

Hepatitis B and C: Knowledge, attitude and Perception of medical students at Lahore Medical & Dental College, Lahore

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ABSTRACT

Background and Aims: Medical students like other health workers are being part of the health care delivery system are exposed to the same size of risk as other health care workers when they come in contact with patients and contaminated instruments. They are the first level of contact between patients and medical care. They are expected to undertake activities related to patient care with the beginning of their clinical years. They are involved in blood transfusion, injections and surgical operations in their practices. They should have awareness about the risk factors and appropriate precautionary measures to avoid these infections in handling these patients.

Study Settings: Descriptive cross sectional study.

Methods: A closed ended questionnaire consisting of questions to evaluate the knowledge regarding hepatitis B and C infection, attitude and perception of the medical students was duly filled by 280 students including First, Second, third and Fourth year. The data were entered and analyzed using Statistical Package for Social Sciences (SPSS) software version 20.

Results: Total 280 medical students were interviewed. Among them 25.7% (60) were from first year, 21.4 % (60) from second year, 24.3% (68) from third year and 28.6% (80) were fourth year medical students. The age ranged from 18-25 years with 41.4% (116) of male students and 58.6% (164) were females. About 80-90% (224-250) showed a good knowledge about transmission and prevention of these infections. 63.6% (178) believe that hepatitis B and C can be transmitted as nosocomial infections and 72.5% (203) know that these infections are widely transmitted like HIV/AIDS. 85% (238) were of the opinion that they are at greater risk of having them due to their profession. Among 270 students, 200 (71.4%) were fully vaccinated against hepatitis B and 32 (11.9%) were partially vaccinated. 48 (17.1%) were the students who were not vaccinated at all.

Conclusion: Level of knowledge was associated with academic grade of the students. Overall knowledge was found to be high but vaccination status was low for this particular group.

Keywords: Attitude, medical student, Hepatitis B, Hepatitis C, attitude, Knowledge, perception.

INTRODUCTION

Hepatitis is an inflammation of the liver, most commonly caused by a viral infection. There are five main hepatitis viruses, referred to as types A, B, C, D and E. In particular, types B and C lead to chronic disease in hundreds of millions of people and, together, are the most common cause of liver cirrhosis and cancer. According to World Health Organization (WHO), there are 350 million people with chronic HBV infection and 170 million people with chronic HCV infection worldwide^{1,2}. Annual toll of death from Hepatitis B is estimated 563,000 deaths and hepatitis C is 366,000 deaths³. As Pakistan has large population (165 million) and intermediate to high rates of infection^{1,2}. It is considered among the worst afflicted nation.

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Hepatitis HBV and HCV is contagious and easy to be transmitted from one infected individual to another by unsafe use of therapeutic injections, blood transfusion, shaving from barbers, tattooing⁴, mother to child, unprotected sexual intercourse, sharing of eating utensils and beauty salon equipment⁵. Prevalence of infection, modes of transmission and human behavior conspire to geographically different epidemiologic patterns of HB infection⁶. In Pakistan the prevalence for Hepatitis C is 4.9% and for Hepatitis B it is 2.5%⁷.

The practice of modern medicine have contributed a lot in the increase of the case and spreading of blood born diseases like Human immune deficiency virus and HBV and HCV due to lapse in the sterilization technique of instruments and improper hospital waste management as 10 to 20% health care waste is regarded hazardous⁸.

Medical students like other health workers are being part of the health care delivery system are exposed to the same size of risk as other health care workers when they come in contact with patients and

contaminated instruments. They are the first level of contact between patients and medical care. They are expected to undertake activities related to patient care with the beginning of their clinical years. They are involved in blood transfusion, injections and surgical operations in their practices. They should have awareness about the risk factors and appropriate precautionary measures to avoid these infections in handling these patients. The risk of occurrence of accidental hepatitis B has been found to be higher (10.87%) than in voluntary blood donors (6%) and in the general population (5%)⁹. Medical and nursing students are more vulnerable to HB as they are in direct contact with the patients for medical care and surgical instrumentation etc¹⁰. So, knowledge regarding the Hepatitis B and safety precautions are essential to minimize the health care settings of acquired infections among health personnel.

Patients with hepatitis C may sometimes experience discrimination and stigmatization in the work place, by family members and by members of their communities. In addition, they may face discrimination from health-care professionals^{11,12}. These discriminatory practices may be a result of lack of knowledge, which may lead to negative attitudes toward these kinds of diseases, which could interfere with their willingness to treat these patients because of a fear of contracting the infection.

As this is entry level of medical students clinically, therefore, the objectives of the present study were to assess knowledge, attitude regarding hepatitis B and C. Other objective was to correlate the awareness regarding hepatitis B and C infection to the clinical attitudes and behavior regarding this disease in order to estimate how attitude and behavior can be influenced by education and awareness.

