

Original Research Article

Public awareness, attitude and knowledge of hepatitis B infection in North India

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ABSTRACT

Background: Information on attitudes towards hepatitis B vaccination, its coverage, and efficacy in general public is a major challenge for every country and should form the basis of health care policies. Therefore, it is important to assess the attitude and the coverage of the vaccination in public in India for further policy implementation as well as for their safety. The study objectives were to assess the knowledge of Hepatitis B and C in persons coming from community to attend a camp at tertiary care center, Lucknow and to correlate the level of awareness to the attitude they behold toward the disease.

Methods: A comparative study of two years (2015 and 2017) using multiple choice structured questionnaires among 300 attendants (150 each year) coming to Gastro medicine outpatient department. The attendants assessed knowledge and awareness about hepatitis B and C infection, transmission, screening and vaccination was the tool of data collection.

Results: Although most of the attendants were aware of the existence of hepatitis B and C infection, the level of awareness regarding the modes of transmission and vaccination was found to be dissatisfactory in 2015 attendants. A direct positive correlation as found between education level and awareness, which reveals that attendants with better knowledge and information had better attitudes toward the infection and prevention of hepatitis transmission.

Conclusions: There is a still need to increase the level and quality of health education, vaccine accessibility and availability among people to prevent the spread of hepatitis B virus.

Keywords: HBV, Knowledge, Prevalence, Vaccination

INTRODUCTION

Hepatitis B and hepatitis C are major health problems globally casting an enormous burden on the health care system and a major source of patient's misery. Persistence of chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infection causes serious conditions such as hepatic decomposition, cirrhosis, and hepatocellular carcinoma and are likely to remain a serious health problem resulting in substantial morbidity

and mortality for several decades to come.¹ As per WHO 2016 report, chronic hepatitis B infection occurs in about 350 million people with more than 6 lakhs deaths each year and about 3% of the world population has been infected with HCV worldwide with more than 170 million chronic carriers and 3.5 lakhs deaths every year.² The prevalence of HBV infection is 5–10% in Southeast Asia and 1% in North Europe and America. According to the World Health Organization, India falls in the intermediate category where approximately 4% and 1%

of the general population has a moderate prevalence rate of HBV and HCV respectively.^{3,4} These infections are also an important occupational hazard for Health care workers. 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. Many people especially coming from outskirts area and rural areas of Uttar Pradesh, India are unaware about these infections, their route of transmission, treatment and vaccine development, as a result of which they were devoid of the basic prevention strategies to save themselves and their family members from this medical malady of Hepatitis. Therefore, this study had 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 general population coming to tertiary care centre, Lucknow. It was a survey based study and persons were interviewed with structured questionnaire. The aim of this comparative study was to assess the extent of knowledge, awareness and attitude towards hepatitis B and C infection among the general population and correlate the level of awareness to the attitude they behold toward the disease.

METHODS

Ethics

Three hundred participants randomly and voluntarily participated in the study, and the subjects were fully informed about the design and purpose of the study. Confidentiality of identity was insured to all the persons and a verbal consent was obtained prior to filling up of the questionnaire. Institutional ethical committee waived of eligibility of written informed consent.

Study design

The study was conducted by the Department of Microbiology and Gastro medicine, RMLIMS, Lucknow in 2015 and 2017. We have organised a screening and awareness camp for general public on 28th July in 2015 and 2017, on the occasion of World Hepatitis day. Multiple choice questionnaires were designed to assess the socioeconomic status, knowledge and perception about hepatitis B and C infections. The interview started by asking questions addressing general information about HBV and HCV, including its mode of transmission and symptoms of acute infection, followed by monitoring of HBV carriers and the possible sequelae of infection. In addition, few questions were incorporated to explore the health status of the respondents including their drinking habits and history of prior liver function testing as well as their practices towards HBV screening and vaccination. The final section of the questionnaire addressed the respondents their HBV testing, the results of the blood test, and whether they had received HBV immunisation.

