An Institutional Review of Knowledge, Attitudes and Practices of Medical Students Regarding Hepatitis B and C: A Cross-sectional Study

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Significance:

Viral hepatitis is among one of the major health issues of globe. Medical students are high-risk group due to lack of screening and post vaccination screening programs. Several studies have been conducted to assess knowledge, attitude, and practices of healthcare workers regarding hepatitis. There is a need to adapt the knowledge and develop and implement attitude of students towards positive practices. Students and health-care professionals should be screened regularly for hepatitis B and C.

ABSTRACT

Background: Hepatitis is a major health issue. The aim of this study was to assess the knowledge, attitude and practices (KAP) of medical students regarding hepatitis B and C.

Methods: A descriptive cross-sectional study conducted from March, 2018 to May, 2018. 310 medical students from Allama Iqbal Medical College participated. KAP towards Hepatitis B and C was assessed by using a pre-validated questionnaire. Association of gender and year of study was established with KAP of respondents. Also, associations of knowledge with attitude and practices were also established using Chi-square test taking ≤0.05 as standard p-value. SPSS version 21.0 was used.

Results: 269 (86.77%) out of 310 distributed questionnaires were received. 116 (43.1%) respondents fell in age group 16-20, 150 (55.8%) in 21-25 years while 3 respondents (1.1%) were 25 year and above. 146 (54.3%) respondents were females and 123 (45.7) respondents were male. There were 54 (20.1%) respondents from first year, 59 (21.9%) respondents from second year, 53 (19.7%) respondents from third year, 55 (20.4%) respondents from fourth year and 48 (17.8%) respondents from final year. 132 (90.4%) female respondents and 98 (79.7%) male respondents had good knowledge regarding hepatitis B and C. No significant relationship was established between gender of respondents with their attitude and practices. As for relationship of knowledge of respondents with their attitude and practices, no significant association could be established.

Conclusion: Overall, the medical students have adequate knowledge, sensible attitude but unsatisfactory practices in regards to Hepatitis B and C.

Introduction

Viral hepatitis is among one of the major health issues of globe. It is an infectious disease caused by hepatitis virus that effects the liver (1). The Global Hepatitis Report 2017 showed hepatitis as the major public health disorder that caused 1.34 million deaths in 2015, a figure analogous to the yearly deaths caused by Tuberculosis (TB) and Human Immunodeficiency Virus (HIV). 257 million people worldwide harbor Hepatitis B virus (HBV) and 71 million are affected Hepatitis C virus (HCV) (2). With 6% to 6.8% population infected with HCV, Pakistan bears world's highest burden of hepatitis C (3, 4). Hepatitis B exists simultaneously along with hepatitis D in one-third of HBV-infected population of Pakistan (5). 1 in every 40 people die worldwide due to end-stage liver disease. Chronic infections with HBV and HCV are notorious for cirrhosis and liver cancer. Globally 57% cirrhosis and 78% hepatocellular carcinoma (HCC) is attributable to HBV and HCV. Pakistan lies in an area of intermediate endemicity for HCC (6, 7). Modes of transmission in health-care settings worldwide and in Pakistan include low risk perception by hospital workers (8), contaminated needle use, lacking sterilization of medical equipment, drug abuse and unsafe/unscreened blood and blood product transfusion (9,10). Prevention is the key to tackle hepatitis B and C which includes standard Universal precautions (11), prophylactic vaccination and standard treatment (12-14). Medical students are high-risk group (15) due to lack of screening and post vaccination screening programs (16). A number of studies have been conducted to assess knowledge, attitude and practices of healthcare workers regarding hepatitis. Results of a KAP study revealed that only 5 (2 %) students out of a total of 246 had completed the three doses schedule of HBV vaccination, whereas a significant number of students, 66 (26.8 %), had been exposed to blood/body fluid via needle stick injury at least once since they started their training in the health facility (17).

This study aims to determine knowledge, attitude and practices (KAP) of medical students being a high-risk group of Hepatitis B and C, compare KAP differences

regarding Hepatitis B & C among medical students of different years, and to evaluate the vaccination status of medical students.