MATERIALS AND METHODS

This cross-sectional study was conducted in Lahore Medical and Dental college, an oldest private medical institution in the country. All the Medical students who were in First, second, third and fourth year of MBBS included in this study. The students who were in final year, those who have mental illness, seriously ill and blind were excluded from the study. Sampling technique used was random convenient. Knowledge and practice of students towards transmission and prevention of Hepatitis B virus (HBV) were considered as dependent variables and the independent variables were age, year of study.

Data collection process: A self-administered structured questionnaire was used to collect information about the socio-demographic

characteristics of respondents, knowledge towards transmission and prevention method of hepatitis B virus and practice towards prevention HBV. Training was given for data collectors and the overall data collection activities were supervised by principal investigator. The participants were anonymously responded to the items on the questionnaire.

Data analysis: Data was checked for completeness and consistency. Coded data was entered and cleaned using Epi Data software and analyzed using SPSS version 20. A p-value of 0.05 or less was used as cut off level for statistical significance.

Ethical consideration: The research protocol was approved by the medical and Health Sciences College Research Ethics review Committee. Then informed consent was obtained from each study participants. Moreover confidentiality assured for all the information provided and personal identifiers were not included on questionnaire.

RESULTS

A total of 300 medical students took part in study who were studying in first, second, third and fourth year of MBBS in Lahore Medical and Dental college. Among them 41.4% were males and 58.6% were females. Fourth year students made majority with 28.6% along with first year (25.7%) third year (24.3%) and second year students (21.4%). The age group of the students was 17-25. Majority of the students were in age group of 18-21 (170) with (110) of them in age group 22-25. (Table 1)

Table 1: Sociodemographic characteristics of the students (n=280)

Variable	Frequency(%)
Age group in years	
18-21	170(60.7%)
22-25	110(39.3%)
Gender	
Male	116(41.4%)
Female	164(58.6%)
Year in medical college	
First	72 (25.7%)
Second	60 (21.4%)
Third	68 (24.3%)
Fourth	80 (28.6%)

Study revealed that most of the students (94.3%) know about hepatitis B and C. Regarding the routes of transmission of Hepatitis majority of them i.e., 80.7% identified blood and blood products and almost same number of participants voted for needles and sharps (80%) along with 53.6% mentioned sexual intercourse as correct routes of transmission. Some number of students identified incorrectly avoid food not well cooked (28.2) and

through contaminated water. (42.1%) as ways of preventing spread of these infections.

Table 2: Distribution of the students by knowledge of hepatitis B and C infection (n=280)

Variable	Frequency(%)
Ever heard of hepatitis B and C Infection	
Yes	264 (94.3%)
No	16(5.7%)
*Routes of transmission of hepatitis B and C	
Blood and blood products	226(80.7%)
Needles and sharps	224(80%)
Sexual intercourse	150(53.6%)
Faeco-oral	77(27.5%)
Contaminated water	12(43.2%)
Hepatitis B and C can be transmitted as a nosocomial infection	
Yes	178(63.6%)
No	102(36.50%)
Hepatitis B and C is also widely transmitted like HIV/AIDS	
Yes	203(72.5%)
No	77(27.5%)
Health workers are at risk of Hepatitis B and C Infection by virtue of their work	
Yes	238(85%)
No	42(15%)
*Ways of preventing Hepatitis B and C infection	
Vaccination	250(89.3%)
Proper disposal of sharps, needles and blood	231(82.5%)
Avoid needle/sharps injury	185(66.1%)
Avoid casual sex or/and multiple sexual partners	147(52.5%)
Avoid drinking contaminated water	118(42.1%)
Avoid food not well cooked	79(28.2%)

A lot of students (63.6%) believe that Hepatitis B and C can not be transmitted as a nosocomial infection with (36.5%) of them who believe otherwise .Majority of the students (72.5%) mentioned that both infections are widely transmitted like HIV/AIDS .Most of the students (85.0%) believe that they can acquire these infections due to their contact with patents with some of them who wrongly felt that they are safe(15.0%). A majority (89.3%) of the respondents correctly identified vaccination as a way of preventing hepatitis B infection while some number (82.5%)mentioned proper disposal of sharps, needle and blood products. Another(66.1%) believe that by avoiding needle/sharps injury and casual sex(52.5%) they can prevent transmission of these infections .Incorrectly identified ways of preventing transmission of these infections are avoid drinking contaminated water by (42.1%) and avoid food not well cooked(28.2%).(Table 2)

Of those that were aware of hepatitis B infection, 66.4% mentioned wearing of gloves and 83.6%

adequate disposal of sharps as ways of protecting themselves against contacting Hepatitis B and C. Incorrectly identified ways of protecting against contacting Hepatitis B and C infections by the respondents included avoidance of diagnosed patients (27.5%) and use of multivitamin/blood tonic drugs (10.7%) and the use of antibiotics immediately following contact with an infected person (18.6%) as way of protecting themselves from contacting Hepatitis B (Table 3).

As shown in table 3, most of the students (82.9%) have actually ever received hepatitis B vaccine. Among them, 71.4% completed the vaccination doses. Within those who have never received any dose of vaccine, 77% gave no specific reason for that with 20.8% who believe that they can not be infected or they are too careful to have these infections.41.1 gave carelessness as a reason and 35.4% mentioned they are too busy to get vaccination. Among those participants who have been partially vaccinated 43.7% received one dose and 37.5% received 2 doses.