Inclusion criteria

Inclusion criteria were participant was not a patient; participant was never done testing for hepatitis.

Exclusion criteria

Exclusion criteria were participant is a patient coming to hospital for treatment; past history of hepatitis or related disease; hepatitis B or hepatitis C positive persons.

Statistics

Results obtained were entered into SPSS version 16.0 software for statistical analysis. These results were statistically analysed using the Chi square test. The level of significance was set at $p < 0.05$.

RESULTS

A total of 300 (150 each year) attendants completed the structured questionnaire in 2015 and 2017; of these, 62% and 66.67% were males and 38% and 33.3% were females respectively (Figure 1). The Predominant age group (54% and 60%) was 21 to 30 years in 2015 and 2017 (Figure 2). In the present study, difference was found insignificant in terms of sex distribution ($p = 0.3991$) and age in years of male and female patients ($p > 0.05$). Overall, 50% of the respondents in 2015 and 80.7% in 2017 attained an education level of college or above. Statistical association was observed ($p < 0.05$) on comparing the educational degree of attendants in 2015 and 2017 (Figure 3). In 2017, the attendants who were graduate and professional had more information and perception about hepatitis infection. According to present study majority of attendants coming from outskirts and rural areas belong to medium and low socioeconomic class (Figure 4). Only 6.7% of participants in year 2015 and 12% in year 2017 belonged to high socio-economic class. However, such observation at socioeconomic status did not reveal any significant difference in the awareness of hepatitis infection.

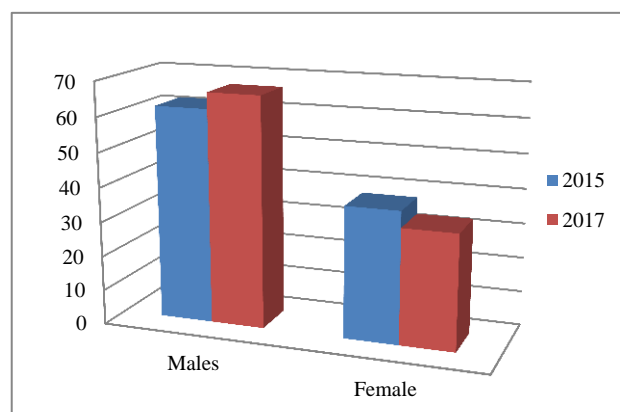


Figure 1: Sex wise distribution of study participants.

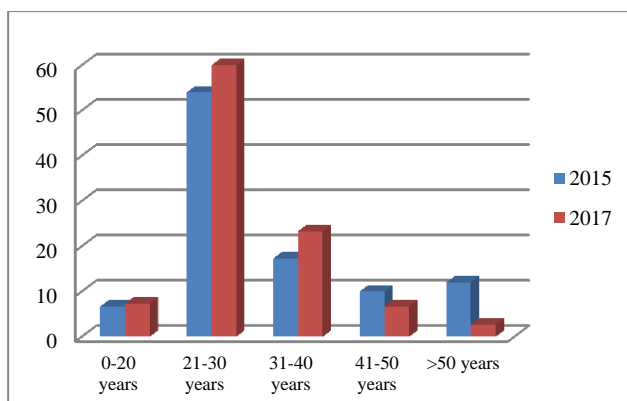


Figure 2: Age wise distribution of study participants.

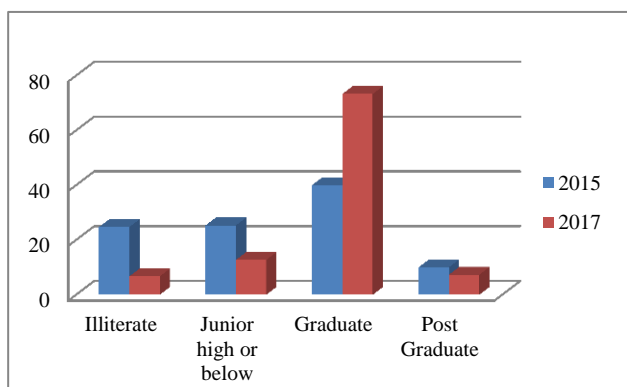


Figure 3: Education level distribution of study participants.

