ISSN: 0975-5160

Available online on www.ijtpr.com

International Journal of Toxicological and Pharmacological Research 2021; 11(2); 01-09

Original Research Article

Awareness and Risk Perception of Hepatitis B Infection Among Nursing Staff in Tertiary Care Hospital in "A" Grade City of India

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Received: 17-02-2021 / Revised: 19-03-2021 / Accepted: 18-04-2021
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Conflict of interest: Nil

Abstract

Background: Hepatitis B infection (HBV) is one of the major public health problems globally and is the 10 th leading cause of death. Worldwide, more than two billion of the population has evidence of past or recent HBV infection and there are more than 350 million chronic carriers of this infection. With the increasing number of invasive diagnostic and therapeutic procedures, there is an increasing risk of HBV infection to the nursing staff. The nursing staff constantly come in contact with blood and its products due to daily handling of biomedical wastes and while performing invasive procedures. Hence, it is necessary for them to be aware of HBV and its prevention. In the present study, we have aimed at investigating the HBV infection related awareness and occupational risk perception of the Nursing Staff. Therefore, the following study is being conducted. **Methods:** It is a cross-sectional type of descriptive study with sample size of about 200 conducted at Medical College and tertiary care centers of an urban city. Questionnaire and interview based study. Approval was taken from Institutional Ethics Committee (IEC).Permission to conduct the research was obtained from appropriate authorities. Study participants were recruited from a Medical college and various hospitals of a "A Grade" city. Voluntary consent was taken. **Results: Knowledge:** Overall percentage of knowledge about hepatitis B infection (modes of transmission, methods of prevention, vaccination and curability) is quite satisfactory among the study participants. **Awareness:** Overall result of awareness about Hepatitis B infection is adequate in this study. **Practice:** Overall practices among the participants regarding their own vaccination and preventive methods taken were not very satisfactory as compared to knowledge and awareness about the infection. **Conclusions:** Infection from Hepatitis B virus can be deadly not only to the people who are infected from it but also to the

close contacts of the infected person. Though the Knowledge about the virus and awareness about the practices to be followed is adequate in this study but still practices to follow them are lacking.

Keywords: HBV infection, hepatitis B infection

Introduction

Hepatitis B infection (HBV) is one of the major public health problems globally and is the 10 th leading cause of death. Worldwide, more than two billion of the population has evidence of past or recent HBV infection and there are more than 350 million chronic carriers of this infection. [1] The number of HBsAg carriers in India has been estimated to be over 40 million. Estimates indicate that annually over 100,000 Indians die due to illness related with HBV infection [2].

Transmission of HBV occurs through percutaneous or per mucosal exposure to infective body fluids. In addition to sexual contact and drug injection, nosocomial transmission is also a possibility [3]. Nursing staff have a higher risk of occupational exposure to hepatitis B virus infection than the general population. Daily handling and exposure to biomedical wastes, blood, and its products make the vulnerable to blood borne diseases among which Hepatitis B is one of the world's most common and serious infectious diseases Blood and blood products are the most common vehicle of transmission in healthcare settings [4]. With the increasing number of invasive diagnostic and therapeutic procedures, there is an increasing risk of HBV infection to the nursing staff [5]. The nursing staff constantly come in contact with blood and its products due to daily handling of biomedical wastes and while performing invasive procedures [7]. Hence, it is necessary for them to be aware of HBV and its prevention[8].

According to the most recent World Health Organization estimate, two billion people worldwide have serologic evidence of past or present HBV infection, and 360 million are chronically infected and at risk for HBV-related liver disease. Approximately one third of all cases of cirrhosis and half of all cases of hepatocellular carcinoma can be attributed to chronic HBV infection. HBV is estimated to be responsible for 500,000–700,000 deaths each year [9].

In the present study, we have aimed at investigating the HBV infection related **awareness and occupational risk perception** of the Nursing Staff. [10]. The purpose of this study is therefore to assess knowledge of HBV and hepatitis B vaccine, frequency of vaccination, and understanding the risk factors & complications of HBV infection among nursing staff, nursing students, nursing interns, who are considered to be at high risk and are working in tertiary care hospital in a **A grade city of India**. [11] Therefore, the following study is being conducted.

Objectives:

1. Assessment of knowledge, awareness and risk perception about **Hepatitis B** infection among nursing staff.

2. To check the practices they follow to prevent themselves from being infected.

Methodology

Type of study: Cross-sectional study

Place of study:

Medical College and tertiary care hospital from A grade city in India

Sample size: Minimum of 200 (as calculated by statistician)

Study participants: (working in tertiary care hospital in A grade city in India)

1. Nursing staff

2. Nursing interns

3. Final year nursing students

Study design:

Questionnaire and interview based study. Selection of respondents from different departments was based on systematic random sampling Prior permission was taken from heads of relevant departments of the institutions. Permission and clearance was taken from the **Institutional Ethics Committee**. Confidentiality of identity was insured to all the nursing staff and a written consent was taken prior to asking of the questionnaire. Data was collected using pre-designed questionnaire.