Table 3: Attitude and Behavior of students towards Hepatitis B vaccination

Variable	Frequency
*Measures taken to protect against hepatitis infection	
Wearing of gloves	186(66.4%)
Adequate disposal of sharps	234(83.6%)
Avoid patients diagnosed with hepatitis B	77(27.5%)
Multivitamin/Blood Tonic	30(10.7%)
Use antibiotics after contact	52(18.6%)
Ever received hepatitis B Vaccine	
Yes	232(82.9%)
No	48(17.1%)
Reason for not being Vaccinated	
No reason	37(77%)
Can't be infected with hepatitis B	6(12.5%)
I am very careful	10(20.8%)
No time/too busy	17(35.4%)
Carelessness	20(41.6%)
Total	48
Number of doses of vaccine received	
1	14(43.7%)
2	12(37.5%)
3	6(18.7%)
Total	32
Completed vaccination schedule	
Yes	200(71.4%)
No	32(11.9%)
Total	232

It is noteworthy that more female students (83.5%) and students of first (84.7%) and second year (88.3%) completed the vaccination schedule than the third (79.4%) and fourth year(80%) students.

Table 4: Association between sex, year in medical college and completion of vaccination schedule.

Variables	Completed vaccination	
	Yes	No
Gender		
Male	95(81.9%)	21(18.1%)
Female	137(83.5%)	27(16.4%)
Year in medical college		
First	61(84.7%)	11(15.3%)
Second	53(88.3%)	7(11.7%)
Third	54(88.3%)	14(20.5%)
Fourth	64(80%)	16(20%)

P=0.00

DISCUSSION

Viral hepatitis B and C are considered one of serious health problems in the developing countries since it causes chronic liver cirrhosis and hepatocellular carcinoma¹³. Scientific knowledge about HBV transmission is essential for medical students. They can take proper protection during their clinical posting as HBV is 50 times easier to transmit than HIV¹⁴. The knowledge about transmission of Hepatitis B and C through blood and blood products (80.7%) sexual route (53.6%) by used needles and syringes (80.0%) was found to be high. But through Fecal oral route (27.5%) and contaminated water (43.2%) was low among medical students. These results are in line with the findings from studies reported from B. J. Medical College, Ahmadabad, and Gujarat, India; where majority of the medical students had correct knowledge on mode of transmission¹⁵. In a report by Razi et al. in Pakistan, the survey showed fair level of knowledge among university students regarding hepatitis B and C, but gaps in knowledge were identified which need to be strengthened in students especially in non-biological sciences group¹¹.

In the present study, 82.9% of the students received vaccination against hepatitis B and among which 71.4% of the students were fully vaccinated against Hepatitis B. This was almost equal to the vaccination status of 87.8% study done at Muhammad Medical College Mirpurkhas¹⁶, 29.3% reported among medical students of B.J. Medical College (15), 35% reported in civil hospital of 60 laboratory technicians¹⁷, 88.1% in study done at two national/regional congresses and two university hospitals in Iran^{6,18}, 63% reported from India among medical students and 42% reported among medical students of Lahore¹⁹.

There was no reason (77%) given for not getting vaccinated in the present study with carelessness (41.6%) being on second slot. (20.8%) consider themselves safe and another (35.4%) gave busy schedule as their cause of being not vaccinated. The

finding is consistent with a study result from medical college of Mirpurkhas, Pakistan (16). These are serious issues and baseless reasons and need to be improved by education.

Our data indicates that there is a positive correlation between medical students' knowledge toward Hepatitis B and C and their attitude toward the diseases in a way that higher knowledge is associated with better attitude. This result is consistent with the results of some similar surveys (20, 21) but against the data from Mortel's survey in which there was no significant relationship between health care workers' knowledge and attitude toward Hepatitis C¹⁶.

The findings are in line with the results presented by the study in India²² and Pakistan²³. However the data of the present study has some weaknesses and is limited by cross-sectional study design and the small sample size Apart from these limitations, this investigation has some strength because it refers to a common health problem and targets a high risk group which can have a significant influence on a serious health concern. Improving knowledge of blood-borne pathogens, including hepatitis B and hepatitis C, is important for students in the medical sciences. Health care professionals play an important role as patient educators and it is essential that they are knowledgeable about these diseases.

CONCLUSION AND RECOMMENDATION

The present study concludes that there is poor knowledge among the medical students about its mode of transmission and prevention. Moreover, all of the students were not fully vaccinated against Hepatitis B and majority of the students were not aware about the availability of post exposure prophylaxis for HB, which made them more vulnerable to the disease in their professional life.

Since medical are at increased risk of acquiring needle stick injury, and exposed to blood and blood products in their clinical practice, they should be vaccinated upon entry into the medical college. Medical Colleges should have Student Health Departments that must take responsibility for HBV testing, vaccination, monitoring vaccine response and providing post-exposure prophylaxis.

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