

**A STUDY TO ASSESS KNOWLEDGE AND AWARENESS ABOUT THE HEPATITIS B AND C AMONG NURSING COLLEGE STUDENTS OF CENTRAL INDIA**Ramniwas Mahore<sup>1</sup>, Surendra Kumar Mahore<sup>2</sup>, Neeta Mahore<sup>3</sup>, Rupesh Awasthi<sup>4</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: INTRODUCTION AND BACKGROUND:** The lives of millions of adolescents worldwide are at risk because they do not have the information; skills, health services and support which they need to go through sexual development during adolescence. The epidemic of Hepatitis B/HCV is now progressing at a rapid pace among young people. **AIMS& OBJECTIVE:** To assess knowledge of nursing students towards Hepatitis B/HCV Awareness, Prevention & Control. To assess knowledge increase after educational intervention by means of lectures and discussions among nursing students. **MATERIAL& METHOD:** An educational interventional study was conducted in Kushabhau Thakre Nursing College, Kolar Road, Bhopal. Study population included all Nursing students. Sample size was 200 students. Inclusion Criteria included all Nursing students present at the time of pre intervention interview and who gave informed consent. The data was analyzed using appropriate statistical software (MS excel and SPSS version 20). Mc Nemar test was applied for statistical significance of knowledge improvement by intervention. **RESULT:** Most of the Nursing students (95%) were correctly known that Hepatitis B/HCV is a viral disease and an effective vaccine against Hepatitis B is available in the market but they are not able to differentiate between Hepatitis B and C, in fact they have a mis-conception that both are the same entity. After intervention 87% of the students were aware about preventive measures against Hepatitis B/HCV. Health care providers (55%), Teaching (25) and Mass media (22%) were main source of knowledge for them. More than two thirds of students had positive attitude towards Hepatitis B/HCV infected patients. **CONCLUSION:** The study revealed that although a significant proportion of students were aware of Hepatitis B/HCV, their knowledge on prevention modalities was low as majority of them are unable to differentiate Hepatitis B from Hepatitis C. Students also harbored misconceptions on the modes of Hepatitis B/HCV transmission. Television, newspapers and internet were quoted as the most common source of information.

**KEYWORDS:** Hepatitis B, Hepatitis C Virus, Nursing students, Knowledge, Awareness, Prevention.

**INTRODUCTION:** Hepatitis has emerged as a global public health concern. The World Health Organization (WHO) and Centre for Disease Control (CDC) estimate that, currently over 500 million people are living with chronic viral hepatitis in the world.<sup>[1,2]</sup> Of these, nearly 1 million die every year of the consequences of hepatitis, like cirrhosis or liver cancer.<sup>[1,2]</sup> More exactly, estimated 57% of liver cirrhosis and 78% of primary liver cancer cases are believed to result from hepatitis B virus (HBV) or hepatitis C virus (HCV) infections.<sup>[1,2]</sup> According to WHO, in India the prevalence rates are 2% to 7% for HBV and 0.5% to 1.5% for HCV.<sup>[3]</sup> However, these figures likely represent only a fraction of the true burden. Despite hepatitis affecting a considerable portion of the Indian population, it still does

## ORIGINAL ARTICLE

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not receive the attention it deserves; India still does not have a tangible national policy for addressing the problem. Moreover, hepatitis is often a 'silent' disease; while most patients recover from acute infections, many of them progress to the chronic stage and serious life-threatening complications. Due to often low awareness, most of the patients are diagnosed at a stage where the disease is irreversible.<sup>[4]</sup>

India has a population of more than 1000 million of which about 30 million people are carriers of HBV infection. HBV is responsible for about 68% of cirrhosis and 80% of HCC in India. A decision-analytical model estimates that in India, vaccination would save 25 lives per 100,000 population per year.<sup>[5]</sup> It has been estimated that 14.4% and 1.4% of hospital workers are infected with HBV and hepatitis C virus (HCV), respectively.<sup>[6]</sup> Physicians, dentists, nurses, laboratory staff, and chair side assistants are at high-risk of acquiring infection via the contact with blood (and other body fluids) in the course of their work.<sup>[7]</sup> Among the health care personals, HBV, and HCV is transmitted by the skin prick with an infected, contaminated needles and syringes or through accidental inoculation of minute quantities of blood during the surgical and dental procedures. It has been seen in the literature that the highest prevalence of HBV exists in dentists.<sup>[8]</sup> HBV can be prevented by strict adherence to standard microbiological practices and techniques, and routine use of appropriate barrier precautions to prevent skin and mucous membrane exposure when handling blood and other body fluids of all patients in health-care settings and pre-exposure vaccines. Even after many publications about programs and strategies to prevent transmission, HBV, and HCV infections still remains a major public health issue for mankind.<sup>[9]</sup>

It has been recommended that prevention is a safeguard against epidemic of viral hepatitis. A Safe and effective vaccine for Hepatitis B is available in market since last 3 decades although it is not possible with Hepatitis C Virus infection. By knowing facts, having proper awareness and attitudes the menace of this disease can be prevented to a great extent. As health-care workers (HCWs) remain at a high-risk of transmission by skin prick with infected, contaminated needles and syringes or through accidental inoculation of minute quantities of blood during the surgical and dental procedures it is very important for them to follow proper measures of infection control and prevention.

