Hepatitis B/ Hepatitis C was reported by 12.14% of the respondents which concurs with the results while similar reporting was 33.5% and 6.8% in the study conducted by author in Egypt and Ahmad A in Malaysia respectively. 11-13 95% of the respondents were aware about the availability of Hepatitis B vaccine which concurs with the results reported by Hussain FS et al. 14 Most of the respondents had adequate knowledge about the modes of transmission which was in line of agreement with the results. 12,15 In contrast to the results of current study, lower knowledge levels. 16-18 Lower proportion (45%) of the students knew that living with the Hepatitis B or Hepatitis C patient was not a risk factor which was in contrast to result reported by authors. 14 Most of the respondents knew about treatment, post exposure prophylaxis and screening of blood transfusion which was in accordance.<sup>14</sup> However in the study it was reported lower levels of knowledge among the respondents on this count. 11,12,19 Only 37.8% of the respondents replied that Hepatitis B was curable whereas 75% respondents said that disease was curable in the study conducted by authors.14 Regarding safety of Hepatitis B vaccine for all ages, 86.4% replied in affirmative while only 63% replied positive in the study.<sup>11</sup>

Among the positive attitudes reported by the respondents, 95% of them said that all health care workers should receive Hepatitis B vaccination and all Hepatitis C patients should be vaccinated against Hepatitis B. was reported that 66.3% respondents said that all HCWs be given Hepatitis B vaccination. 11 in the study it was reported an overwhelming majority (98.5%) favouring Hepatitis B

vaccination for Hepatitis C patients. <sup>14</sup> In the present study, 75% of the respondents would accept Hepatitis B/Hepatitis C infected students in the class while a lower rate of 56.5% was reported by authors in this regard. <sup>11</sup>

Only 20.7% of the respondents in the current study had no concern in shaking hands/hugging a person infected with Hepatitis B/Hepatitis C thus reflecting a negative attitude on the part of the respondents. On the other hand, 90% of the respondents weren't willing to share shaving blades/tooth brushes with others. In the present study, 68.5% of the respondents were willing to get screened for both the diseases while a higher rate was reported in the study conducted in Egypt. 12

Among the practices, 92.8% of the respondents had protected themselves against Hepatitis B. Other studies reported lower rates to the tune of 63%, 52.5%, 38.1% and a dismal 4.9% respectively regarding Hepatitis B vaccination practice. 11,13,19 Regarding screening for the disease, 10% of the respondents replied in affirmative which was in concordance.<sup>19</sup> Majority (95%) of the respondents in the present study requested for the new blade/ sterilized instruments on a visit to a hair salon while only 79.5% of the respondents elicited this practice. 12 86.43% of the respondents in the current study reported on getting a needle stick injury in contrast to 53.7%. 19 All the respondents were using sterilized disposable syringe if needed which was indeed a very healthy practice. However it was reported that 11.4% of the respondents weren't using sterilized disposable syringes. 12 Only 21.43% of the respondents in the present study were using gloves while examining a patient or during blood collection which is not a good practice and this tendency needs to be curbed.

Overall, gender was significantly associated with safer practices towards Hepatitis B and C. Females significantly had higher proportion of safer practices towards the diseases in comparison to males. It could be due to females being more responsible and cautious in their daily routines

compared to males. Theses finding are in congruence with those from Malaysia.<sup>13</sup> The small sample size and the study being conducted in a single medical school is the main limitation of the current study. Also the reported information may have some recall bias and also may not necessarily reflect the actual state of clinical decision among the participants.

#### **CONCLUSION**

The current study revealed that overall knowledge among the medical students was adequate except for a couple of parameters. Overall attitudes among the respondents were found to be reasonably good except for concern in shaking hands/hugging a Hepatitis B/C patient. Similarly, the practices of the respondents were found to be good except for not using gloves on examining a patient. Majority of the respondents (92.8%) had protective cover of Hepatitis B vaccination which is highly commendable practice. Authors recommends that besides teaching all the domains of Hepatitis at undergraduate level, internship period should be used to reinforce these things especially inculcating the safe and hygienic practices amongst the future doctors.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

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Cite this article as: Gupta RK, Singh P, Langer B, Kumari R, Akhter N, Gupta R. Perspectives of students in a medical school regarding Hepatitis B and C in North West India. Int J Basic Clin Pharmacol 2017;6:2889-93.