

Original Research Article

Study of knowledge, attitude, and practice regarding hepatitis B infection in first-degree relatives of patients suffering with hepatitis B infection

Ajay Kumar Jain^{1*}, Amit D. Joshi¹, Deepika Jain², Shohini Sircar¹

¹Department of Gastroenterology, ²Department of Biostatistics, Choithram Hospital & Research Centre, Indore, Madhya Pradesh, India

Received: 24 February 2023

Accepted: 16 March 2023

*Correspondence:

Dr. Ajay Kumar Jain,

E-mail: ajayvjain@yahoo.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Hepatitis B virus (HBV) infection is a significant public health problem in third-world countries, including India. The risk of infection among close family members of patients infected with chronic HBV infection is four to six times higher than in the general population. However, literature is scarce regarding the Knowledge, attitude, and practice toward HBV infection among the first-degree relatives of patients suffering from chronic hepatitis B. Hence, this study aimed to assess the knowledge, attitude, and practice regarding hepatitis B virus infection among first-degree relatives of hepatitis B patients.

Methods: A cross-sectional, observational study was conducted amongst the 354 first-degree relatives of HBsAg-positive patients. A validated questionnaire consisted of twenty questions of knowledge, seven questions of attitude, and ten practice questions were employed to gather information.

Results: The mean knowledge, attitude, and practice (KAP) were significantly better amongst participants aged 55-65 years and those who were educated. There was a positive correlation between knowledge and attitude ($r=0.58$, p value <0.05) and knowledge and practice ($r=0.64$, p value <0.05).

Conclusions: There is insufficient knowledge regarding hepatitis B, its common symptoms, modes of transmission, and preventive tools among close relatives of patients suffering from chronic hepatitis B.

Keywords: Attitude, Hepatitis B, India, Knowledge, Practice, Public Health, Hepatitis B

INTRODUCTION

Hepatitis B virus (HBV) infection is a significant public health problem in India. Despite implementing best infection control practices, including effective immunization against HBV, it remains a well-recognized major health problem, and both vertical and horizontal transmissions are equally responsible for it. India still falls in the intermediate endemic zone for HBV infection.¹ Prevention is the only strategy to reduce the incidence and prevalence of infection.² Adequate knowledge,

appropriate attitude, and active community participation are crucial elements for a successful prevention program. Studies have shown that the overall knowledge about HBV infection is substantially less, especially among the general public.³ Majority of the previous studies have looked at the knowledge of healthcare workers, nurses, midwives, and medical students who have a higher risk of getting infection about hepatitis B, its severity, transmission, treatment, prognosis, and prevention.⁴⁻⁶ But very few studies have been done assessing the knowledge of relatives of the infected patients who also carry a high risk

of infection. It has been estimated that the risk of infection among close family members of a patient infected with chronic HBV infection is six times higher than in the general population.⁷ As the literature is scarce regarding the knowledge, attitude, and practice towards HBV infection among the first-degree relatives of patients suffering from chronic hepatitis B infection, which is crucial for effective preventive strategies against Hepatitis B, hence this study has been planned to address that gap.^{6,8}

Aim and objectives

Aims and objectives of current study was to assess the knowledge, attitude, and practice regarding hepatitis B infection among the first-degree relatives of HBsAg-positive patients.

METHODS

Study design, study site, study duration, sample size, and sampling technique

This cross-sectional observational study included first-degree adult relatives of HBsAg-positive patients who visited OPD or were admitted to the Choithram hospital and research center, Indore, India. The sample size was estimated using the formula:

$$Z_{1-\alpha/2}^2 p (1-p) / d^2$$

Where: $Z_{1-\alpha/2}$ = Is standard normal variate (at 5% type 1 error $p < 0.05$) it is 1.96 and at 10% type 1 error ($p < 0.01$) it is 1.645), p = percentage picking a choice (assumed to be 65% based on pilot study), d = absolute error or precision (5%). The study was conducted from December 2016 to March 2018 (15 months). The minimum sample size required was 350. However, 354 participants were included in the study. The participants were enrolled in the study using the convenience sampling technique. Before enrolment, written informed consent was obtained from the participants, and the confidentiality of participant's information was maintained.

