

A Community-Based Assessment of Knowledge, Attitude and Practice on Hepatitis B among Residents in a Coastal Village of Southern India

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Abstract:

Introduction: The National Viral Hepatitis Control Program launched by the Government of India aims to end viral hepatitis by the year 2030. The main key objective of the programme is to enhance community awareness about the virus, the disease and the preventive measures for tackling the burden of hepatitis. Lack of knowledge and awareness regarding the disease, its modes of spread and the available preventive strategies would seriously limit in achieving the goal of reduction in burden and elimination of HBV.

Objective: To assess the knowledge, attitude and practice on epidemiology of Hepatitis B among residents in a coastal village of Puducherry, Southern India. **Method:** A community-based, cross-sectional survey was conducted for three months among 796 adults aged ≥ 18 years residing in a coastal village which was one of the rural field practice areas of a private medical college in Puducherry. Multi-stage sampling technique was followed. A pre-validated, semi-structured questionnaire incorporated in Epicollect 5 software was utilized to capture the data through face-to-face interviews. The data analysis was performed using SPSS, v24.0.


Results: About 66.3% of participants had heard of Hepatitis with 55.9% specifically aware of Hepatitis B as a viral disease. More than half (59.3%) believed they could contract Hepatitis B. About three-fourth (73.1%) had not undergone screening for Hepatitis B, and 67.1% had not received the Hepatitis B vaccination. Age, gender and socio-economic status of the respondents were associated with knowledge attitude and practice on Hepatitis B among participants which was found to be statistically significant (p-value < 0.0001).

Conclusion: The findings from the study showed that more than two third of participants had heard of Hepatitis. More than half of the respondents believed they could contract Hepatitis B. Nearly two-third respondents had not received Hepatitis B vaccination.

Keywords: Epidemiology, Hepatitis B, Knowledge, Practice

Introduction:

Hepatitis B (HBV) infection has been considered as one of the major public health problems globally. Significant morbidity and mortality can result from HBV infection if it is left untreated, as it can cause cirrhosis and hepatocellular cancer. It has been reported that majority of viral hepatitis deaths were caused by the potentially fatal long-term consequences of HBV infection.^[1] The prevalence of HBV infection in the general population has been documented to be 3.5%. India belongs to the intermediate endemicity zone (prevalence of

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2%–7%), with an estimated average prevalence of 3%–4%.^[2–4]

The National Viral Hepatitis Control Program launched by the Government of India in 2018 aims to end viral hepatitis by the year 2030.^[2] The main key objective of the programme is to enhance community awareness about the virus, the disease and the preventive measures for tackling the burden of hepatitis. As of 2019, 10.5% of all people estimated to be living with hepatitis B infection and were aware of their infection, while 22% of the people diagnosed with the disease were on treatment.^[1] Knowledge and awareness rates about HBV range from 9.5% to 80% across various populations from Indian literature with higher percentages reported in studies involving health care workers and medical students.

^[5–8] Lack of knowledge and awareness regarding the disease, its modes of spread and the available preventive strategies would seriously limit in achieving the goal of reduction in burden and elimination of HBV. There are limited data on knowledge and awareness regarding HBV in the general population in India, and most of the studies assessed these parameters among those in the medical profession. With this background, the current research aims to assess the knowledge, attitude and practice on epidemiology of Hepatitis B among residents in a coastal village of Puducherry, Southern India.

Method:

Study design and Study Population

A community-based, cross-sectional survey was conducted from June– August 2023 (three months) among adults aged ≥ 18 years residing in the Panithittu village, for ≥ 6 months. Panithittu village a coastal village which was one of the rural field practice areas of a private medical college in Puducherry. People who were terminally ill, patients with any mental disorders and individuals who were not willing to take part in the study were excluded.

Sample Size and Sampling Method:

Considering 18.1% of the general population were having a good knowledge about Hepatitis B infection as per a study from Odisha, India^[9] the estimated minimum required sample size was found to be 568 using the formula $n = 4pq/d^2$ ^[10] with 95% confidence interval, 5% absolute precision, a non-response rate of 20% and design effect of 2. Multi-stage sampling technique was followed in this study. In step I, one village was selected using simple random sampling among the eight villages present under the rural field practice area of the medical college. In step II, all households of the chosen coastal village were covered. In step III, simple random sampling following Kish grid technique^[11] was used to select the participants from each household and written informed consent was obtained from each person.

