

HEPATITIS B VACCINATION AMONG HEALTH CARE WORKERS: A STUDY ON COVERAGE AND ASSOCIATED FACTORS AT A TERTIARY CARE HOSPITAL OF BIHAR

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Abstract

Background: Among the communicable disease of major public health importance, Hepatitis B virus infection shares a considerable proportion. Those at higher risk are health care workers from all the strata due to the chances of body fluid contact or needle stick injury. The current study was done to assess HBV vaccination coverage and to explore possible reasons for non-vaccinated among health care workers at a tertiary care hospital of Bihar. **Materials and Methods:** A facility-based observational study with cross-sectional design was conducted by Dept of Community Medicine. With the help of study tool quantification of vaccination coverage and exploration of associated reasons among those unvaccinated were collected. The time frame for the study was January 2023 to October 2023. All healthcare workers working at Kishanganj Medical College and Lions Seva Kendra Hospital were included after obtaining informed consent. Data thus collected were entered and analysed using SPSS version 22.0. **Result:** A total of 161 participants were included in the study. Out of these, 61.9% were vaccinated at any point of time. The majority of HCWs (83.9%) had good knowledge about HBV infection and coverage for booster not required. The main reasons for not getting vaccinated were unavailability of the vaccine, out of pocket expenditure, lack of time, injection prick fear or pain and ignorance. **Conclusion:** The prevalence of HBV infection has been well documented among HCWs. Administration of hepatitis B vaccine has shown to lower this risk of infection. But still there is a substantial scope for health awareness and popularization of vaccine with the doses to overcome this public health challenge.

INTRODUCTION

With a prevalence of 3–4.2% of Hepatitis B surface antigen (HBsAg) and 40 million HBV carriers, India ranks in the intermediate endemic zone for the Hepatitis B virus (HBV) infection in the world.^[1] The Global Health Sector Strategy on viral hepatitis (2016–2021) endorsed by the World Health Assembly in 2016, called for the elimination of viral hepatitis as a public health threat by 2030.^[2] HCWs are four times more likely to be infected with HBV compared to the general population.^[3] This may be due to a lack of compliance with infection control

recommendations from established guidelines.^[4] In turn, HBV-infected HCWs pose a potential risk for patients as there is a documented chance of HBV transmission to patients from treating doctors or medical staff.^[5] Vaccination is considered the most effective and feasible means of preventing hepatitis B viral infection.^[6] Three doses with the second and third doses being administered one and six months after the initial dose, respectively, are considered complete vaccination against HBV.^[7] WHO recommends the hepatitis B vaccine for those at the highest risk of acquiring HBV infection, including healthcare workers.^[8] Although health professionals need to be especially considered for HBV

vaccination, WHO has estimated that HBV vaccination status among healthcare professionals is only 18-39% in low- and middle-income countries compared to 67-79% in high-income countries.^[9] Reports from India indicate that only 16-60% of HCWs have received complete HBV immunization. Paramedics though have a higher risk transmission and receive HBV vaccination less often than doctors.^[10] There is a dearth of literature on the status of HBV vaccination among HCWs in this part of the country in the recent past. With the above background the study was conducted with the following objectives. To assess HBV vaccination coverage and to explore possible reasons for unvaccinations among healthcare workers at a tertiary care facility in Bihar.

MATERIALS AND METHODS

Type of Study: A facility-based observational study with cross-sectional design was conducted by Dept of Community Medicine.

Study Period: The time frame for the study was January 2023 to October 2023.

Place of Study: All types of HWCs working at MGM Medical College and LSK Hospital were included. They received counseling and explanation on the purpose of the study by the principal researcher, after obtaining informed consent forms.

Data Collection Technique: Data were collected with the help of predesigned, pretested, semi-structured schedule.

Inclusion Criteria

All types of HCWs

Exclusion Criteria

- Chronic liver disease;
- Prolonged steroid therapy or immunosuppression
- Those who refused to give consent

The schedule consists of four important components:

1. Knowledge of HCWs about general concepts regarding HBV virus and its transmission and prevention,
2. Knowledge of HCWs about hepatitis B vaccine need, indications, dosage and monitoring of response,

3. Hepatitis B vaccination status of HCWs, and
4. Reason for incomplete or no vaccination.

Statistical analysis: Data procured via the filled-up schedule were entered in MS Excel and then was analyzed using software SPSS ver. 20.0.