Inclusion and exclusion criterion

The study included adult (aged >18 years) first-degree relatives of asymptomatic or symptomatic patients diagnosed with HBsAg infection, chronic hepatitis B, or liver cirrhosis. The persons who could not read or had a total disability were excluded from the study. Spouses and attendants of the patients visiting the hospital regularly, were also excluded from the study. Relatives with a history of hepatitis B infection were also excluded from the study.

Measurement of outcome of interest

Demographic details of the participants were recorded. The information about the knowledge, attitude, and practice was gathered using a self-administered

questionnaire developed in the Hindi language (the local language). The questionnaire consisted of 37 items. Twenty questions were on knowledge, seven were related to attitude, and ten were related to practice. All the questions were kept simple, clear, and easy to interpret. The questions were framed conforming to the expert's advice and based on the literature review.¹⁰ The reliability assessment of the questionnaire was done using the test-retest method. The questionnaire was administered to 20 persons on two different occasions (at least two days apart). A reliability assessment questionnaire was administered to the relatives of the patients with Hepatitis B infection. Minor corrections were made as needed. The final version of the questionnaire was found to have Cronbach's alpha value of 0.78, indicating acceptable reliability. Amongst the knowledge domain, each correct response was assigned a score of 1, and the incorrect response was given a score of 0. The maximum score was 20, and the minimum score was 0. The questions related to attitude were labeled as 'positive' or 'negative' attitudes. Response to each question related to practice was marked as 'good' or 'poor.'

Statistical analysis plan

The data were analyzed using SPSS (statistical package for social sciences) 20.0 version, IBM, Chicago. Data were analyzed for probability distribution using the Shapiro-Wilk test; p value > 0.05 indicated that the data were normally distributed, and thus, a parametric test of significance was applied. Descriptive statistics were performed. The inter-group comparison was done using One-way ANOVA (for continuous variable) and Chi-square test (for categorical variable). Correlation between the continuous variable was assessed using Pearson's correlation coefficient p value < 0.05 was considered statistically significant.

RESULTS

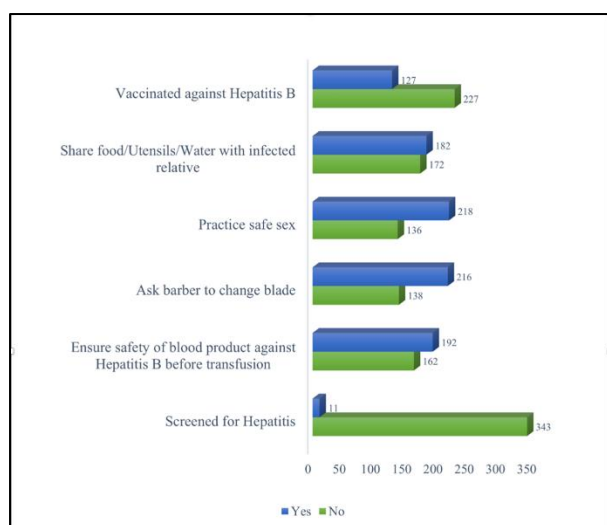
Amongst the study participants, 65.3% had heard of hepatitis, whereas 59.0% had heard of hepatitis B. 36.2% of participants knew about the viral nature of the infection, and 52.0% knew that it could affect persons of any age group. Hepatitis B can infect the liver was known to 55.4% of participants. There were 39% of participants who knew that hepatitis B could be the cause of liver cancer. The majority (52.3%) of the participant did not know the early symptoms of hepatitis B infection. However, 68.4% knew that jaundice is present in persons with hepatitis B infection. Common symptoms of hepatitis B infection, such as nausea, vomiting, and loss of appetite, were known to 55% of participants. The asymptomatic form of hepatitis B infection was not known to 74% of participants. More than half (55.4%) of participants knew about the transmission of disease via unsterile syringes, needles, surgical instruments, contaminated blood, blood products, barbers' blade, nose/ear piercing, or tattooing. Transmission of hepatitis B through unsafe sex and from mother to child was known to 49% of participants.