Patients with hepatitis B and C may sometimes experience discrimination and stigmatization in the work place, by family members and by members of their communities. In addition, they may face discrimination from health-care professionals.<sup>[10, 11]</sup> These discriminatory practices may be a result of lack of knowledge, which may lead to negative attitudes toward these kinds of diseases, which could interfere with their willingness to treat these patients because of a fear of contracting the infection. Knowledge and attitudes of the clinician play a key role in prevention of spread of infection. Therefore, the objectives of the present study were to assess knowledge, attitudes and practices of HCWs including i. e. the Nursing Students. Another important objective of the study was to correlate the awareness regarding hepatitis B and C infection to the clinical attitudes and behavior regarding this disease in order to estimate how attitude and behavior can be influenced by education and awareness.

**MATERIALS & METHODS:** An educational interventional study was conducted in urban area of Bhopal district. Study site included Kushabhau Thakre Nursing College, Kolar Road, Bhopal. Study site was selected using simple random sampling method. Study population included all Nursing

## ORIGINAL ARTICLE

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College Students. Verbal informed consent was obtained prior to interview. Sample size was 200 Nursing students (both boys and girls). Study Duration was 3 months duration. Inclusion Criteria included all Nursing students present at the time of pre intervention interview and who gave informed consent. Exclusion Criteria included all the students absent at the time of pre interventional interview and who did not give informed consent. A semi structured questionnaire was used for interview both pre interventional and post interventional. The questionnaire was designed to know their knowledge and awareness about various aspects of Hepatitis B and Hepatitis C like etiology, mode of transmission, diagnosis, prevention, treatment and sources of information. Interventions were take place by means of series of 3 lectures using audio visual aids and discussions. Intervention was take place for boys and girls separately. Ethical permission was obtained both from institution and principal of college. The data was analyzed using appropriate statistical software (MS excel and SPSS version 20). Mc Nemar test was applied for statistical significance of knowledge improvement by intervention. P value less than 0.05 would consider statistically significant.

**RESULTS:** In this study 200 students (120 Girls and 80 boys) were included. 60% girls and 40% boys were in between 18 to 25 years of age. In this study regarding general knowledge about Hepatitis B and Hepatitis C, Knowledge improved significantly after intervention. In case of Knowledge and awareness of Hepatitis B and Hepatitis C regarding etiology and mode of transmission. 95% knew that it is a viral disease, which increases to 99% after intervention. 75% knew most commonly affected age group and 66.5% had knowledge that Hepatitis B and Hepatitis C is a infection which increases to 90% and 86.5% respectively (post interventional). Knowledge of False belief of communicability was improved maximally as a result of intervention. (Table-1). 56.5% students correctly identified blood, sexual fluids, needle prick and used razor blades as a route of transmission which increased to 87% after intervention. (Table 2).

In this study Knowledge and awareness of students were less in term of diagnosis, prevention and treatment which increases as effort of intervention. Physical appearances and behavior of persons was correctly discarded by 26% students as a mean of identifying an infected person which improved to 64.5%. 51% were able to understand their contribution as a citizen and their social responsibilities which increased up to 66%. Attitude of students towards infected patients (80.5%) was good pre interventional which changes to 94.5%. Health care professional followed by teaching and mass media (Television, newspapers and internet) were main source of knowledge for them.

**DISCUSSION:** In the Present study majority of the respondents demonstrated an adequate level of knowledge about hepatitis B and C infection and the routes of transmission of the infection and the fact that the infection can be transmitted by used razor blades (Least likely in case of HIV transmission). This finding is however, at variance with another study done in Karachi (Pakistan) where the respondents demonstrated a very low knowledge of hepatitis B infection.<sup>[12]</sup> However these results are similar to a study conducted on Adequate awareness level regarding ways of prevention of hepatitis B infection, done in Nigeria.<sup>[13]</sup>

Hepatitis B vaccine is 95% effective in preventing HBV infection and its chronic consequences. In the present study 61% of the respondents were completely immunized against Hepatitis-B (Taken 3 doses of Hepatitis vaccine). The result of the present study is better than another study carried out in Germany where 41.2% of vaccinated participants received the three

## ORIGINAL ARTICLE

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doses.<sup>[14]</sup> It is also better than findings from Sofola et al.<sup>[15]</sup> and Adebamowo<sup>[16]</sup> 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. In 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 but their knowledge of disease transmission was unsatisfactory as compared to our study.<sup>[17]</sup>

