



## Hepatitis B awareness and vaccine coverage among students of a north Indian medical College

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### Abstract

**Background:** Hepatitis B infection is caused by Hepatitis B virus (HBV) which is transmitted via exposure to infected blood and body fluids. The risk of contracting hepatitis B infection, has been recognized as an occupational risk for health care practitioners (HCP) due to their exposure prone nature of work. Since proper vaccination can prevent HBV infection, complete hepatitis B vaccination is strongly recommended for health-care personnel, including medical students and students of other health professions.

**Aims and Objective:** This study was undertaken with an aim to evaluate the knowledge regarding Hepatitis B infection, its prevention and immunisation status among medical students.

**Materials and Methods:** This cross-sectional questionnaire based study was conducted among 127 medical students. The questionnaire had three parts for socio-demographic data, questions with reference to Hepatitis B and regarding hepatitis B immunization status.

**Results:** The response rate was 94.77%. The knowledge scores as assessed by the second part of the questionnaire revealed that all the participants had fair to good knowledge with reference to the disease, transmission, sources of infection, and prevention of infection. The number of students that were completely vaccinated, partially vaccinated and unvaccinated was 59(46.45%),45 (35.43%) and 23 (18.11%) respectively.

**Conclusion:** The medical students had fairly adequate knowledge regarding the disease and its prevention but the vaccination practices among them were not satisfactory. This demonstrates a huge gap between knowledge and practice among students which needs to be addressed by health awareness and Hepatitis B vaccination programs in medical colleges.

**Keywords:** Knowledge, Hepatitis B, vaccination, medical students.

### Introduction

Hepatitis B is a public health problem affecting about 10% of the world population.<sup>(1)</sup> Hepatitis B infection is caused by Hepatitis B virus (HBV) which is transmitted via exposure to infected blood

and body fluids.<sup>(2)</sup> This infection affects the liver and is the most common cause of chronic hepatitis, liver cirrhosis and hepato-cellular carcinoma.<sup>(3)</sup>

Occupational exposure via percutaneous injuries is a well known risk factor for hepatitis B transmission.<sup>(4)</sup> The risk of contracting hepatitis B

infection, has been recognized as an occupational risk for health care practitioners (HCP) due to their exposure prone nature of work.<sup>(5)</sup>

HBV can remain stable on environmental surfaces for up to 7 days. It is thus the greatest threat of infection for HCP.<sup>(6)</sup> This risk may be higher during the professional training period.<sup>(7,8)</sup>

No medication can cure HBV but the infection can be prevented by following a simple and available vaccination schedule. The hepatitis B vaccine is safe and effective if appropriate doses are given during a period of 6 months, it has more than 90% effective protection after all doses.<sup>(9,10)</sup> In India, hepatitis B vaccine was launched in 2003 along with a birth dose within 24 h which was expanded to the whole country in 2008.<sup>(11)</sup> Most of the country's population born before 2008 has not received hepatitis B vaccination except few who might have brought it from the private sector, currently, the proportion of population engaged in high-risk environments such as the health-care sector hails from this cohort of population. In a resource-limited settings of a low- and middle-income country like India, The current World Health Organization (WHO) guidelines advocate to implement hepatitis B vaccination coverage programs to be tailored within the present facilities and platforms of medical institutions, national programs, workplaces, government schools, offices, etc., for opportunistic vaccination drives.<sup>(12)</sup>

Since proper vaccination can prevent HBV infection, complete Hepatitis B vaccination is strongly recommended for health-care personnel, including medical students and students of other health professions<sup>(13)</sup> But various studies done in our country have demonstrated low Hepatitis B vaccination coverage among health care professionals and students. Hence this study was undertaken with an aim to evaluate the knowledge regarding Hepatitis B infection, its prevention and immunisation status among medical students.

### Materials and Methods

This cross sectional prospective study was conducted in the Department of Physiology, SKIMS medical college, Srinagar from April to June 2017.

