

Knowledge and practice regarding Hepatitis B infection among nursing students of Rohtak, Haryana

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ABSTRACT

Introduction: Hepatitis B is a potentially life-threatening infection caused by hepatitis B virus especially for the health care workers. As compared to the general population, the healthcare workers including the nursing students are at greater risk of contracting hepatitis B. **Aims and objectives:** To study knowledge and practice regarding hepatitis B infection among nursing students of Rohtak, Haryana. **Material and methods:** The study was carried out among 188 nursing students in an urban area of district Rohtak, Haryana from April-May 2016. **Results:** 53% of study participants were not vaccinated for hepatitis B, 16% partially vaccinated and 31% fully vaccinated. 63% of them knew that hepatitis B is a blood borne infection and only 6% knew it could be transmitted vertically from mother to unborn child. 63% considered themselves at risk and 94% of them knew it is preventable and safe and effective vaccine is available. **Conclusion:** The study highlights the poor vaccine compliance among nursing students. Knowledge and positive attitude can further improve vaccine compliance.

Keywords- Awareness, hepatitis B, nursing students, vaccine.

INTRODUCTION:

Hepatitis B is a dreaded infectious disease and one of the major global public health problems. It is endemic throughout the world, especially in tropical and developing countries and some areas of Europe ⁽¹⁾. The global disease burden is staggering with about 240 million people chronically infected with hepatitis B virus (HBV) ⁽²⁾. More than 686000 people die every year due to complications of hepatitis B, including cirrhosis and liver cancer ⁽³⁾. In the Indian subcontinent, an estimated 2–5% of the general population is chronically infected placing

India in an intermediate HBV endemicity zone. Children less than six years are most likely to be affected and 30–50% of infected children develop chronic infections, while 20–30% of chronically infected adults will develop cirrhosis and/or liver cancer. HBV causes 60-80% of primary liver cancer ⁽²⁾.

Realizing the magnitude of this problem, the World Health Assembly in May 2016, adopted the first “*Global Health Sector Strategy on Viral Hepatitis, 2016-2021*” which highlights the critical role of Universal Health Coverage, the targets are aligned with those of the Sustainable Development Goals and has a vision of eliminating viral hepatitis as a public health problem and this is encapsulated in the global targets of reducing new viral hepatitis infections by 90% and reducing deaths due to viral hepatitis by 65% by 2030 ⁽⁴⁾.

The healthcare workers are at increased risk of HBV infection than the general population. It has been found that the seroprevalence is two to four times higher among healthcare workers ⁽⁵⁾. India has a much higher prevalence of HBV carriers than the developed countries, making the Indian healthcare students prone to exposure for blood borne pathogens, with the attendant risk of infection with HIV, HBV or hepatitis C virus. Hepatitis B, among these, is the most important infectious occupational disease and much more dangerous compared to HIV infection due to the fact that its transmission rate after percutaneous exposure to blood is much higher (about 30%) than that of HIV (0.3%) ⁽⁶⁾. Although the Western institutions have taken passable steps to protect and fight against the disease, despite the minimal risk, the Indian institutions still remain ignorant with regards to this context ⁽⁷⁾.

Nursing staff are probably the most common health care staff exposed to needle prick injuries and contact with infectious fluids ⁽⁸⁾. However, awareness regarding hepatitis B virus has been found to be poor among healthcare workers, particularly the nursing students, both in developed and developing countries ⁽⁹⁾. Few Indian studies too have reported average awareness levels ⁽¹⁰⁻¹³⁾. A bigger chunk of nursing students still remain unvaccinated or partially vaccinated for hepatitis B ⁽¹⁰⁾.

In the practical scenario, exposure cannot be fully avoided; therefore, it must be ensured that the students know the standard post-exposure prophylaxis protocol in case any accidental exposure. Setia et al in their study reported that better awareness about hepatitis B can lead to better behavior for same ⁽¹³⁾. Assessing knowledge and awareness for hepatitis B among nursing students gives the required information for planning and implementing educational programmes relating to universal precautions and to minimize the acquired nosocomial infections among them and other health personnel. Thus considering the above mentioned facts, this study was planned with the aim to study knowledge and practice regarding hepatitis B infection among nursing students of district Rohtak, Haryana.

MATERIAL AND METHODS:

Study design- Cross-sectional study.

Study duration- April- May, 2016.

Study subjects- B.Sc. nursing students of a Nursing college of Haryana.

Study area- A nursing college located in an urban area of district Rohtak, Haryana, India.

Sample size- All B.Sc. nursing students of the college who consented to participate in the study were selected. Finally a sample size of 188 nursing students was obtained.

Data collection- A pre-tested self-structured questionnaire was used for data collection from the study subjects and consent was taken before initiating the interview. Data was entered in MS Excel sheet, analysed using SPSS v20.0 and appropriate statistical tests were applied.

RESULTS:

Out of the total of 188 nursing students who were selected for the purpose of the study, 31 (16.5%) were males and 157 (83.5%) were females. The mean age of the study participants was 21.59±3.2 years. Of these students, 74 (39.4%) were in first year, in 61 (32.4%) second year and 53 (28.2%) in third year of B.Sc. nursing.

63% of the study participants believed that hepatitis B is a blood borne infection but only 27.7% knew that it is more transmissible as compared to HIV (Table-1).