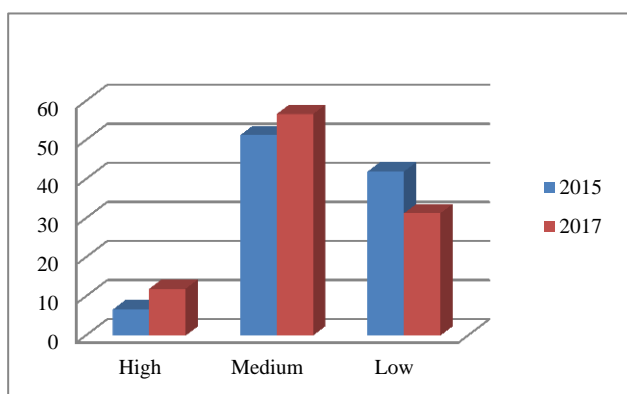


Figure 4: Economic class distribution of study participants.

Assessing hepatitis awareness and knowledge

Regarding knowledge, only 75 (50%) attendants in 2015 and 121 (80.6%) attendants in 2017 subjects had heard of hepatitis before this comparative study ($p < 0.05$).

In 2015 among 75 attendants who heard of hepatitis only 65 had correct knowledge about organ affected in hepatitis and its infectious nature. However in 2017, 114

respondents knew that liver is most commonly affected in hepatitis.

In this comparative study, 51 (68%) among 75 attendants in 2015 knew that hepatitis is caused by virus while 24 respondents stated that it is caused by bacteria. However, in 2017, 109 (90%) respondents had right information that virus causes hepatitis ($p < 0.001$).

Knowledge regarding hepatitis prevalence and transmission

Knowledge was assessed by questions focusing on sign and symptoms, transmission, treatment and prevention (Table 1). About half the attendants (57%) were aware that HBV commonly causes chronic viral hepatitis in 2017, which was significantly higher than 2015 study population (36%). Hepatitis C was mentioned by 9% and 21% of attendants in 2015 and 2017 respectively. However, 48% attendant in 2015 and 23% in 2017 expressed no ideas about it. In 2015 the study showed that 80% had no idea about the prevalence of HBV carrier rates in India, while 8% attendants thought the prevalence to be above 10% or 5-7%. Prevalence rates of 2-4%, was cited by 4% of respondents, respectively. Among attendants in present study, 63% of study population in 2017 were unaware of exact prevalence of hepatitis B carrier rate.

Table 1: Awareness regarding hepatitis infection in study population.

| Parameters | 2015 (n=150) | 2017 (n=150) | P value |
|--|--------------|--------------|---------|
| 1. Ever heard of hepatitis | | | |
| Yes | 75 | 121 | <0.05 |
| No | 75 | 29 | |
| 2. Organ affected in hepatitis | | | |
| Liver | 65 | 114 | 0.07 |
| Lung | 5 | 3 | |
| Intestine | 5 | 4 | |
| 3. Hepatitis is caused by | | | |
| Virus | 51 | 109 | <0.001 |
| Bacteria | 24 | 10 | |
| Others | 0 | 2 | |
| 4. Hepatitis is prevented by | | | |
| Vaccine | 57 | 106 | 0.04 |
| Medications | 16 | 12 | |
| Blood transfusion | 02 | 03 | |
| 4. Will you test or get yourself investigated for hepatitis infection | | | |
| Yes | 63 | 121 | <0.007 |
| No | 12 | 00 | |
| 5. Will you get vaccination for hepatitis | | | |
| Yes | 62 | 119 | <0.005 |
| No | 13 | 02 | |