Questionnaire:

A close-ended questionnaire containing twenty six questions was asked to the nursing staff. The questions pertained to information regarding knowledge and clinical attitudes and behavior for hepatitis B infections. Demographic data including sex, age, marital status, and income were asked.

Twenty-three questions with subparts were used to explore knowledge levels. These questions included a question on awareness and knowledge regarding hepatitis B infection and the respondents were supposed to be asked if they knew about the hepatitis infection. Another question was based on modes of transmission of hepatitis B. It included options such as blood and blood products, sharps and needles, sexual intercourse, transmission during blood transfusion, transmission during organ transplantation, transmission during dialysis, transmitted during pregnancy from mother to child. Knowledge about the vaccine against this infection and source of knowledge about the vaccine against hepatitis B were asked, Knowledge regarding exposure to the infection due to their profession and questions regarding the hepatitis vaccine they have received and its dosage received were asked.

Calculations and Results

The study was conducted successfully and analyzed with complete understanding using SPSS version 22.0.

Result is presented under following **heads**:

1. Socio-demographic data

2. Awareness about danger of being infected by Hepatitis B infection

3. Knowledge about the Virus (Hepatitis B)

4. Practices to prevent themselves from getting the infection.

Socio-demographic results:

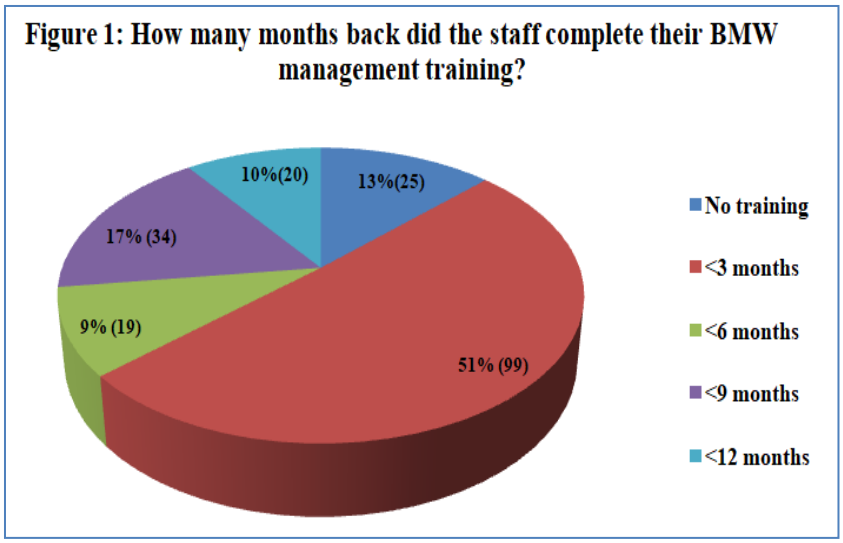
- 70% of the nurses have the **qualification** of auxiliary mid wife, in tertiary care hospitals in "A" grade city of India followed by RGNM then BSc. nursing.
- **Work experience** of 40% nurses is less than 5 years. 36 percent of the nurses are newly appointed with a work experience of less than 1 year; only 12 % of the nurses have an experience of more than 10 %.
- **Income** of 37% nurses is more than ten thousand, 30% of the nurses are paid less than five thousand. Only 21 % nurses are paid twenty thousand or more. This how the nurses are paid in tertiary care hospitals in A grade city.

- 53% of the nurses working in a tertiary care unit are **married**, and 47% are unmarried.

- 92% of the nurses working in tertiary care centre in an A grade city are **females** only 8 % are male nurse.

Awareness:

- **87%** of the nurses working in tertiary medical care has completed their **biomedical waste training**, they know the hazards if biomedical waste isn't disposed properly, they know that the biomedical waste is equally hazardous to the environment and humans.



- **82%** of the nurses had the knowledge that **hepatitis B virus** is **most dangerous** among all the hepatitis virus types. 9.5% knows that it is hepatitis A which is most dangerous.

Knowledge:

- **85%** of the nurses knew that hepatitis is **preventable through vaccination**. 15% of the nurses did not know how to prevent hepatitis at all.

- **92%** of the nurses had known that HBV **transmits through blood and body fluids**. Only 8% of them did not know that it gets transmitted through blood and body fluids.

- **95%** of the nurses knows that HBV do gets **transmitted through needle prick injury** and they should be careful while taking a blood sample or while inserting IV canola. Only 5% of the nurses did not know that HBV can spread through needle prick injury and they should be careful while performing any procedure.

