

# Preventive Practice with Hepatitis-B Vaccine among the Lab Technicians of some Selected Hospitals in Dhaka City

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## Abstract

**Background:** Hepatitis B, an acute inflammatory disease of the liver or a form of viral hepatitis is caused by the hepatitis B virus (HBV). About 2 billion people worldwide have been infected with the virus and about 350 million live with chronic infection. Hepatitis B is the most important infectious occupational hazard which the lab technicians encounter. Healthcare personnel specially lab technicians represents a high risk population for HBV infection.

**Objective:** The study was conducted to determine the practice of Hepatitis B vaccination among lab technicians working in hospitals. The study also explores the reasons of not taking hepatitis B vaccine by a group of lab technicians.

**Methods:** It was a descriptive cross sectional study conducted through face to face interview using a semi-structured questionnaire among lab technicians in two hospitals of Dhaka city (Holy Family Red Crescent Medical College Hospital & City Dental College) from January to June 2010. A total 120 respondents were included purposively as respondents.

**Results:** Among 120 respondents, most(65.0%) of them received vaccine whereas 35.0% did not take any vaccine. Among the respondents who initiate vaccination about 48.1% finished taking the vaccines whereas 51.9% did not finish taking the vaccines. Negligence was found to be the major cause for not taking the vaccine and very few of them perceived that the prevalence of Hepatitis B remains high among lab technicians.

**Conclusion:** All hospital personnel including lab technicians should be trained up on the importance of Hepatitis-B vaccination with a view to self motivation and can also motivate their clients, relatives and general population. Scope of orientation courses at interval for the lab technicians can enhance motivation towards wider coverage of hepatitis B vaccination for this group of health care personnel in particular.

## Introduction

Viral Hepatitis is one of the major public health problems all over the world as it is silently gaining the momentum to cause an epidemic of vast magnitude. But there is no effective treatment available and only some preventive measure can protect the individual from contacting the disease to a longer extent. More than 2 billion people worldwide have evidence of past or current HBV infection and 350 million are chronic carriers of the virus, 80,000 people, mostly young adults, get infected with HBV. More than 11,000 people have to stay in hospital because of Hepatitis-B virus. Hepatitis- B virus causes 60 to 80 percent of all primary liver cancer, which is one of the three top causes of cancer death in East and SEAR, the Pacific basin and Sub - Saharan Africa. At least 1 million people with chronic HBV infection die each year from cirrhosis

and liver cancer. Hepatitis B is spreading fast in developing countries like Bangladesh but in the developed countries affects only certain risk group (Homosexual and drug addicts), living in large metropolitan areas<sup>1</sup>. As because there is no effective treatment Hepatitis- B and lengthy carrier state and ultimate fate is hepatocellular carcinoma and vaccination is the only way to prevent this. Being in the South- East region, it is likely Bangladesh having endemicity at more than eight percent<sup>2</sup>. Though national level study so far not has been carried out, a number of individual studies were carried out during the last decades. These studies are mostly Dhaka based and among different risk groups and shows 8% to 45% percent prevalence<sup>3</sup>. In Bangladesh, medical research regarding Hepatitis -B vaccine is limited. There is no true population based data available but HBV infection appears to be intermediately. The Hepatitis B vaccine is 95% effective and can be given safely to infants, children and adults. The vaccine can prevent infection even when it is applied before or within 7 days after exposure to infection. Adult people should get 3 doses of Hepatitis B vaccine Adolescents 2 to 15 years of age may need only two doses of Hepatitis - B vaccine, separated by 4-6 months<sup>4</sup>. Hepatitis B is an endemic disease throughout the world especially in tropical and developing countries and also in some region of Europe. Its prevalence varies from country to country and depends upon a complex mixture of behavioral, environmental and host factors. It is highest in countries or areas where socio-

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economic status is lower, for example, China South East Asia and South America and it is lowest on countries or areas with high standard of living.<sup>5</sup>

## Materials and Methods

This was a descriptive cross sectional study conducted by face to face interview on the basis of a structured questionnaire duly pre-tested to determine the proportion of Hepatitis B vaccination among lab technicians in two hospitals during the period from January to June 2010. There were 120 lab technicians selected purposively from the Dhaka Holy Family Red Crescent medical College Hospital & City Dental College Hospital as respondents.

## Results

There was a prevalence of married person 65.0% than unmarried 35.0%. All respondents were well educated. 95.8% had honors degree and 4.2 % had master's degree. Table 2 indicates that among 120 respondents, most of them received vaccine (65.0 %) whereas 35.0% did not take any. Table 3 indicates that among 79 respondents, 38 (48.1%) finished taking the vaccines whereas 41(51.9%) did not finish taking the vaccines. *Vaccination awareness:* Table 4 indicates 66.2% (45) took their vaccine in 0, 1, 6 month. Table 5 indicates, 44(36.7%) of respondents thought prevalence of hepatitis is high among lab technicians. 63.3% didn't think so. In this study the reasons for not taking Hepatitis B vaccine were among 64%, 19%, 7%, 7% and 3% as negligence, others, high prize, don't felt needed and suspicious efficacy respectively (Fig 1).