Table 2: Assessing information about transmission of hepatitis in study population.

| Parameters | 2015 | 2017 | P value |
|---|------|------|---------|
| 1. Hepatitis is infectious? | | | |
| Yes | 65 | 114 | >0.05 |
| No | 10 | 7 | |
| 2. Can a non infected individual eat food together with hepatitis C infected in the same plate | | | |
| Yes | 30 | 70 | =0.34 |
| No | 35 | 75 | |
| Don't Know | 10 | 05 | |
| 3. Should a hepatitis B carrier mother avoid breast feeding her baby? | | | |
| Yes | 13 | 32 | >0.14 |
| No | 14 | 26 | |
| Don't know | 48 | 63 | |
| 4. Transmission of hepatitis B | | | |
| Bad Hygiene | 48 | 02 | <0.01 |
| Mosquito bite | 06 | 05 | |
| Unprotected sex | 05 | 46 | |
| Blood transfusion | 10 | 43 | |
| Mother to child transmission | 06 | 25 | |
| | | | |

Regarding knowledge about the mode of transmission, majority of attendants in 2015 (64%) had belief that the virus could be contracted by bad hygiene while 13%, 8%, 8% and 6.7% cited blood transfusion, mother to child transmission, mosquito bite and unprotected sexual contact respectively (Table 2). In 2017, among the total attendants 38%, 35% and 20% had information about unprotected sexual contact blood transfusion and mother to child transmission respectively. This comparative study showed that knowledge regarding transmission of hepatitis significantly improved in two years.

There was no significant difference in this study regarding breast feeding practice of hepatitis affected mother. Over half of all attendants in this comparative study had a misconception that a HBV carrier mother should avoid breastfeeding.

Awareness about symptoms of acute hepatitis B and monitoring of carriers

There was a significant difference in the knowledge and information related to prodromal symptoms of hepatitis infection. Majority of attendants in 2015 believed headache (21%), abdominal pain (20%) joint ache (18.7%) and fever (17%) as important symptoms. However in 2017, among 121 attendants, 39 (32%), 37 (30.5%) and 32(26.5%) attendants cited that combined group of symptoms, abdominal pain and weight loss as main features. When asked further as to whether normal liver function test results could exclude a person from being a HBV carrier, 19% of respondents gave an

affirmative answer, 46% thought not, and 35% had no idea in 2015 study. However, study population in 2017 had higher percentage of affirmative answer (41%). Among total attendants in 2015, 26% and 35% attendants believed that periodic liver function test monitoring and abdominal ultrasonographic examination respectively was necessary. Attendants involved in 2017, were more affirmative with periodic liver function test monitoring (47%) and abdominal ultrasonographic examination (49%) respectively. However, this finding was not statistically significant.

Knowledge about sequelae of chronic hepatitis B virus infection and vaccine

Regarding knowledge about complications and sequelae of chronic hepatitis B virus infection, there was a significant difference in 2015 and 2017 study population group knowledge (Table 3). Among the total attendants 50% in 2015 and more than 90% in 2017 believed that liver cirrhosis, liver cancer and liver failure is important sequelae to chronic hepatitis infection.

Table 3: Assessing knowledge of clinical manifestations in hepatitis infection.

| Parameters | 2015 | 2017 | P value |
|---|------|------|---------|
| 1. Symptoms of hepatitis B infection | | | |
| Weight loss | 09 | 32 | <0.05 |
| Fever | 13 | 06 | |
| Headache | 16 | 02 | |
| Pain in abdomen | 15 | 37 | |
| Joint ache | 14 | 02 | |
| Diarrhoea | 03 | 03 | |
| Combined symptoms | 05 | 39 | |
| | | | |
| 2. Commonest cause of viral hepatitis in India? | | | |
| Hepatitis A | 04 | 02 | <0.001 |
| Hepatitis B | 27 | 69 | |
| Hepatitis C | 07 | 26 | |
| Hepatitis D | 00 | 00 | |
| Hepatitis E | 01 | 01 | |
| Don't know | 36 | 23 | |
| 3. Which of the following conditions may arise from chronic hepatitis B infection? | | | |
| Liver cirrhosis | 07 | 19 | <0.01 |
| Liver cancer | 08 | 24 | |
| Liver failure | 19 | 59 | |
| All of the above | 04 | 17 | |
| Don't know | 37 | 02 | |
| | | | |