Table 1: Comparison of mean knowledge score among study participants.

Parameters		Sample size (n)	Mean±SD	P value
Based on age (years)	15-25	69	7.06±5.82	0.001*
	26-35	105	7.91±5.87	
	36-45	58	10.69±6.99	
	46-55	55	9.60±7.24	
	56-65	67	11.16±5.65	
Based on educational qualifications	Illiterate	21	0.00±0.00	0.001*
	Primary	22	0.00±0.00	
	Matric	68	1.25±1.11	
	Higher Secondary	115	8.97±3.67	
	Graduation	81	15.57±0.49	
	Postgraduation	47	17.77±0.84	
Based on gender	Male	192	9.83±6.82	.022 ^a
	Female	162	8.18±6.69	
Based on locality	Urban	174	9.89±6.43	.027 ^a
	Rural	180	8.29±7.08	
Based on the source of information	Friends	12	17.00±0.00	.001*
	Hospital	12	6.00±0.00	
	Media	11	16.00±0.00	
	Internet	23	14.44±1.53	
	None	296	8.21±6.89	

*One-way ANOVA. ^aIndependent 't'-test.

Regarding the treatment of hepatitis B, 12.7% of participants thought it is incurable, 55.1% thought it is curable, whereas 32.2% did not know about it.

**Figure 1: Attitudes and practices of study participants.**

Seventeen percent of participants believed that hepatitis B can be self-cured by the body. Sixteen percent said there is no need to stick to a specific diet to treat hepatitis B, whereas 48.3% had no information about specific dietary requirements during the course of infection. Nearly 95% of participants experienced surprise and sadness on knowing about their relative's hepatitis B infected state because they believed that it would lead to isolation from society and the death of the infected person. Yet 87% of participants

believed that they cannot get infected. But 92.7% of non-infected relatives were worried about the spread of hepatitis B among other family members. Sixty-seven percent of participants first discussed with a doctor about their infected relative, and 77.4% visited a doctor rather than a traditional healer. Amongst the study population, the vast majority (90.4%) found the diagnosis of hepatitis B to be an expensive procedure. In this study, 97% of participants never got screened for hepatitis B. Sixty-one percent of participants reported asking the barber to change the blade before use and asking to change the instrument or needle before piercing or tattooing. Safe sex was practiced by 61.6% of participants. Nearly half (48.6%) of participants reported avoiding sharing food/utensils/water with their infected relatives. The encouragement to complete the treatment was given by 83.9% of participants to their infected relatives. Most participants reported that they had never attended any health education program related to hepatitis B. Seventy-four percent of participants would encourage family and friends to get vaccinated against hepatitis B infection. The knowledge score was comparatively higher amongst males, participants above 35 years of age, graduates and postgraduates, the urban population, and participants obtaining information about hepatitis B from friends, media, or the internet (Table 1).

DISCUSSION

The entire community's participation is essential to control and eradicate infectious diseases. This can be achieved if communities have adequate knowledge about the disease and a positive attitude and good practices towards it. In the present study, spouses and other attendants of the patients regularly visiting the hospital were excluded assuming that