Data Collection and Data Analysis:

A pre-validated, semi-structured questionnaire with a Cronbach's alpha value of 0.7^[12,13] was incorporated in Epicollect 5 software to capture data through face-to-face interviews with participants. At the end of the study, the study participants had an educational programme on Hepatitis B based on the identified knowledge gap from the present survey. The data analysis was performed using Statistical Package for the Social Sciences software (SPSS, v24.0; IBM Corp, Armonk, New York). The data has been presented in the form of numbers and percentages for categorical variables and mean and SD/median & IQR for numerical variables.

Knowledge was assessed by giving 1 to correct answer and 0 to the wrong answer. The scale measured knowledge from maximum 20 to minimum 0. Scores < 11 was taken as poor, ≥ 11 as adequate knowledge of Hepatitis B. Attitude was assessed by giving 1 to positive and 0 to negative attitude. The scale classified attitude as positive with score > 4 and negative ≤ 4 . Practice was assessed by giving 1 to correct and 0 to wrong practice. The scale classified practice as good with score > 5 and poor ≤ 5 .

Appropriate test of significance was used to find out the association depending on the nature and distribution of variables like Chi-square test or Fisher's exact test for categorical variables. Values of $p < 0.05$ was considered to be statistically significant. Written informed consent was sought from all participants.

The institute's scientific and ethics committee approval were obtained before the commencement of the study (Refn.: MGMCRI/2023/IRC/02/04/IHEC/62

Results:

It was observed that among 796 participants, 460 (57.8%) were females and the remaining 336 (42.2%) were males. Among the study population, 283 (35.6%) were holding diploma or graduate degree, 164 (20.6%) were educated up to high school, 148 (18.6%) were illiterate, 132 (16.6%) were having middle-school level education and 69 (8.7%) were educated till primary school. Nearly half of the study subjects, 349 (43.8%) were unemployed or homemakers, 121 (15.2%) were involved in skilled work, 117 (14.7%) were involved in semi-skilled jobs, 86 (10.8%) were professionals, 71 (8.9%) were unskilled workers and 52 (6.5%) were semi-professionals. Majority of the respondents belonged to Hindu religion 775 (97.4%). Among the participants, 590 (74.1%) were married, 161 (20.2%) were single and 45 (5.7%) were widowed or separated. Nearly three-fourth 581 (73.0%) were living in nuclear families and 210 (26.4%) were in joint families.

The knowledge, attitude and practice regarding Hepatitis B has been depicted in their respective tables. The knowledge regarding Hepatitis B has been depicted in Table 1.

About 66.3% of participants had heard of Hepatitis, with 55.9% specifically aware of Hepatitis B as a viral disease. The attitude regarding Hepatitis B has been depicted in Table 2. More than half of the

respondents (59.3%), believed they could contract Hepatitis B. Regarding timing for seeking medical help if they contract Hepatitis B, around half of the respondents (51.1%) would go as soon as they realized the symptoms were of Hepatitis B, while 30.9% would seek medical help after their own treatment failed. When asked about the cost, 42.1% believed diagnosis and treatment for Hepatitis B were free at government health facilities, while 49.2% feared death the most if diagnosed of Hepatitis B.

The practice regarding Hepatitis B has been depicted in Table 3. Around three-fourth of participants (73.1%), had not undergone screening for Hepatitis B, and nearly two-third (67.1%) respondents had not received Hepatitis B vaccination.

The socio-demographic determinants of knowledge attitude and practice on Hepatitis B among participants has been illustrated in Table 4. Age, gender and socio-economic status of the respondents were associated with knowledge, attitude and practice on Hepatitis B among participants which was found to be statistically significant (p -value < 0.05). Educational status and occupation of the individuals were significantly associated (p -value < 0.05) with knowledge and practice regarding Hepatitis B among participants. Religion of the individuals was significantly associated (p -value < 0.05) only with practices regarding Hepatitis B among participants.

Discussion:

The diverse sociodemographic profile of the 796 participants underscores the importance of considering various factors in understanding and addressing the Hepatitis B landscape within this community. This discussion synthesizes common themes and variations across the studies, shedding light on the challenges and opportunities for improving hepatitis B awareness and prevention.