- **73%** of the nurses had known that HBV gets transmitted through **unprotected sexual contact**, they knows that it spreads from one partner to another if the partner is a known case of hepatitis or is a chronic carrier of hepatitis . Still 27% of the nurses did not know that hepatitis spreads through unprotected sexual contact.

- **84%** of the nurses knew that HBV **do not spread through hand shaking and daily day to day activities**. 14% did not know that it do not spread through hand shake and day to day activities.

- **67%** of the nurses had known that hepatitis is **preventable through vaccination**. They know that if a person is vaccinated there is less chances of infection. 33% of the nurses

did not know that the disease is preventable through vaccination.

- **80%** of the nurses know that a **chronic infection of HBV leads to liver cirrhosis and hepatocellular carcinoma**. Only 20% did not know that chronicity of HBV leads to liver cirrhosis and liver cancer.

- **76%** of the nurses know that any patient undergoing any **dental or surgical procedure should be investigated for HBV infection**. They know that the infection can transmit to the medical staff or doctors operating on him and proper general and safe measures should be taken before and after surgery. And still 24 % did not know the significance of HBV investigation of patients undergoing surgical procedure.

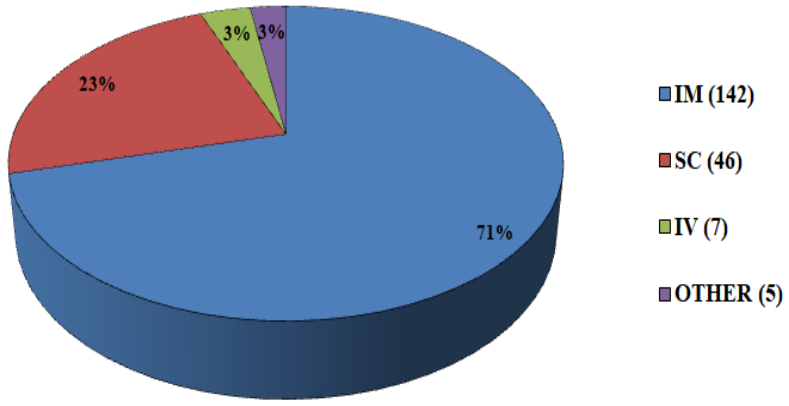
- **75%** of the nurses know that HBV infection do gets **transmitted from mother to child during pregnancy**. They know that if the mother is HBV infected or a chronic carrier then the baby would get infected from her. Only 25% of them did not know that HBV gets transmitted from mother to child during pregnancy.

- **91%** of the nurses know that if the blood from donor is infected from HBV, then it will **pass to the recipient during blood transfusion**. Only 9% of them did not know that infected blood can spread HBV infection to the recipient.

- **88%** of the nurses had known that **HBV do get transferred during organ transplantation**, they know that if the donor is HBV infected then the chances of the recipient to become HBV infected are exceptionally high. Only 12% of the nurses did not know that HBV transmits through organ transplantation.

- **78%** of the nurses know that **HBV transmits from dialysis unit to the patient** during dialysis. 22% of them did not know that it transmit during dialysis.

Figure 2: Knowledge about routes of administration of HBV Vaccine

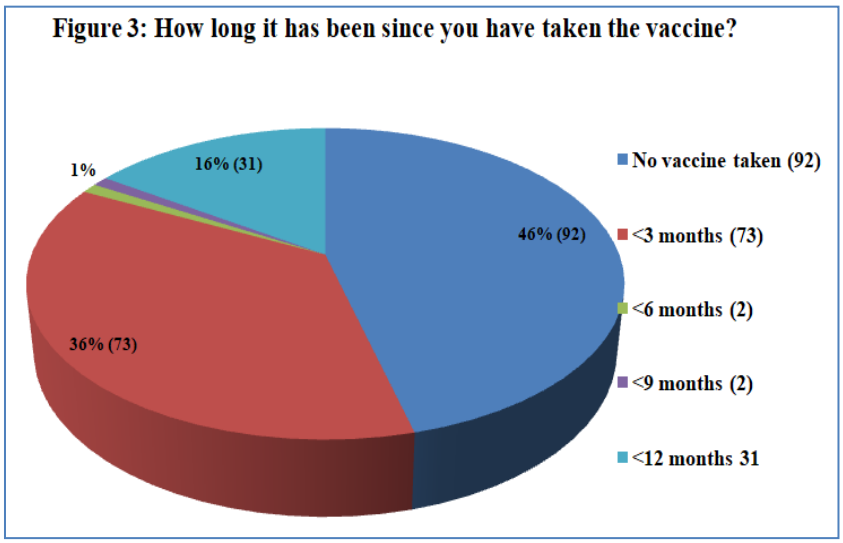


- **53%** of the nurses know the proper **immunization schedule of HBV vaccine**. But also 47% i.e. almost half of them did not the immunization schedule of the HBV vaccine.