regular visits would have added to their knowledge, which may lead to the overestimation of the knowledge, attitude, and practice of the relatives toward hepatitis B infection. The present study revealed that despite one of the family members being affected by hepatitis B, the majority (83.62%) of subjects did not have any formal source of information regarding hepatitis B. In this era of technological advances, only a minority of subjects credited media (3.11%) and the internet (6.50%) as the source of their information. Similar observations have been reported from Pakistan.^{9,10} It has been reported that only highly educated relatives were more aware of HBV infection, its transmission, and prevention.¹¹ Another recent study from Malaysia revealed low level of knowledge and awareness of Hepatitis B among households.¹² It is known that a negative attitude towards disease impacts the control of disease adversely. The present study reported that most subjects (96%) had a negative attitude (like shame and sadness) when they found their relative suffering from hepatitis B. Despite having a negative attitude, most subjects (77.4%) took their hepatitis B-positive relatives first to a doctor rather than a traditional healer. Still, about half of the subjects (49.4%) took their relatives to a doctor in the asymptomatic stage. In comparison, another half (50.5%) of subjects took their HBsAg positive relatives to a healthcare facility once they developed symptoms. This indicated that almost half of the HBV-positive patients remain unaware of the consequences of hepatitis B infection over a period or till they become symptomatic. This highlighted a lack of knowledge and awareness about symptoms and screening facilities among the first-degree relatives of index patients (96.9 were unaware). This lack of knowledge about the importance of screening and screening facilities could probably be one of the reasons that India continued to be in an intermediate endemic zone despite having an effective vaccination program against hepatitis B. In this study, the majority of the participants insisted on the use of the new blade in a barber's shop (61%), safe blood (54%), and practicing safe sexual behavior (61.6%), which revealed appropriate attitude and practices of study participants about the spread of hepatitis B infection (Figure 1). However, a large section of society is still unaware of safe blood and sexual practices. In the present study, only 35.9% of participants were vaccinated against HBV. Rath A et al., in their study on students entering medical college in Delhi, revealed only 8% of students had completed vaccination, while another 18.7% of students received either one or two doses but did not complete three doses as recommended.¹³ This reflected the poor attitude of the community towards a disease that can be eradicated with immunization. This study revealed rampant misinformation and superstitions about Hepatitis B. This study showed that 51.4% of the subjects were reluctant to use the same utensils, food, and water with an infected patient. This trend points toward society's potential stigmatization and discrimination against hepatitis B-positive patients, preventing asymptomatic patients from coming forward and seeking proper advice. This attitude further dampens their spirit

and negatively impacts the patient and immediate family members. Rajmoorthy et al revealed a low level of knowledge and awareness about Hepatitis B among households in Malaysia.¹² Further, 87.3 % of subjects denied attending any awareness program for hepatitis B, which is probably the reason for the lack of proper Knowledge about the disease. This suggested that in this era of technological advances, print media, the TV industry, etc., there is an urgent need for effective communication to make the population aware of hepatitis B and its prevention. In the present study, the highest mean knowledge scores were recorded amongst the participants aged 55-65 years, followed by the 35-45 years age group. The mean knowledge score of subjects over 35 years was higher in our study than in similar studies conducted in Asia, possibly because Knowledge about the disease has improved with time.¹⁴ The knowledge score, attitude, and practice were lowest in the 25-35 years age group. This suggests that the elderly population has acquired knowledge over time and is more concerned about health-related issues. The mean knowledge score, attitude, and practice of males were statistically more than that of females. They were better in subjects earning more than Rs. 45000/- annum than subjects from economically weaker sections and more urban subjects than rural subjects. These three factors highlight our patriarchal nature of society with poor educational levels among females, weaker sections of society, and rural areas. This may be why lower strata of society were vulnerable to the trap of superstitions regarding the disease, which ultimately influenced their overall awareness and negative attitude and practices regarding hepatitis B. Good penetration of educational and healthcare facilities in urban areas may raise the knowledge of the urban population and bring a positive attitude and good practices. Education has a definite effect on shaping the views about this disease, as is evident from the present study results. The mean knowledge score was highest among graduates and postgraduates and lowest among illiterate subjects. Previous studies revealed that highly educated relatives were more aware of HBV infection, its transmission, and its prevention.^{11,12}

Limitations

A significant limitation of our study is that we have not studied the impact of the number of visits of relatives to hospital with patients before enrollment, which in turn must have influenced their responses to the questionnaire". Secondly, this study was done in a tertiary care hospital in a large city; therefore, it is possible that illiterate subjects, especially from rural areas, remain unstudied.