Materials and Methods

Study Design & Settings: A descriptive cross-sectional study was conducted amongst the medical students of Allama Iqbal Medical College. The institute is a public school of medicine, nursing and allied health sciences located in Lahore, Punjab, Pakistan. Jinnah hospital is attached to the college as a teaching hospital. Verbal consent was taken from all participants.

The study was conducted for period of two months from March, 2018 to May, 2018.

Study Sample: A non-probability convenient sample was drawn from the medical students of Allama Iqbal Medical College, Lahore, Pakistan. 310 questionnaires were distributed among the medical students of all five years from which 269 questionnaires were returned as correctly filled making the sample size (N) as 269. Other questionnaires were discarded on the basis of being incomplete and incorrectly filled.

Inclusion criteria: 1) Students of all five years from MBBS degree program. 2) Vaccinated as well as non-vaccinated students.

Exclusion criteria: 1) Students of allied health sciences. 2) Students of nursing institute. 3) Student who did not give verbal consent. 4) Incomplete/incorrectly filled questionnaires.

Data Collection: A self-administered questionnaire comprising of 20 close-ended type questions was designed. The questions were kept simple and easy to understand. The questionnaire was validated by the facilitators at the Community medicine department of the college. A pilot study to pre-test the questionnaire was conducted and later on some modifications were made in the questionnaire. Data from pilot study was not included in final analysis. 10 to 15 minutes were given to the respondents to fill all the fields of questionnaire. The questionnaire included: demographic data of the respondents such as name (optional), age, year of study, marital status and screening status of hepatitis B and C; 10 questions about the knowledge regarding hepatitis B and C which included basic facts, modes of transmission, complications, treatment and vaccination information; 4 questions about the attitude towards hepatitis B and C; 5 questions about the practices of the medical students regarding hepatitis B and C; 1 question about the vaccination status and the possible reasons for not being vaccinated.

Scoring of Knowledge, Attitudes & Practices: A score of 2 was given to questions answered correctly, 1 for incorrect answers and 0 for questions answered as "don't know". The total score of knowledge ranged from 0 to 20. The total score of attitudes ranged from 0 to 8. The total score of practice ranged from 0 to 10. Respondents having score of ≥75% (≥15) were considered to have good knowledge and <75 % (<15) were considered to have poor knowledge. As for attitude, a score of ≥75% (≥6) was considered as a good attitude score and <75% (<6) was considered as a poor attitude score. Regarding practice, respondents who scored ≥75% (≥8) were said to have good practices and those who achieved <75% (<8) were said to have poor practices towards hepatitis B and C control and prevention.

Ethical Considerations: Institutional ethical approval was obtained from Institutional Research Ethics committee of Allama Iqbal Medical College prior to the conduct of this study. All subjects were informed regarding the purpose of the study. The confidentiality was assured to all the respondents and verbal consent was taken. Furthermore, a sentence regarding the purpose of the study and consent of the respondent was also mentioned and highlighted on the questionnaire.

Statistical Analysis: SPSS version 21.0 was used to analyze the data. The data was tabulated into frequency tables. Clustered bar graphs and pie charts were used to present important variables. Some crosstabulations were done and Chi-square test was applied. A p value of ≤ 0.05 was set as standard for significance

Results

A total of 310 questionnaires were distributed out of which 269 were received with a response rate of 86.77%. Table 1 shows the demographic data of the respondents. None of the subjects reported with positive Hepatitis B Surface Antigen (HbsAg). 1 (0.4%) respondent had positive hepatitis C screening test result.

Table 1 Demographic Data of Participants (N=269)

VARIABLES	FREQUENCY (N)	PERCENTAGE (%)
AGE GROUP (YEARS)		
16-20	116	43.1
21-25	150	55.8
25 AND ABOVE	3	1.1
GENDER		
FEMALE	146	54.3
MALE	123	45.7
MARITAL STATUS		
UNMARRIED	257	95.5
MARRIED	12	4.5
YEAR OF STUDY		
FIRST YEAR	54	20.1
SECOND YEAR	59	21.9
THIRD YEAR	53	19.7
FOURTH YEAR	55	20.4
FINAL YEAR	48	17.8
HEPATITIS B SCREENING TEST RESULT		
NOT DONE	147	54.6
NEGATIVE	122	45.4
POSITIVE	0	0.0
HEPATITIS C SCREENING TEST RESULT		
NOT DONE	152	56.5
NEGATIVE	116	43.1
POSITIVE	1	0.4