Table 1: Knowledge about Hepatitis B among Study Participants (N = 796)

Knowledge	n (%)
Have you ever heard of a disease termed as Hepatitis?	
Yes	528 (66.3)
No	268 (33.7)
Have you ever heard of a disease termed as Hepatitis B?	
Yes	445 (55.9)
No	351 (44.1)
Is Hepatitis B a viral disease?	
Yes	362 (45.5)
No	434 (54.5)
Can Hepatitis B affect any age group?	
Yes	505 (63.4)
No	291 (36.6)
The early symptoms of Hepatitis B are same like cold and flu (fever, running nose, cough)	
Yes	511 (64.2)
No	285 (35.8)
Jaundice is one of the common symptoms of Hepatitis B?	
Yes	495 (62.2)
No	301 (37.8)
Is nausea, vomiting and loss of appetite common symptom of Hepatitis B?	
Yes	501 (62.9)
No	295 (37.1)
Are there no symptoms of Hepatitis B in some of the patients?	
Yes	224 (28.1)
No	140 (17.6)
Don't know	432 (54.3)
Can Hepatitis B affect liver function?	
Yes	457 (57.4)
No	339 (42.6)
Can Hepatitis B cause liver Cancer?	
Yes	297 (37.3)
No	499 (62.7)
Can Hepatitis B be transmitted by un-sterilized syringes, needles and surgical instruments?	
Yes	484 (60.8)
No	312 (39.2)
Can Hepatitis B be transmitted by contaminated blood and blood products?	
Yes	481 (60.4)
No	315 (39.6)
Can Hepatitis B be transmitted by using blades of the barber/ear and nose piercing?	
Yes	469 (58.9)
No	327 (41.1)
Can Hepatitis B be transmitted by unsafe sex?	
Yes	407 (51.1)
No	389 (48.9)
Can Hepatitis B be transmitted from mother to child?	
Yes	508 (63.8)
No	288 (36.2)
Can Hepatitis B be transmitted by contaminated water/food prepared by person suffering with these infections?	
Yes	493 (61.9)
No	303 (38.1)
Is treatment available for Hepatitis B?	
Yes	556 (69.8)
No	240 (30.2)
Is vaccination available for Hepatitis B?	
Yes	496 (62.3)
No	300 (37.7)

Table 2: Attitude towards Hepatitis B among Study Participants (N = 796)

Attitude	Frequency (%)
Do you think you can get Hepatitis B?	
Yes	324 (40.7)
No	472 (59.3)
What would be your reaction if you find that you have Hepatitis B?	
Fear	578 (72.6)
Sadness	93 (11.7)
Shame	38 (4.8)
Surprise	87 (10.9)
Who would you talk to about your illness?	
Children	27 (3.4)
Parents	52 (6.5)
Physician	326 (41.0)
Spouse	142 (17.8)
What will you do if you think that you have symptoms of Hepatitis B?	
Go to Hakeem	18 (2.3)
Go to Health facility	611 (76.8)
Go to Traditional healer	
If you had symptoms of Hepatitis B, at what stage you will go to the health facility?	
After 3-4 weeks of the appearance of symptoms	95 (11.9)
Own treatment fails	246 (30.9)
Soon as I realize the symptoms are of Hepatitis B	407 (51.1)
Will not go to physician	48 (6.0)
How expensive do you think is the diagnosis and treatment of Hepatitis B?	
Don't know	127 (16.0)
Expensive	71 (8.9)
Free of cost at Government health facility	335 (42.1)
Reasonable cost	168 (21.1)
Somewhat expensive	95 (11.9)
What worries you most if you will be diagnosed with Hepatitis B?	
Cost of treatment	58 (7.3)
Fear of death	392 (49.2)
Fear of disease spread to family	334 (42.0)
Isolation from the society	12 (1.5)

The socio-demographic characteristics of the study population in this study were similar to that of a community-based study conducted in Gujarat, India.^[14] About 66.3% of participants had heard of Hepatitis and it was found that 67.1% respondents had not received Hepatitis B vaccination in this current study. Similar findings were published by Misra B et al from Coastal Eastern India. It was also observed in the Misra B et study that 50% of those who were aware had no knowledge about route of transmission, infectivity, or importance of vaccination.^[15] Another study from Quetta, Pakistan, reported poor knowledge, attitude, and practice towards hepatitis B among healthy individuals.^[13] A community-based survey in Gujarat, India,

discovered that only one-third of the population in the study districts was aware of hepatitis B and its vaccine, with less than one-fifth being vaccinated.^[14] Almost all studies indicate a significant gap in awareness levels, emphasizing the need for comprehensive education and awareness programs across different regions. Our study reflects a mixed awareness of Hepatitis B. While a majority of participants had heard of Hepatitis, gaps in understanding specific transmission routes and symptoms were evident. This emphasizes the necessity of targeted educational interventions to enhance community awareness and comprehension of Hepatitis B, ensuring that residents are equipped with accurate information.