CONCLUSION

Despite extensive publicity and vaccination drive, there is insufficient knowledge regarding hepatitis B, its common symptoms, modes of transmission, and preventive tools among close relatives of patients suffering from chronic hepatitis B. Correct knowledge can bring positive attitudes

in subjects and adopt good practices regarding hepatitis B. There is an urgent need to improve health education through mass communication with easy access for the population to come out of unscientific myths.

Funding: No funding sources

Conflict of interest: None declared

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

REFERENCES

1. Puri P. Tackling the Hepatitis B Disease Burden in India. *J Clin Exper Hepatol*. 2014;4(4):312-9.
2. Lok AS, McMahon B. Chronic hepatitis B. *Hepatology*. 2007;45(2):507-39.
3. Misra B, Panda C, Das HS, Nayak KC, Singh SP. Study on awareness about Hepatitis B viral infection in coastal Eastern India. *Hepatitis B Ann Kalin Gastroenterol Found*. 2009;6(1):19-28.
4. Sukriti, Pati NT, Sethi A, Agrawal K, Agrawal K, Kumar GT, et al. Low levels of awareness, vaccine coverage, and the need for boosters among health care workers in tertiary care hospitals in India. *J Gastroenterol Hepatol*. 2008;23(11):1710-5.
5. Jha AK, Chadha S, Bhalla P, Saini S. Hepatitis B infection in microbiology laboratory workers: prevalence, vaccination, and immunity status. *Hepat Res Treat*. 2012;2012:1-5.
6. Patil S, Rao RS, Agarwal A. Awareness and risk perception of hepatitis B infection among auxiliary healthcare workers. *J Int Soc Prev Community Dent*. 2013;3(2):67-71.
7. Chakravarty R, Chowdhury A, Chaudhuri S. Hepatitis B infection in Eastern Indian families: need for screening of adult siblings and mothers of adult index cases. *Public Health*. 2005;119(7):647-54.
8. Murhekar MV, Murhekar KM, Sehgal SC. Epidemiology of hepatitis B virus infection among the tribes of Andaman and Nicobar Islands, India. *Trans R Soc Trop Med Hyg*. 2008;102:729-34.
9. Ul Haq N, Hassali MA, Shafie AA, Saleem F, Farooqui M, Aljadhey H. A cross-sectional assessment of Knowledge, attitude, and practice towards Hepatitis B among healthy population of Quetta, Pakistan. *BMC Public Health*. 2012;12:692.
10. Singh V, Mittal V, Verma P. Public awareness, attitude and Knowledge of hepatitis B infection in North India. *Int J Commu Med Public Health*. 2018;5:5184.
11. Rajamoorthy Y, Taib NM, Munusamy S. Knowledge and awareness of hepatitis B among households in Malaysia: a community-based cross-sectional survey. *BMC Public Health*. 2019;19(1):1-11.
12. Rathi A, Kumar V, Majhi J, Jain S, Lal P, Singh S. Assessment of knowledge, attitude, and practices toward prevention of hepatitis B infection among medical students in a high-risk setting of a newly established medical institution. *J Lab Physic*. 2018;10(4):374-9.
13. Khakhkhar VM, Thangjam RC, Parchwani DN, Patel CP. Prevalence of hepatitis b virus infection in health care workers of a tertiary care hospital. *Natl J Med Res*. 2012;2(2):176-8.
14. Ahmad A, Munn SL, Abdul RH. Factors associated with knowledge, attitude, and practice related to hepatitis B and C among international students of Universiti Putra Malaysia. *BMC Public Health*. 2016;16(1):1-8.

Cite this article as: Jain AK, Joshi AD, Jain D, Sircar S. Study of knowledge, attitude, and practice regarding hepatitis B infection in first-degree relatives of patients suffering with hepatitis B infection. *Int J Community Med Public Health* 2023;10:1573-7.