Table 1: Knowledge about Hepatitis B infection

	Yes (%)	No (%)
Hepatitis B infection is caused by virus	159 (84.6)	29 (15.4)
Hepatitis B can lead to liver cirrhosis	132 (70%)	56 (30%)
Does HBV cause cancer	139 (74%)	49 (26%)
Is hepatitis B much more transmissible than HIV	52 (27.7%)	136 (72.3%)
Is hepatitis B a blood borne infection	118 (63%)	70 (37%)

Around one-third of the subjects knew that hepatitis B is transmitted by infected blood and needles while only 6% knew that it can also be transmitted from an infected mother to her unborn child. (Table-2)

Table 2: Knowledge about routes of Hepatitis B transmission

Routes of transmission	Yes (%)	No (%)
Infected blood and blood products	118 (63%)	70 (37%)
Sexual route	124 (66%)	64 (34%)
Needles and syringes	130 (69%)	58 (31%)
Mother to child transmission (Vertical transmission)	11 (6%)	177 (94%)
Mosquitoes	13 (7%)	175 (93%)
Faeco-oral route	66 (35.1%)	122 (64.9%)
Air/droplet infection	34 (18.8%)	154 (81.2%)

96.8% of students knew that hepatitis B is a preventable disease and 63% of them considered themselves at risk of hepatitis B infection. (Table-3)

Table 3: Prevention of hepatitis B infection

	Yes (%)	No (%)
Do you consider yourself at risk of Hepatitis B infection	118 (63%)	72 (37%)
Is Hepatitis B a preventable disease	182 (96.8%)	6 (3.2%)
Is a safe and effective vaccine available for Hepatitis B prevention	177 (94%)	11 (5.9%)
Can Hepatitis B be prevented by proper disposal of sharps	156 (83%)	32 (17%)
Should the needle be recapped after use	43 (22.9%)	145 (77.1%)
Does use of gloves and other protective equipment minimize risk of Hepatitis B infection	171 (91%)	17 (9%)
Is post-exposure prophylaxis available for Hepatitis B	97 (51.6%)	91 (48.4%)

Only 31% of the students were fully vaccinated (received three doses of hepatitis B) against Hepatitis B while 53% were non-vaccinated. (Table-4)

Table 4: Hepatitis B vaccination status of study participants

Vaccination status	N (%)
Fully vaccinated	58 (31%)
Partially vaccinated	30 (16%)
Not vaccinated	100 (53%)

DISCUSSION:

In our study we found that majority of the students were aware of hepatitis B and believed it was caused by a virus. Raeng et al in their study among nursing students of Agartala also observed that the majority of the students (99.7%) believed HBV a causative agent of this disease ⁽¹¹⁾. Swarnalatha from Tamil Nadu reported that 79.9% were aware that hepatitis B infection may lead to liver cirrhosis and hepatocellular carcinoma which was a similar finding as compared to our study where 70% and 74%

students respectively were aware of this fact ⁽⁸⁾. Similar observations were also made by Hossein in his study from Ethiopia ⁽¹⁵⁾. In our study 63% of students were aware of the fact that hepatitis B is a blood borne infection. Swarnalatha and Hossein reported these figures as 81% and 71% respectively which indicates that their study subjects were better informed as compared to ours.

Regarding the other routes of transmission of HBV, 66% and 69% of our study participants believed it spreads by sexual contact and needles and syringes respectively. Setia et al in their study from Punjab among healthcare workers reported this percentage to be around 76% which is comparable to our study ⁽¹⁴⁾. However, they also observed that medical interns were better informed as compared to the nursing interns. Swarnalatha, Raeng et al, Khalid et al too have made similar observations ^(8,11,15). Raeng et al and Khalid et al have reported that 86% and 64% of nursing students respectively were aware that hepatitis B could be vertically transmitted. But it was surprising to note that only 6% of our study participants had knowledge in this regard which is an alarmingly low figure in comparison to the above mentioned studies. We recommend the implementation of concrete measures to increase the knowledge of nursing students about this deadly disease.

In our study 96% of students knew that hepatitis B was preventable by the use of a safe and effective vaccine which is a satisfactory figure in comparison to other studies ^(2,11, 13,15,16). 77% and 91% of our study participants respectively were aware of the importance of using gloves and avoiding recapping of needles for the prevention of hepatitis B. Raeng et al also made a similar observation in this regard ⁽¹¹⁾.

Our study reported that only 31% of the study subjects were fully vaccinated against hepatitis B which is an unsatisfactory figure as far as the healthcare workers are concerned. Setia et al in their study observed better vaccine compliance among medical students in comparison to the nursing students ⁽¹³⁾. Studies by Singh et al, Khan et al, and Chaudhary et al have reported a better level of awareness among medical students with respect to the nursing students ^(10,12,17). Thus we recommend intensive teaching and training programme for nursing students regarding hepatitis B in consideration of its greater magnitude and severity of complications.

CONCLUSION:

Our study highlights the need of concrete efforts with regards to educating the nursing students about infectious diseases especially hepatitis B. Poor hepatitis B vaccine compliance among study subjects was also observed. Nursing students ought to be made to comprehend the prevention of hepatitis B and in cases of exposure, the extreme importance of immediately reporting the incident to the concerned authorities, undergoing prompt investigations and seeking appropriate treatment and suitable follow-up. Knowledge regarding vaccination and motivation to complete the course may further help to minimize risk and an attempt should be made to identify factors which persuade the awareness level and vaccination status of students.

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