- **51%** of them know that HBV infection is **curable if timely actions are taken**. But it seems 49% of them still think that HBV is still not curable.

Practices:

- **54%** of the nurses had **taken the HBV vaccine** and had been immunized. But still a large proportion i.e. 46% had not taken the HBV vaccine and had not immunized themselves.
- 51 % of the nurses thought that they should not monitor the **HBV antibody titre** frequently. Only 49% thinks that they should check the HBV titre frequently and though they agree that they should check frequently, they themselves do not know the significance of monitoring the titre.



Discussion

Hepatitis B is major health problems globally casting an enormous burden on the health-care system and a major source of patient's misery [12]. They are important causes of hepatocellular carcinoma and are likely to remain a serious health problem resulting in substantial morbidity and mortality for several decades to come [13]. These infections are also an important **occupational hazard for NURSING STAFF**. Generally, it is easy to assume that health workers by virtue of their proximity to the health facility should have adequate knowledge about diseases and other health conditions [14]. Therefore, this study has been carried out with a motive to assess the knowledge regarding the hepatitis infection and help in increasing the awareness level for the benefit of the entire medical fraternity.

A majority of the respondents demonstrated an **adequate level of knowledge** of hepatitis B infection and the routes of transmission of the infection and the fact that the infection can be transmitted as a nosocomial infection. This finding is however, at variance with another study done in Karachi (where the respondents demonstrated a very low knowledge of hepatitis B infection [15]. The results were similar but slightly better than another study done on Nigerian HCWs [16]. In the present study the nursing staff is well aware about the route of transmission of hepatitis B.

Hepatitis awareness is more important for nursing staff. 54% (108/200) of nursing staff were vaccinated against hepatitis B. The result of the present study is better than another study carried out in Germany where 41.2% of are only vaccinated [17]. It is also better than findings from Sofola *et al.* and Adebamowo [18] in their studies carried out

in Nigeria among health workers in which only 37.9% and 18.1% of their respondents respectively were reported to be fully vaccinated against hepatitis B infection. Some other studies have also shown similar results [19]. In a Knowledge, Attitude and Practice (KAP) study of medical groups with 369 participants in Tehran, Zanjan, and Ahwaz, Iran, 88.1% of studied groups were vaccinated and their knowledge of disease transmission was unsatisfactory [20]. In the present study nursing staff well oriented about the transmission of HBV infection from infectious blood and body fluids, near about 92% of nursing staff known about it.

Poor compliance of health workers to hepatitis B vaccination and **lack of knowledge** and **misconception** of existence of hepatitis B vaccine is an issue that deserves serious attention [21]. Our study shows the same result for poor compliance of nursing staff to hepatitis B vaccine.

When asked about the reason for not being vaccinated against hepatitis B infection most of the interns stated that they were too careful to acquire the infection. A similar lack of infection control practices and incidence of exposure to needle stick injury was suggested in other studies [22]. Satisfactory behavior towards methods of preventing the transmission and cross infection of the hepatitis B infection was found from the study .In the present study the nursing staff might have knowledge about HBV and its dreaded consequences but they are ignorant towards it. Living in a false belief that the disease cannot happen to them so they need not to be vaccinated.

HCW who were weak in knowledge were more likely to show negative attitudes and those who were knowledgeable were more likely to show positive attitudes. There was a positive **correlation between knowledge score and attitude**. A similar positive correlation for awareness level and attitude was found in a study done on HCW in Iran [23]. Nearly, 85.5% nursing staff are of the opinion hepatitis B infection is prevent by vaccination. [24] 92% believe that the transmission of hepatitis b virus infection during blood transfusion. This gap in knowledge of risk perception calls for concern among all nursing staff because of their high frequency of exposure to blood and other body fluids coupled with the high contagiousness of HBV[25].

Conclusions

- HBV infections are serious public health problems that can have consequences in terms of **psychological** and **occupational diseases**.
- HBV is common causes of occupational diseases, which can be **transmitted** from patients to health-care professionals and from the professionals to their patients and may also spread to members of their family due to intimate contact.
- Awareness is more important because they are **more prone to get infection**, due to contact with infected patient in the hospitals.
- The infection transmission at occupational level can be prevented by **following standard precautions**.

Discriminatory behavior and **attitude** is common towards patients with hepatitis infection. Attitudes are directly under the influence of knowledge levels and it's also affect on their daily practices, handling of infected patient in hospitals; therefore, it is necessary to **increase the level and quality of training and repeated training session among nursing staff to prevent discrimination and prejudice** towards the infection and the patients.

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