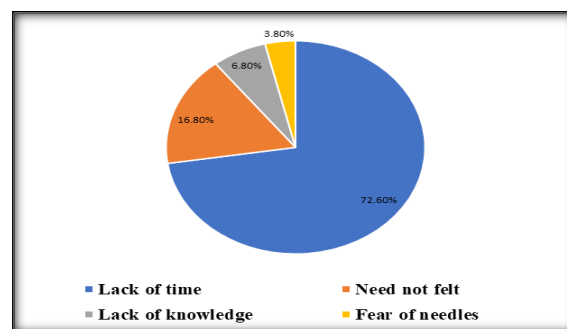
RESULTS

A total of 161 participants were included in the study. The mean age of the study participants was 36.7 years with a SD of 11.2 years. The male to female ratio was 1.2:1. Out of these, 52 were consultant doctors, 43 were resident doctors, 41 were nursing staffs and rest 25 were house-keeping staffs. At the time of study, 53.8% were completely vaccinated. Among all HCW recruited, most correct responses were obtained by doctors. Awareness and knowledge about HBV were least among the house-keeping staff who are the most vulnerable group.

Alarming, a few doctors and nursing staff were found to have lacunae in knowledge about certain aspects of HBV vaccination like the strategy in case of vaccine schedule interruption and about response monitoring of HBV vaccine. [Table 1]

Nursing staffs and others had inadequate knowledge regarding Dosage and schedule of Hepatitis B vaccine. [Table 2]

Majority of unvaccinated were from house-keeping (86.8%) followed by technician (70.30%). [Table 3]



Main reasons for incomplete or non-vaccination reported unavailability of time for complete vaccination, not feeling the need to take vaccine or fear of needles. [Figure 1].

Table 1: Awareness of Transmission and Prevention of HBV.

Participants	Transmission	Prevention
Others	21.20%	42.80%
Nursing's staffs	88.60%	91.20%
Residents	96.50%	100%
Doctors	100%	100%

Table 2: Awareness of Dosage and schedule of Hepatitis B vaccine

Study Subjects	Dosage and schedule
Others	7.80%
Nursing's staffs	57.90%
Doctors & residents	82.90%

Table 3: Vaccination status of various groups of HCWs recruited in the study

Participants	Vaccinated	Partial vaccination	unvaccinated
Doctors	92.80%	4.10%	3.10%

Residents	61.60%	11.60%	26.80%
Nursing's staffs	21.80%	15.60%	62.60%
Technicians	20.10%	9.60%	70.30%
House-keeping staffs	11.80%	1.40%	86.80%

DISCUSSION

The study showed that the uptake of Hepatitis B vaccine among the doctors was good, more than 92% of them had completed the vaccination and only 3.10% doctors were unvaccinated. More than 60% of HCWs have taken vaccination in the present institute indicating, good hospital policy for vaccinating and protecting the HCWs against, Hepatitis B infection. Gender and years of experience were not associated with the Hepatitis B vaccination status. However, variables like educational status, professional background were the significantly associated with more vaccine uptake. Although 53.8% of the HCWs had taken all the 3 doses, the 92.80% Doctors are vaccinated and 11.80% house-keeping staffs are least vaccinated. The study did not provide the break down nor specified the proportions that had received 1, 2, or 3 doses. Similar study done in tertiary health care center among 50 health care workers in Calicut district of Kerala reported coverage of 34.6% complete Hepatitis B vaccination.^[11] This was very low coverage compared to our study. Other studies in North Kerala among the of the health care workers the prevalence of Hepatitis B was found to be zero and however the prevalence of Hepatitis C was 0.79% (anti HCV positive).^[12] Another study in Kerala, found the similar results of zero prevalence of HBV infection and 0.8% of HCV prevalence among HCWs.^[13]

CONCLUSION

The present study identifies the gap areas in achieving the goal of 100% coverage of HBV vaccination among HCWs. We find that attitudinal changes and sustained awareness campaigns are input to achieving this goal even when employer-mandated supplies are available in the hospital. Maintenance of documentation of vaccination and estimation of anti-HBs titers are other deficient practices that might be focused as further scope of the current study.

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