

STATUS OF HEPATITIS B VACCINATION AMONG MEDICAL STUDENTS UNDERGOING CLINICAL ROUNDS IN PESHAWAR, KHYBER PAKHTUNKHWA

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ABSTRACT

Introduction: Two billion people worldwide are infected with hepatitis B virus (HBV) and 360 million with chronic hepatitis, out of which 600 thousand die every year. Since medical students are at increased risk of contracting the disease due to their greater exposure to the disease high degree of risk of developing the diseases due to exposure to it during clinical rounds.

Materials & Methods: This was a cross-sectional study conducted on medical students undergoing clinical rotations in the hospital. The medical students attending the hospital postings, mainly 4th and 5th year, were invited to complete a 17-item questionnaire.

Results: A total number of 500 medical students were approached for the study but only 459 of them responded, of which 44.7% were males and 55.3% were females. The maximum age was 25 years and minimum age 20 years, with a mean age of 22.5 ± 1.08 years. Regarding awareness of HBV vaccination, 46.7% students were well aware, 40.6% were moderately aware while 12.7% were less aware. For vaccination status, 67.5% of the students were vaccinated against hepatitis B while 24.4% were not vaccinated, whereas 8.1% did not know whether they were vaccinated or not. Of the 67.5% vaccinated, 59.35% had completed all three doses while 36.7% were partially vaccinated with two or less than two doses while 3.87% did not know if they were partially vaccinated or fully vaccinated. Of the students vaccinated, 18.4% were vaccinated in the past 1 year, 23.7% were vaccinated between 1-5 years ago, and 11.6% were vaccinated between 6-10 years ago while 26.5% were vaccinated more than 10 years ago.

Conclusion: A large number of students were not vaccinated despite the high awareness levels of the students and the availability of a cheap and easily accessible hepatitis B vaccine.

Keywords: Hepatitis B Virus; Hepatitis B vaccination; Medical Students; Immunization.

INTRODUCTION

Hepatitis B virus (HBV) infection, a global pandemic, has over 350 million carriers; healthcare workers are at great risk of acquiring the disease through contact with infected blood, even while using gloves and mask. The risk is further compounded by non-professional attitudes, practices and policies.¹

According to a report published, two billion people worldwide are infected with hepatitis B virus (HBV) and 360 million with chronic hepatitis, out of which 600 thousand die every year.²

Immunization with hepatitis B vaccine is the most effective means of preventing hepatitis B infection and the consequences it leads to. The recommended strategy for prevention of this infection is selective vaccination of persons with identifiable risk factors. The Advisory Committee on Immunization Practices (ACIP) recommends hepatitis B vaccine for every one 18 years of age and younger as well as for adults over 18 years of age who are at risk of developing hepatitis B infection. Adults having an increased risk of hepatitis B infection and who should receive

vaccination include: sexually active heterosexual adults with more than one sex partner in the prior 6 months or a history of sexually transmitted disease; men who had sex with men; illicit injection drug users, patients undergoing hemodialysis and people at risk of occupational infections. The health care workers (HCWs) fall in the last category of high-risk group.³

The prevalence of HBV carriers varies from lowest in Japan (less than 0.00005%), to highest (10 to 20 %) in areas like southeast Asia, China and sub-Saharan Africa.⁴ Pakistan lies in the intermediate to high prevalence area. The prevalence of hepatitis B in Pakistan is reported in between 3-5% and about 6% (ten million people) are currently suffering from hepatitis C.⁵ Medical students are at high risks as they are in direct contact with patients that may have the infection, needle sticks and other surgical instruments which may be contaminated with fluids from infected patients. A study showed that 45-65% of the medical students are at least once exposed to body fluids during their medical training.⁶ Most of the studies revealed that people working in medical and health related organizations are at high risk of hepatitis B.⁷ A study conducted in Nepal in 2012 on hepatitis B vaccination among medical students showed that out of 210 respondents, 86.5% of students were vaccinated against Hepatitis B of which 83.7% had completed full doses and 90 students (42.8%) reported at least one injury needle-prick injury, four of which were exposed to Hepatitis B virus (HBV) positive cases.⁸

This study was conducted to determine the awareness and vaccination status for HBV of medical students undergoing clinical rotations at different hospitals of Peshawar, Khyber Pakhtunkhwa and to identify students at risk of developing hepatitis B.

MATERIALS & METHODS

A cross-sectional study was conducted on medical students of Peshawar undergoing clinical rotations

in hospitals. The medical students attending their hospital postings from various medical colleges of Peshawar (mainly MBBS years 4 and 5 students) were invited to complete a self-administered 17-item questionnaire. A scale was made for different awareness levels of the student. A score of zero to 2 was poorly aware, 3-4 was moderately aware and 5-6 was well aware. Data was collected from 5th January to 25th January 2015. A verbal consent was taken from the students and they were informed of the professional secrecy maintained in this voluntary study.