Table 2 shows knowledge of the respondents regarding hepatitis B and C. The study revealed that majority of the respondents 258 out of the total of 269 (95.9%) had heard of hepatitis and 254 (94.4%) were aware of the disease. 254 (94.4%) respondents knew that hepatitis is a viral disease. 250 (92.9%) respondents had knowledge of the cirrhosis and hepatocellular carcinoma caused by hepatitis B and C viruses. Regarding the routes of transmission 261 (97.0%) respondents said that hepatitis

Table 2 Knowledge regarding Hepatitis B and C

Questions	Yes		No		Don't Know	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Have you ever heard of hepatitis B and C	258	95.9%	11	4.1%	0	0.0%
Are you aware of hepatitis B and C	254	94.4%	15	5.6%	0	0.0%
Do you think of hepatitis B and C as viral diseases	254	94.4%	11	4.1%	4	1.5%
Do you think hepatitis B and C viruses cause liver cancer and cirrhosis (Liver scarring)?	250	92.9%	4	1.5%	15	5.6%
Can hepatitis B and C be transmitted by un-sterilized syringes, needles, surgical instruments, contaminated blood and blood-products?	261	97%	7	2.6%	1	0.4%
Hepatitis B and C cannot be transmitted by contaminated water or food. Do you agree?	138	51.3%	106	39.4%	25	9.3%
Do you think there is any vaccination available for hepatitis B?	216	80.3%	32	11.9%	21	7.8%
Do you think there is any treatment available for hepatitis B?	211	78.4%	35	13%	23	8.6%
There is no vaccination available for hepatitis C. Do you agree?	150	55.8%	74	27.5%	45	16.7%
Do you think is there any treatment available for hepatitis C?	169	62.8%	57	21.2%	43	16%

B and C can be transmitted by un-sterilized syringes, needles, surgical instruments, contaminated blood and blood-products. 106 out of 269 respondents (39.4%) considered contaminated food and water as source of hepatitis infection. 216 (80.3%) respondents knew about the vaccination and 211 (78.4%) respondents knew about the vaccination of hepatitis B. 74 out of 269 respondents (27.5%) said there is vaccination for hepatitis C while 45 (16.7%) respondents said that they had no idea about the vaccination. 150 out of 269 (55.8%) respondents agreed that there is no vaccination for hepatitis C. 169 (62.8%) knew about the treatment of hepatitis C.

Table 3 displays the attitude of the respondents towards hepatitis B and C. 242 (90.0%) respondents had the opinion that they are risk of getting hepatitis B or C as medical students. 128 (47.6%) participants were exposed to hepatitis B or C positive patients. Adopting personal protective measures were considered necessary while dealing with hepatitis B or C positive patients by 227 (84.4%) respondents. 34 out 269 (12.6%) respondents have had needle pricks in last one year during their medical wards and patient interaction.

Table 3 Attitude towards Hepatitis B and C

Attitude towards Hepatitis B and C	Yes		No		Don't Know	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
As medical student, do you think you can get hepatitis B or C?	242	90%	11	4.1%	16	5.9 %
Have you ever been exposed to a patient who is hepatitis B or C positive?	128	47.6 %	120	44.6 %	21	7.8 %
Do you think whether adopting personal protective measures (like wearing gloves) necessary while dealing with patients suffering from hepatitis B and/or C?	227	84.4 %	33	12.3 %	9	3.3 %
Have you had any needle pricks in last one year during your wards or in any interactions with patients?	34	12.6 %	231	85.9 %	4	1.5 %

Table 4 presents the practices of participants regarding hepatitis B and C. 145 out of 269 respondents (53.9%) have been screened for hepatitis B and C and knew about their present statuses. Out of those who received their vaccinations, 83 (30.9 %) were completely vaccinated and 11 (4.1%) respondents did not receive all the 3 doses of vaccine. Screening before vaccination was done by 34 (12.6%) respondents. 175 (65.1%) respondents did not receive hepatitis B vaccination.