About more than half of respondents were not able to recall having been tested for HBV infection in the past. However, about half of the attendants knew about vaccine and were ready for investigation and vaccination. This finding was statistically significant among the comparative study of 2015 and 2017.

DISCUSSION

HBV infection remains a serious threat to the general public in our country although vaccine is available against it. This comparative study was a population-based questionnaire survey exploring the knowledge, awareness, and practices of the public, in regard to HBV and HCV infection in India. As no community based comparative study had been done in Uttar Pradesh about hepatitis knowledge and vaccination status among attendants coming from community, therefore, the present study was planned. The results revealed a negative association of low educational level and good HBV and HCV knowledge.

The vaccination for HBV in the past and the willingness for further investigations, screening and vaccination on HBV were independently associated with good knowledge.

A total of 150 participants in each year were included in our study in 2015 and 2017. Majority of our participants were males 62% in 2015 and 66% in 2017. This finding was concordant with the study of Misra et al in 2009.⁵ More than half of our participants were in the age group of 21-30 years, graduate and belonged to middle class.

Only 50% of our study group in 2015 had heard of hepatitis B (before the disease was described to them). However, in 2017 80% of attendant had affirmative response on hepatitis. The 2015 data in present study about hepatitis B knowledge is in contrast to the study, reported by Misra et al in coastal Eastern India and by Taylor et al among Cambodian Americans, in which 78% had heard about the disease earlier.^{5,6} Our observations of 2017 were in concordance with the above two studies which stated that those who were highly educated were more aware of HBV infection, its transmission and prevention.

The participants in 2017 had a relatively good level of HBV and HCV knowledge. Although in 2015 most of respondents incorrectly identified some of the main transmission risks, however in 2017 more than half of total attendants gave affirmative response to most widely known risk factors like unprotected sexual behaviour, mother to child transmission (MTCT) as well as blood transfusion. Knowledge on sexual and MTCT was disturbingly low in 2015 study population.

The 2017 data was in concordance with a study in France where about 70% of the French respondents reported that hepatitis B could be transmitted sexually. Similar findings were observed in other European studies: 63% and 78%, respectively, in Germany and the Netherlands.⁷ This significant difference in knowledge about hepatitis is attributed to increase exposure about the disease on mass media, internet, health education programme and workshops conducted for young generation by government.

Our study revealed that a majority of the general population in India have not yet been protected by hepatitis B vaccination. The main reason was unawareness, ignorance and inaccessibility of these vaccines in rural or peripheral urban areas. These findings were similar to studies in other parts of Asia.^{8,9} The positive correlations between knowledge and practice in this study reaffirm the relationship between knowledge and practice with infection control measures. It is concluded that adequate knowledge can lead to good practices. The findings are in line with the results presented by the study in Hong Kong, Europe, India and Malaysia.

CONCLUSION

The present study concludes that there was poor knowledge and awareness among the attendants who visited tertiary health care institute, Lucknow in 2015 on comparing with the attendants of 2017 about the hazards of hepatitis B, its mode of transmission and prevention. Moreover, majority of the attendants in both 2015 and 2017, were not fully vaccinated against hepatitis B and were not aware about the availability of post exposure prophylaxis. Medical and Health Science Colleges should have more efficient health programme departments that must take responsibility for HBV education, transmission, testing, vaccination accessibility and availability.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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