



## **Study on awareness and motivation for hepatitis-B vaccine acceptance and intervention for vaccination among 1<sup>st</sup> year MBBS students of GMC, Bhopal**

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### **Abstract**

**Background:** Hepatitis B infection among health care professionals can be prevented by strategies like vaccination, increasing awareness and following universal precautions. The present study was conducted on newly admitted medical students to evaluate their knowledge regarding HB disease and to know their vaccination status. This occasion was also used to motivate students to take HBV vaccine if not taken earlier.

**Methods:** An educational interventional study was carried out on 141 newly admitted 1<sup>st</sup> prof MBBS students of Gandhi Medical College Bhopal for duration of 12 months, 1<sup>st</sup> July 2016 to 30<sup>th</sup> June 2017. 141 of the students of 1<sup>st</sup> prof were enrolled for the study, to whom, education intervention was provided in the form of lectures using PowerPoint presentation followed by vaccination of the student for hepatitis –B. Pre and post intervention Data were collected using pretested questionnaire. Data was compiled using MS excel 2007 and analysed using Epi info 7 software.

**Results:** Only 55% of the students had good knowledge about disease and modes of transmission & prevention. Surprisingly half of them were unaware of high risk of transmission to health professional. Most of the students were unimmunized mainly due to lack of awareness and motivation.

**Conclusions:** It is recommended for Hepatitis B vaccination for all unimmunized students who enter medical profession. The orientation and sensitization programme should be held to create awareness regarding HBV infection.

**Keywords:** attitude, hepatitis B, knowledge, medical students, vaccine

### **Introduction**

Hepatitis B is an acute systemic infection with major pathology in the liver, caused by Hepatitis B virus (HBV) and transmitted usually by the parenteral route. Even after discovery of an effective vaccine it still continues to be a major public health concern worldwide. Globally more than 2 billion are infected and 350 million are suffering from chronic disease. About 6% of the world population is carrier for HBV accounting for about 80 million carriers. Annually about 5,00,000 to 1.2 million people die due to chronic hepatitis, cirrhosis, and hepatocellular carcinoma related to chronic HBV infection [1].

The prevalence of chronic HBV infection in different studies from India ranges from 2-10%, being below 8% liver cancer. India has intermediate to high endemicity. Based on an average HBSAg positivity rate of 5% the total HBV carrier pool in India is estimated at 50 million. Health professionals represent a high risk population for HBV infection. It is the most important infectious occupational hazards which the Indian health care providers encounter. In fact HBV infection is more dangerous compare to HIV infection vis-à-vis occupational exposure is due to the fact that its transmission rate after percutaneous exposure to blood is much higher (about 50%) than that of HIV [2]. A good knowledge of HBV virus means and modes of infection as well as adequate vaccination may reduce infection rate. The knowledge of HBV is generally low among the populace in a study carried

out among Turkish community in Netherland [3]. Medical students are susceptible to HBV infection during their exposure to clinical cases and different procedure. Since proper vaccination can prevent HBV infection, complete Hep-B vaccination is necessary for medical student. With this background the present study was carried out to assess the knowledge regarding various aspects of hepatitis B disease & to know the vaccination status of hepatitis B among the first year MBBS students and motivate student for vaccination.

### **Objectives**

1. To assess the knowledge about the hepatitis-B.
2. To create awareness and motivate students for hepatitis-B vaccine.
3. To determine the number of students immunized and number of doses received after awareness.
4. To find out the reason for not getting vaccine.

### **Methodology**

This was an educational interventional two point cross sectional study conducted on 1<sup>st</sup> year MBBS students of Gandhi Medical College, Bhopal.

**Study period:** 12 months, 1-07-16 to 30-6-17

**Study Participants and Study area:** 1<sup>st</sup> year MBBS students of Gandhi Medical College, Bhopal. (N=141)

**Inclusion Criteria:** Students of 1<sup>st</sup> prof who are willing to participate.

**Exclusion Criteria:** Students who are already vaccinated and who were allergic to first dose.

This study was carried out in three phases, the first of which was questionnaire based assessment; the second, education intervention via power point presentation institution of audio: visual modules among 1<sup>st</sup> year MBBS students followed by vaccination for hepatitis B; and the third was again the questionnaire based assessment. An educational intervention was given in the form of short lectures imparted with audio-visual method. Keeping in mind about the different aspects of disease, the contents for the lectures and audiovisual part were identified after a series of brain storming sessions among investigators, and this index list was further refined by known clinicians. The lecture was designed in the fashion of interactive session and were rearranged into a logical structured sequence and classified under the following:

(A) Basic about the hepatitis B (B) Knowledge about mode of transmission (C) Knowledge about preventive measures (D) Knowledge about complications of hepatitis B disease (liver cancer/cirrhosis)

All the images and videos used in this module were in the open domains and due credits to the original sources were given below the images. Institutional ethical clearance was obtained. Student was explained the purpose of the study and rapport was built up with the students and verbal consent was obtained from them. Briefing was done to the students

**Results**

**Table 1:** Awareness about hepatitis B Disease

	Observed Parameters	Pre intervention (yes)	Post intervention (yes)
1	Awareness about medical students being high risk	46 (32.62%)	133(94.32%)
2	Knowledge about mode of transmission		
	(a)Transfusion of blood and blood products	83(58.8%)	134(95.03%)
	(b)Sharing of needles	107(75.88%)	138(97.8%)
	(c)Multiple sex partners	68(48.2%)	129(91.4%)
	(d)Mother to Child transmission	52(36.8%)	117(82.9%)
3	Knowledge about preventive measures		
	(a)Universal precaution	102(72.34%)	135(95.74%)
	(b)Post exposure prophylaxis	42(29.78%)	136(96.45%)
4	Knowledge about complications of hepatitis B disease(liver cancer/cirrhosis)	60(42.5%)	135(95.7%)

Awareness about Hepatitis B disease improved after educational intervention in terms of- Awareness about medical students being a high risk group increased from 32.62% to 94.32%.