Data collection: The questionnaire developed was pretested in a pilot sample of 20 students after which no major changes were made to the 17-item questionnaire. Questions were asked to determine the knowledge of the students regarding hepatitis B, their vaccination status whether they were vaccinated or not, their attitude towards the vaccination against hepatitis B and their practice in clinical rotations to avoid developing the disease.

Statistical Analysis: Statistical analysis was performed using the Statistical Package for Social Science (SPSS) version 20. Continuous data were displayed as mean and standard deviation (SD), while the categorical and nominal data were presented as frequencies and percentages.

The Ethical Review Board of Rehman Medical College, Peshawar, Pakistan approved the study on 1st January 2015. The guidelines of the Strengthening of the Reporting of Observational Studies in Epidemiology (STROBE) statement checklist was followed in writing the present article.¹⁰

RESULTS

A total number of 500 medical students were approached for the study; out of which 459 (91.8%) responded; 205 (44.7%) were males and 254 (55.3%) were females (Table 1). Age group ranged from 20-25 years with a mean age of 22.5 ± 1.08 years.

Table 1. Descriptive characteristic of subjects (n=459)

Characteristics		Frequency (%)
MBBS year	Fourth year	268(58.4)
	Final year	191(41.6)
Gender	Male	205(44.7)
	Female	254(55.3)
Age (yrs) (Mean \pm SD)	22.5 \pm 1.08	

A scale was made for different awareness levels of the student. A score of zero to 2 was poorly aware, 3-4 was moderately aware and 5-6 was well aware. The results showed that 58 (12.7%) students were poorly aware of hepatitis B, 186 (40.6%) were moderately aware and 214 (46.7%) were well aware as shown in Figure 1.

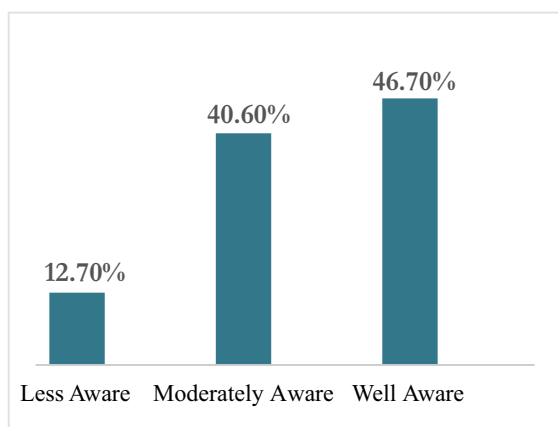


Figure 1: Awareness level of medical students

Our results showed that out of 459 students, 310 (67.5%) students were vaccinated for hepatitis B whereas 112 (24.4%) had not been vaccinated while 37 (8.1%) did not know whether they were vaccinated or not. This is shown in figure 2. Of the 310 students that were vaccinated, 184 students (59.35%) had completed all three doses while 126 students (40.65%) were partially vaccinated with two or less than two doses.

Also, of the students vaccinated, 18.4% were vaccinated in the past 1 year, 23.7% were vaccinated between 1-5 years ago, 11.6% were

vaccinated between 6-10 years ago and 26.5% were vaccinated more than 10 years ago.

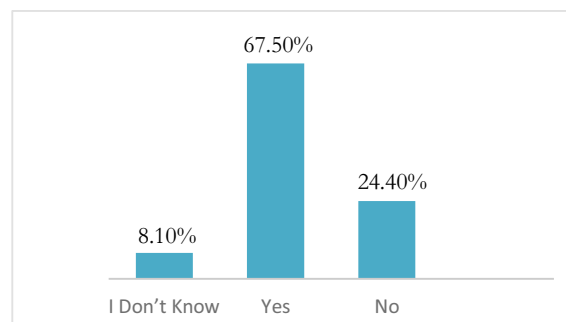


Figure 2: Percentage of vaccinated students

Two hundred and thirty one (74.5%) students were vaccinated either by the will of their parents or by their own will whereas seventy nine (25.5%) students were vaccinated by their institutions.

Twenty students (4.4%) had a family history of hepatitis B while 408 (88.9%) did not have a family history and 31 students (6.8%) did not know whether they had a family history of hepatitis B or not.

The most common reasons for lack of vaccination included: lack of awareness 33 (25.0%), lack of motivation 27 (20.5%), never thought of vaccination 25 (18.9%). as shown in figure 3.