Table 4 Practices related to Hepatitis B and C

Hepatitis B and C Practice items	Frequency (N)	Percentage (%)
Have you ever been screened for hepatitis B and/or C?		
Yes	145	53.9
No	124	46.1
Do you know your present status (Whether you are positive or negative for HBV or HCV)?		
Yes	145	53.9
No	124	46.1
If positive, did you take any action on positive HBV or HCV tests?		
Yes	1	0.4
No	0	0.0
Not positive	268	99.6
If vaccinated did you receive all 3 doses of hepatitis B vaccine?		
Yes	83	30.9
No	11	4.1
Never vaccinated	175	65.1
Before getting hepatitis B vaccination, did you do screening for Hepatitis B?		
Yes	34	12.6
No	60	22.3
Never vaccinated	175	65.1

Figure 1 shows the screening statuses of the respondents from first year to final year. Regarding the vaccination status of the respondents, a total of 83 (30.9%) respondents were completely vaccinated and 11(4.1%) did not receive all the three doses. 105 (39.0%) respondents said that they were unaware of the vaccination. 15 (5.6%) respondents believed that vaccination comes with dangerous side-effects. 42 (15.6%) respondents did not get vaccinated because they

had fear of needles. 13 (4.8%) respondents did not receive vaccination because of its cost. Figure 2 shows the reasons given by the respondents for not been vaccinated.

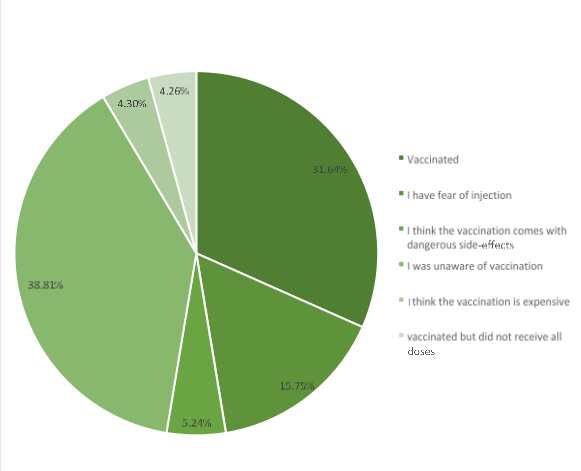

Figure 1 Screening Status of Participants

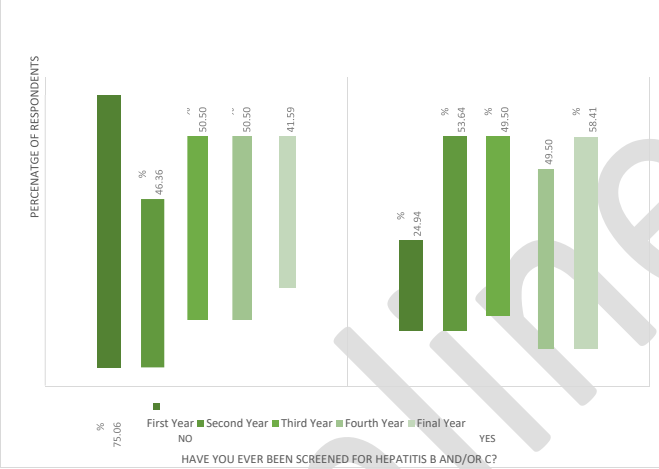

Figure 2 Reasons given by the respondents for not being vaccinated

Table 5 Results of Chi-Square Test

	Gender Based Comparison	Comparison in terms of Year of study
Knowledge	p = 0.013	p = 0.00
Attitude	p = 0.3	p = 0.016
Practices	p = 0.5	p = 0.00

*p value of ≤ 0.05 was set as standard for significance

Among the 132 (90.4%) female and 98(79.7%) male respondents, male subjects had good knowledge regarding hepatitis B and C, no significant relationship was established between gender of respondents with their attitude and practices. Significant differences were found in knowledge, attitude, and practices regarding hepatitis B and C in terms of years of study (Table 5). As for relationship of knowledge of respondents with their attitude and practices, no significant association was established (p=0.8).