Knowledge about complications of hepatitis B disease (liver cancer/cirrhosis) increased from 42.5% to 95.7%.

Knowledge about transfusion of blood and blood products increased from 58.8% to 95.03% about sharing of needles increased from 75.88% to 97.8%. Also the knowledge about multiple sex partners and Mother to Child transmission increased from 48.2% and 36.8% to 91.4% and 82.9% respectively. Knowledge about preventive measures universal precaution increased from 72.34% to 95.74% and Post

regarding the questionnaire provided to them. Care was taken to ensure privacy and confidentiality.

Confidentiality of information was obtained by omitting any personal identifier from the questionnaire. Students were informed that they are free to skip any time or ignore any question or withdraw from their participation at any stage but to avoid such a kind of situation, the Participants were made comfortable by maintaining anonymity in the questionnaire administered to them. At the end of the study, the researcher answered all their queries satisfactorily.

Students were divided in five groups for vaccination.1<sup>st</sup> dose of vaccine was administered in injection room of hamidia hospital on 19, 20, 21, 22 and 23 October, 2016. 2<sup>nd</sup> dose of vaccine was also administered in injection room of hamidia hospital on 20, 21, 22, 23 and 24 November, 2016 and 3<sup>rd</sup> dose of vaccine also administered in injection room of hamidia hospital on 20, 21, 22, 23 and 24 May, 2017 The fourth was post intervention based assessment, in which we distributed questionnaire to the students.

**Statistical analysis**

**Data obtained were collated and analyzed statistically by simple proportions**

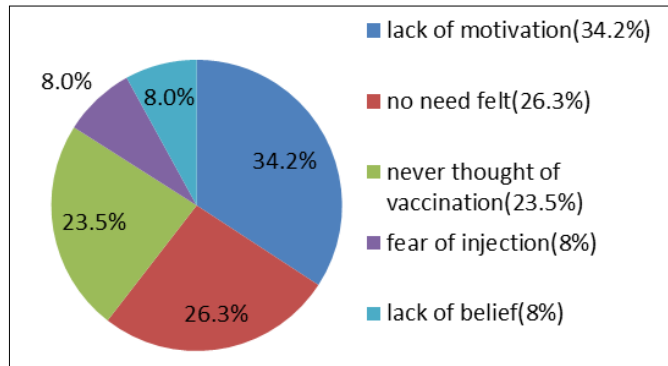
Each completed questionnaire was coded on pre-arranged coding by the principal investigator to minimize errors. Data were analyzed using excel windows 2007. The descriptive analysis including proportions, percentages, frequency distribution and measures of central tendency was done.

exposure prophylaxis increased from 29.78% to 96.45% respectively.

**Table 2:** Distribution of the Students According To Their Vaccination Status

Gender	Pre Interventional Vaccination Status	Post Interventional Vaccination Status
Male(80)	5(6.25%)	61(76.25%)
Female(61)	3(4.91%)	37(60.65%)
total(141)	8(5.67%)	98(69.5%)

Vaccination status of 1<sup>st</sup> prof students increased from 5.67% to 69.5%



**Fig 1:** Showing Reason for not getting vaccinated (Pre Intervention)

The main reason for not getting vaccinated earlier is lack of motivation (34.2%) followed by no need felt (26.3%)

### Discussion

In our study the overall 55% of the student were aware about Hepatitis B disease (mode of transmission, preventive measures and knowledge about complication) but only 32.6% of the students were aware of risk to health care personnel 5.67% of the students were vaccinated and 6.25% students were having incomplete vaccination. Study conducted by Anjali Singh & Shikha Jain 63% of MBBS students were vaccinated against hepatitis B [4]. But in a study conducted in Orissa by Singh *et al*, the vaccination rate was 80% among the medical students [5]. A study conducted in Syria observed that awareness among first year medical students about HBV was 89.06% and causative agent was answered correctly by 67.1% [6]. About 51.5% students said ideal age for vaccination as infancy and only 50% agreed that health professional are at high risk. These results show more awareness to be created among students regarding risk to health care workers.

Many studies including our study have shown role media in spreading awareness. Most students were aware about the routes of transmission. Similar observations were made by study in Chennai where 86.7 % dental students were aware about correct modes of transmission of hepatitis B virus [7]. The awareness about modes of transmission in our study was better compared to Syrian study were only 57.81%, 31.25%, 34.37% students identified correctly transmission modes *viz.* transfusion of blood, sexual intercourse, mother to her baby respectively [6].

The preventive measures were better known to our students compared to Study in Jammu where they reported that use of condoms and sterile needles was proposed by 20%, avoidance of addiction by 50%, and immunization with hepatitis vaccine by 60% of the women as preventive measures against HBV infection [8].

In our study Awareness about Hepatitis B disease improved after educational intervention in terms of Awareness about medical students being a high risk group increased from 32.62% to 94.32%. Knowledge about complications of hepatitis B disease (liver cancer/cirrhosis) increased from 42.5% to 95.7%. And Vaccination status of 1<sup>st</sup> prof students increased from 5.67% to 69.5% whereas The main reason for not getting vaccinated earlier is lack of motivation (34.2%) followed by no need felt (26.3%)

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