In present study nearly 35% of the respondents were highly confused in between Hepatitis B and HCV and considered themselves protected from HCV by Hepatitis B Vaccination. These results are similar to other studies like in one where nearly, 38% (38/100) of dental, 31% (31/100) medical and 49.1% (27/55) of nursing students claim to be vaccinated against hepatitis C infection whereas no viable vaccine against HCV exists at present.<sup>[18]</sup> Lack of knowledge and misconception of existence of hepatitis C vaccine is an issue that deserves serious attention.<sup>[19,20]</sup>

When asked about the reason for not being vaccinated against hepatitis B infection most of the respondents 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.<sup>[21,22,23]</sup> Satisfactory behavior towards methods of preventing the transmission and cross infection of the hepatitis B and C infection was found from the study. In a study conducted by S. Setia et al.<sup>[24]</sup> in Punjab, it was found that HCWs who were weak in knowledge were more likely to show negative attitudes and those who were knowledgeable were more likely to show positive attitudes (P value <0.001 showing significance). 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.<sup>[25]</sup> The results of present study were also found similar to these studies in regard to knowledge and attitude.

Nearly, 24.7% respondents are of the opinion that they are not at risk of contacting the hepatitis B/C infection due to their profession. 36.3% respondents believe that they cannot acquire the hepatitis B/C infection from their patients.<sup>[24]</sup> This similar gap in knowledge of risk perception were also found in present study which calls for concern among all health workers because of their high frequency of exposure to blood and other body fluids coupled with the high contagiousness of HBV and HCV.

**CONCLUSION:** HBV and HCV infections are serious public health problems that can have consequences in terms of psychological and occupational diseases. They are 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. Fortunately, the infection transmission at occupational level can be prevented by following standard precautions.

The study revealed that although a significant proportion of Nursing students were aware of Hepatitis B and Hepatitis C, their knowledge on diagnosis prevention and treatment modalities was low their knowledge on prevention modalities was low as majority of them are unable to differentiate Hepatitis B from Hepatitis C. Students also harbored misconceptions on the modes of Hepatitis B and Hepatitis C transmission. Many students had misbelieved about communicability specially that sharing razor blades is not a hazard. Regarding access to information, the survey revealed that most students obtained information on Hepatitis B and Hepatitis C from the Health care professional

## ORIGINAL ARTICLE

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followed by teaching and mass media (Television, newspapers and internet). Interpersonal communication (from parents and friends) for obtaining information was least common source of information. Attitudes are directly under the influence of knowledge levels; therefore, it is necessary to increase the level and quality of training among HCWs to prevent discrimination and prejudice towards the infection and the patients.

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## ORIGINAL ARTICLE

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	Pre interventional (N=200)			Post interventional (N=200)			p value
	Yes	No	Do not Know	Yes	No	Do not Know	
Belief about Communicability							
Casual contact hand shake	25 (12.5)	122 (61)	53 (26.5)	2 (1)	198 (99)	0	<0.01*
Eating from same stuff	28 (14)	113 (56.5)	59 (29.5)	1 (0.5)	199 (99.5)	0	<0.01*
Mosquito/insect bite	32 (16)	130 (65)	38 (19)	6 (3)	194 (97)	0	<0.01*
Sharing utensils	32 (16)	144 (72)	24 (12)	4 (2)	196 (98)	0	<0.01*
Using Public Toilets	8 (4)	144 (72)	48 (24)	2 (1)	198 (99)	0	<0.01*

**Table 1: Showing Knowledge and Awareness of Students about Hepatitis B and C (N=200)**

\*p value less than 0. 05 is statistically significant.

Mode of Prevention	Total (200 Students) %	Significance (P<0.05)
Vaccination (For Hep-B)	100	<0.01
Proper disposal of sharps. Needles and blood	100	-
Avoid Needles/Sharp injury/Used Razors	84.3	0.18
Avoid casual sex or/and multiple sex partners	89	0.02

Table 2: Showing Awareness (Post interventional) regarding ways of preventing Hepatitis B and HCV infection

Figure 1: Showing mode of receiving knowledge about Hepatitis B and HCV.

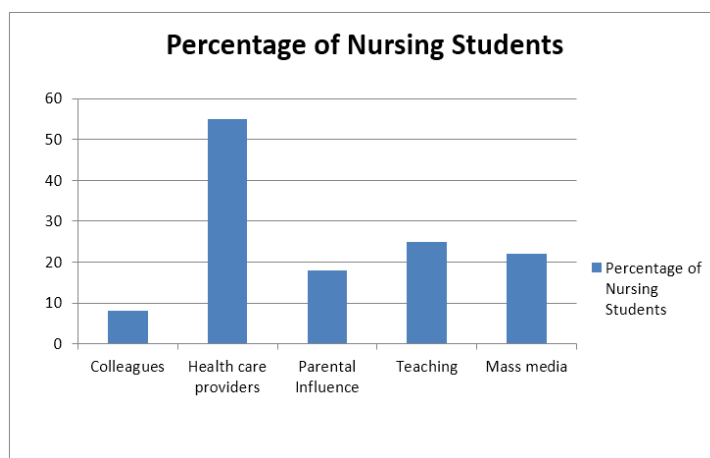


Fig. 1

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