A sample of 134 medical students was taken and a brief introduction of the study was given to them. Voluntary participation was emphasised, anonymity and confidentiality were assured. A self-administered, anonymous questionnaire consisting of 3 parts was distributed among them. The first part consisted of socio-demographic data, the second part consisted of a multiple choice questions with reference to Hepatitis B like knowledge about the disease, transmission, sources of infection, and prevention of infection. The third section had questions regarding hepatitis B immunization history, number of doses received and reasons for non-compliance among those who had not completed three doses. The questionnaires were distributed in a single day in order to avoid sharing of information among students. Data was entered and analyzed in Microsoft excel percentages were calculated and the results were presented in the form of tables.

### Results

Out of the 134 students only 127 returned the fully filled questionnaire and formed the final study group, thus the response rate was 94.77%. The study group consisted of 53.54% (68) females and 46.45% (59) males. Their mean age was  $20.32 \pm 3.04$  years. The knowledge scores as assessed by the second part of the questionnaire revealed that the participants had fair to good knowledge with reference to the disease, transmission, sources of infection, and prevention of infection. (Table 1)

**Table 1:** Distribution of Knowledge scores among students.

Knowledge scores	No. of students(%)
Good	78(61.41%)
Fair	49(38.58%)
Poor	00(00%)

Almost all students (95.27%) had knowledge of hepatitis B virus, 88.18% of students had correct knowledge regarding all modes of transmission, 80.13% had correct knowledge regarding sources of infection, 77.95% had knowledge of at risk groups and 72.44% knowledge of preventive practices including vaccination. (Table 2)

**Table 2:** Distribution of the participants according to their knowledge regarding hepatitis B.

S.no.	Knowledge sections	Percentage (%)
1	Causative organism	95.27
2	Modes of transmission	88.18
3	Sources of infection	80.13
4	At risk groups	77.95
5	Prevention practices	72.44

Despite of having high scores with reference to knowledge the number of students that were completely vaccinated, partially vaccinated and unvaccinated was 59(46.45%),45 (35.43%) and 23 (18.11%) respectively.

A high percentage (35.43%) of students were partially vaccinated i.e. had taken one or two doses. The reasons for non-compliance were many and are mentioned in Table 3. The most common reason was an upcoming exams either a terminal, pre-university or university exam which lead to missing the dose(46.66%).

**Table 3:** Reasons for non-compliance of hepatitis B vaccination

S.no	Reason	No. of students (%)
1	Upcoming exams	21(46.66%)
2	Forgetfulness/Lack of remainder	9(20.00%)
3	Fear of injection/adverse reaction	3(06.66%)
4	Planning to get immunized later	5(11.11%)
5	Others	7(15.55%)

### Discussion

The results of the current study showed that the levels of knowledge regarding Hepatitis B, its transmission, sources of infection and prevention were fairly adequate among the medical students. This is in accordance with previously conducted studies which have shown similar knowledge levels regarding Hepatitis B among medical professionals and paramedical staff.<sup>(14,15)</sup>

The study also found out that a large number of students were not vaccinated (18.11%) or were partially vaccinated (35.43%). A little less than half were fully vaccinated (46.45%). Similar findings were obtained by other studies conducted among medical students.<sup>(16,17)</sup>

The overall knowledge of Hepatitis B was fair to good among the study participants. But their vaccination practices were not satisfactory as even after having adequate knowledge with reference to the disease and its prevention many students had not got themselves vaccinated. Medical students form a high risk population as they are susceptible to HBV infection during their exposure to clinical cases and different procedures. Hence, medical students have to be sternly advised to get vaccinated against HBV before coming to clinical side, as only then will they acquire good immune response with immune memory.<sup>(18)</sup> These findings strongly advocate a health awareness and hepatitis B vaccination drive among medical students as these 'would be doctors' are a precious resources. They should be provided with protection against Hepatitis B which they are very likely to encounter in their medical career.<sup>(19)</sup> Data was collected from a single medical college hence results cannot be generalised and this forms an important limitation of the study. Small sample size is another limitation.

### Conclusion

The medical students had adequate knowledge regarding the disease and its prevention but the vaccination practices among them were not satisfactory. This demonstrates a huge gap between knowledge and practice among students which needs to be addressed by health awareness and Hepatitis B vaccination programs in medical colleges.

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