**Table 1:** Distribution of the respondents according to socio-demographic variables (n=120)

Attributes	Frequency	Percentage
<b>Age group (In years)</b>		
≤ 20	7	5.8
21-30	83	69.2
31-40	29	24.2
> 40	1	0.8
Total	120	100.0
	Mean(±SD)=26.6(±5.29) years	
<b>Gender</b>		
Male	54	44.20
Female	66	55.80
<b>Marital Status</b>		
Married	78	35.0
Unmarried	42	100.0
Total	120	
<b>Educational qualification</b>		
Non institutional	4	3.3
HSC	15	12.5
Honors/masters	62	51.7
Others	39	32.5
Total	120	100.0
<b>Religion</b>		
Muslim	110	91.70
Hindu	7	5.8
Christian	2	2.5
others	1	0.83
Total	120	100.0

Table 1 shows among 120 respondents maximum (69.2%) were from the age group 21-30 years. Mean age of respondents was 26.6(±5.29) years. There were female 55.8% and male 44.2%. About 91.70% of respondents were Muslim, 5.8 % were Hindu and 2.5% were Christian.

**Table 2:** Distribution of respondents according to status of receiving vaccines of hepatitis B

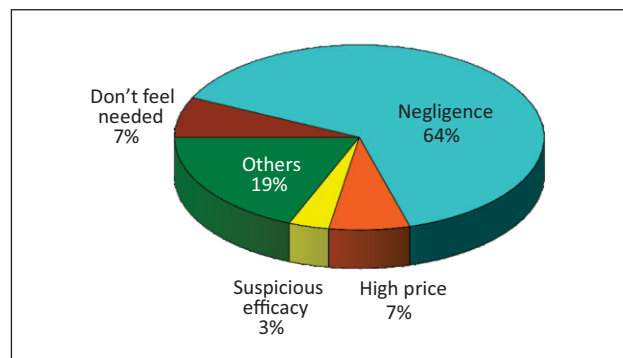
Status of receiving vaccines of hepatitis	Frequency	Percentage
Yes	78	65.0
No	42	35.0
Total	120	100.0

**Table 3:** Distribution of respondents according to finishing of doses of vaccines

Finishing of doses of vaccines	Frequency	Percentage
Yes	38	48.1
No	41	51.9
Total	79	100.0

**Table 4:** Distribution of respondents according to completion months of vaccine

Months of vaccine taken	Frequency	Percentage
0,1,2 month	1	1.5
0,1,6 month	45	66.2
Cannot remember	22	32.4
Total	68	100.0



**Figure 1:** Distribution of respondents according to cause for not taking the vaccines

**Table 5:** Respondents knowledge about prevalence of hepatitis B is high among lab technicians

Prevalence of hepatitis B is high among Lab technicians	Frequency	Percentage
Yes	44	36.7
No	76	63.3
Total	120	100.0

### Discussion

All the respondents knew about the availability of the hepatitis-B vaccine. This suggests a high awareness amongst technical staff of its importance, and is similar to, the findings of such a study done on Hepatitis B vaccination in the United kingdom<sup>9</sup>. About 37% of respondents thought prevalence of hepatitis is high among lab technicians. About 64% didn't think so. There were few causes of high prevalence of hepatitis B among lab technicians. In another

study in Ethiopia they found more than half (51%) of health professionals have never received hepatitis B vaccine. From health professionals who received the vaccine only 82 (58.6%) received the full course of the vaccine. Overall percentage of HPs in GUH who receive full course vaccination against HBV is 28.7%. Laboratory technologists are 12.5 times less likely to complete their HBV vaccination, that matches the sincereo to this study.<sup>6</sup> In a study in Sudan they found 97.2% of doctors, 98.6% of nurses, 94.8% of laboratory technicians and 95.7% of other paramedical knew that HBV transmitted via blood. For hygienic precautionary measure; the current study disclosed that 81% of the responding providers were routinely used to recap needles after use and only 33% of doctors were always wearing gloves. Gloves were not readily available in all units where there is a high risk of infectious occupational exposure. More than 50% (p< 0.001) of health care workers were not vaccinated against HBV. Healthcare workers had poor knowledge about Universal Standard Precautions Guidelines, and do not fully appreciate their occupational risk regarding Hepatitis B infection which also resembles to current study.

### Conclusion

Negligence was found to be the major cause for not taking the vaccine and very few of them think that the prevalence of hepatitis B is high among lab technicians. Hospital personnel's including lab. Technicians should be trained up on the importance of Hepatitis-B vaccination with a view to self motivation. Scope of orientation courses at interval for the lab technicians can enhance motivation towards wider coverage of hepatitis B vaccination for this group of personnel. Further in depth study could help investigate to explain role of these factors. All health care personnel should be trained up so that they can save themselves and can also motivate their clients, relatives and general population

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