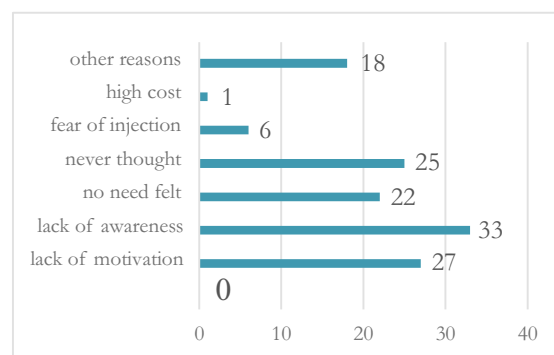


Figure 3: Reasons for not doing vaccination

About 201 (43.8%) students had contact with a hepatitis B patient, 197 (42.9%) had never had any contact with a hepatitis B patient and 61 (13.3%) did not know of any contact with a hepatitis B patient. About 192 (41.8%) had performed examination on a hepatitis B patient, 226 (49.2%)

had never performed examination on hepatitis B patient and 40 (8.7%) did not know of any examination on a hepatitis B patient.

Students who had taken blood or given injection to a hepatitis B patient was 90(19.6%), 322 (70.2%) had not taken blood or given injection to a hepatitis B patient and 46 (10.0%) did not know of taking blood or giving injection to a hepatitis B patient. About 264 (57.5%) students never wore gloves before examining patients in their clinical rounds while 194 (42.3%) wore gloves for examination of patients.

One hundred and forty-two (30.9%) students had received needle prick injuries previously whereas 305 (66.4%) students had not received needle prick injuries and 12 (2.6%) did not know of receiving any needle prick injuries.

DISCUSSION

Our study also showed 310 (67.5%) students were vaccinated for hepatitis B of which further 184 (59.35%) had completed all three doses whereas the remaining 114 (36.7%) had been partially vaccinated while 12 (3.87%) did not know if they were partially vaccinated or fully vaccinated. On the other hand 112 (24.4%) had not been vaccinated while 37 (8.1%) did not know whether they were vaccinated or not. A study done in Karachi (2009) showed that 79% of students were vaccinated for hepatitis B, of whom a further 70.6% had completed vaccination of three doses.¹¹

Another study conducted on health care workers and medical students of Lahore in 2000 showed that 42.20% medical students were vaccinated against hepatitis B,¹² while a study conducted in Mirpurkhas also on medical students in 2011 showed that 57% had been vaccinated against Hepatitis B, of whom a further 87.8% had completed all three doses while 13% were partially vaccinated.¹³

Furthermore the present study showed that main reasons for not being vaccinated were lack of awareness among 33(25.0%) students followed by

lack of motivation in 27(20.5%) students, never thought of vaccination 25(18.9%), no need felt 22(16.7%), fear of injection 06(4.5%), high cost 01(0.8%), whereas 18(13.6%) had other reasons not being stated. These show that there should be awareness programs on hepatitis B to increase the awareness and motivation of students for being vaccinated as well as to increase the importance and need for vaccination. On the other hand the study carried out in Mirpurkhas in 2011 showed that the main reason for not being vaccinated were lack of motivation among 29.2% students followed by no need felt among 24.8%, never thought of vaccination among 21.7% students, fear of injection in 10.5% and finally lack of belief in vaccination in 8.07% medical students.¹³

The current study further showed that 142(30.9%) students had received needle prick injuries, 201(43.8%) students had contact with a hepatitis B patient, 192(41.8%) had performed examinations on a hepatitis B patient, 90(19.6%) students had taken blood or given injection to a hepatitis B patient and 264(57.5%) students never wore gloves before examining patients in their clinical rounds. On the other hand, the study conducted in Karachi on medical students revealed that 50% of the students had received needle pricks injuries in their student life.¹¹

Similarly, a study conducted on hepatitis B vaccination status of health care workers showed that 54.71% of the health care workers had received needle prick injuries out of which only 56.60% had been completely vaccinated and only 56.91% health care workers wore gloves during handling blood or blood products.¹⁴

Limitations

A few limitations were faced in the present study. First of all the sample size was small compared to the total number of medical students studying in the medical colleges of Peshawar. Further work is needed to be done to carry out this study on a broad scale on the medical students as well as doctors who are working in the hospitals to know

their knowledge regarding fatal infectious diseases as well as their status of vaccination against such diseases. Also, large scale awareness programs need to be initiated in order to spread awareness and increase the knowledge and vaccination status of students and doctors against diseases such as hepatitis B.

Conclusion

A large number of students were not vaccinated despite the high awareness levels of the students and the availability of a cheap and easily accessible hepatitis B vaccine.

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Submitted for Publication: March 02, 2016.

The authors declared no conflict of interest and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

All authors contributed substantially to the planning of research, questionnaire design, data collection, data analysis and write-up of the article as part of a student research team at RMC. The research work was supervised by Dr. Mahmood Rahim, Lecturer, Department of Community Medicine at RMC.

This article may be cited as:

Shah MH, Roghani AK, Hakim I, Afridi NS, Zia-ur-Rehman, Khan ZF, Gandapur HK. Status of Hepatitis B vaccination among medical students undergoing clinical rounds in Peshawar, Khyber Pakhtunkhwa. Journal of Medical Students. 2016;2(1):33-8.