Discussion

Viral hepatitis is an issue of public importance because of global increase in mortality rates due to this. In 2015 1.34 million deaths people died due to hepatitis (2). Pakistan bears high burden of hepatitis B and C and lies in an area of intermediate endemicity for HCC (7). In this study, medical students being a high-risk group were targeted for KAP survey. KAP surveys include assessment of knowledge of respondents, in this case, of medical students regarding their knowledge of the disease, their attitude and way of seeing the disease and their practices of prevention and protection against the disease. As of vaccination, questions were asked to know the status of medical students with regards to pre-vaccination screening and whether vaccination was completed. Medical students were also inquired about their reasons for not being vaccinated. A number of KAP surveys regarding hepatitis B and C have been carried out on medical students in the past (14-24).

In this study, when asked about previous screening 54.6% were never screened for hepatitis B and 56.5% were never screened for hepatitis C. These percentages are higher as compared to results of Olusegun Adekanle et al in 2014 which showed lack of screening awareness among medical students (8). All the respondents demonstrated adequate knowledge regarding hepatitis B and C same as in other researches (18-25). Regarding contaminated food and water as the source of transmission only 51.3% had correct knowledge. As of treatment and vaccination of hepatitis C, respondents had inadequate knowledge. These results were consistent with those of Salwa A. Atlam et al in 2016 and Tazeem Shahbaz et al in 2014 whose studies also show inadequate knowledge of respondents in these fields (18, 22).

More respondents considered that they are at high risk of getting hepatitis by virtue of their work set-up as compared to the study of Tazeem Shahbaz et al in 2014 (18). 33% respondents said adopting personal protective measures while interacting with a hepatitis B or C patient is not necessary. The percentage was almost consistent with study of Benzy Paul et al in 2014 (11). Less number of respondents were exposed to needle pricks as compared to Fazal Rehman Babar's study conducted in medical students of KCD (Khyber College of Dentistry) and BMC (Bolan Medical College) which showed higher number of needle pricks (20).

Only 30.9% of respondents said they were completely vaccinated. This percentage is much less as compared to studies of Muhammad Asif et al in medical college of Mirpurkhas and Tazeem Shahbaz et al in Lahore Medical

and Dental College (18, 24). Out of the 94 respondents who were vaccinated only 34 did screening before vaccination. The pre-vaccination screening is done so that only those who will benefit, get vaccinated and to avoid false vaccine protection in infected people (8). Despite adequate knowledge, most respondents reasoned I was unaware of vaccination when asked about the cause of not been vaccinated whereas Muhammad Asif et al demonstrated lack of motivation as the reason behind no vaccination at Mirpurkhas medical college (24).

Despite more knowledge regarding hepatitis in females, their attitude and practices did not show any significant association which was consistent with study of Nazeer Khan et al (14). Year of study and its association with knowledge, attitude and practices was found significant but no association could be established between knowledge of hepatitis B and C and attitude and practices of medical students which is contrary to study Salwa A. Atlam et al (22). Despite good knowledge, the poor attitude and practices of students were surprising.

According to the findings of this study, only good knowledge is not adequate for overcoming high prevalence of hepatitis B and C. Appropriate steps and policies should be made for screening and vaccination especially in medical colleges, because medical students and health-care practitioners are a at risk of contracting this infection. Introduction of hepatitis B vaccination in infancy, resulted in reduction in global HBV prevalence in 2015 (2). Hepatitis B vaccination of those individuals who did not receive it at birth through EPI in Pakistan and preventive measures for hepatitis B and C remain the only ways of overcoming hepatitis and controlling further cases of hepatitis.

Conclusion

Medical Students of Allama Iqbal Medical College had good knowledge and attitude regarding hepatitis B and C but their practices were not satisfactory. Modes of transmission and hepatitis C treatment and vaccination were the areas where students presented insufficient knowledge. There was significant association between gender of respondents and their knowledge. Also, year of study showed significant association with knowledge, attitude and practices of students. However, no significant association could be established between knowledge and attitude and knowledge and practices of medical students. There is a need to adapt the knowledge and develop and implement attitude of students towards positive practices. Students and health-care professionals should be screened regularly for hepatitis B and C.

Conflict of interest: Authors declare no conflict of interest.
Disclosure: None

Human/Animal Rights: No human or animal rights were violated during this study.

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