Table 3: Practice regarding Hepatitis B among Study Participants (N = 796)

Practice	Frequency (%)
Have you done screening for Hepatitis B?	
Yes	214 (26.9)
No	582 (73.1)
Have you got yourself vaccinated against Hepatitis B?	
Yes	262 (32.9)
No	534 (67.1)
Do you ask for a new syringe before use?	
Yes	502 (63.1)
No	294 (36.9)
Do you ask for screening of blood before transfusion?	
Yes	466 (58.5)
No	330 (41.5)
Do you ask your barber to change blade/ for safe equipment for ear and nose piercing?	
Yes	538 (67.6)
No	258 (32.4)
In case you are diagnosed with Hepatitis B, would you go for further investigation and treatment?	
Yes	590 (74.1)
No	206 (25.9)
Do you avoid meeting Hepatitis B patients?	
Yes	418 (52.5)
No	378 (47.5)
Have you ever participated in health education program related to Hepatitis B?	
Yes	289 (36.3)
No	507 (63.7)

The study in coastal Eastern India found that educated individuals were more aware, especially those who read newspapers and listened to the radio.^[15] In Quetta, Pakistan, education, locality, and occupation significantly influenced knowledge, attitude, and practice scores for hepatitis B patients.^[13] In this study Gender, education, occupation, marital status, socioeconomic status, and age all play roles in shaping knowledge perceptions. Females, highly educated individuals, and professionals are more likely to perceive their knowledge as adequate. Married and younger individuals also share this perception. In contrast, males, those with lower education, unemployed individuals, and older age groups tend to perceive their knowledge as poor.

The study on the outbreak of hepatitis B in a rural area of West Bengal identified local medical practitioners' injections and unsafe sex with sex workers as risk factors.^[16] Another Indian study found that unsafe sex with sex workers and injections given by local medical practitioners were risk factors for the outbreak.^[15] Unsafe practices, especially

related to medical procedures and sexual contact, were identified as significant contributors to hepatitis B outbreaks in different regions. Similar to this the present study also reflects 60.8% recognized the risk from unsterilized instruments, 60.4% from contaminated blood, and 51.1% from unsafe sex.

The present research in addition found fear emerged as the predominant emotional response, underscoring the need for psychological support services and initiatives to dispel myths and reduce stigma surrounding the disease. The preference for seeking medical help from health facilities is a positive aspect, indicating a willingness to engage with formal healthcare systems.

The studies conducted by Biswas et al^[16] and Laishram et al^[17] consistently report low awareness and utilization of hepatitis B vaccination. Even in areas with recent outbreaks, vaccination rates remain suboptimal. This indicates a critical gap in vaccination programs, necessitating not only increased accessibility but also targeted efforts to dispel misconceptions and enhance vaccine acceptance.

Table 4: Socio-demographic Determinants of Knowledge Attitude and Practice on Hepatitis B Among Participants (N = 796)

Variables	knowledge on Hepatitis B			Attitude on Hepatitis B			Practice on Hepatitis B		
	Adequate N=796 (%)	Poor N=796 (%)	p- value	Negative N=796 (%)	Positive N=796 (%)	p- value	Good N=796 (%)	Poor N=796 (%)	p- value
Age in years									
18-30	132 (70.2)	56 (29.8)	<0.0001*	70 (37.2)	118 (62.8)	<0.0001*	70 (37.2)	118 (62.8)	<0.0001*
31-45	164 (70.7)	68 (29.3)		78 (33.6)	154 (66.4)		78 (33.6)	154 (66.4)	
46-60	89 (51.4)	84 (48.6)		38 (22.0)	135 (78.0)		38 (22.0)	135 (78.0)	
>60	52 (51.5)	49 (48.5)		17 (16.8)	84 (83.2)		17 (16.8)	84 (83.2)	
Gender									
Female	228 (56.4)	176 (43.6)	<0.0001*	95 (23.5)	309 (76.5)	<0.0001*	95 (23.5)	309 (76.5)	<0.0001*
Male	209 (72.1)	81 (27.9)		108 (37.2)	182 (62.8)		108 (37.2)	182 (62.8)	
Education									
Diploma & above	203 (76.0)	64 (24.0)	<0.0001*	56 (21.0)	211 (79.0)	0.213	104 (39.0)	163 (61.0)	<0.0001*
High school	99 (70.2)	42 (29.8)		26 (18.4)	115 (81.6)		49 (34.8)	92 (65.2)	
Illiterate	36 (29.0)	88 (71.0)		37 (29.8)	87 (70.2)		12 (9.7)	112 (90.3)	
Middle school	69 (66.3)	35 (33.7)		26 (25.0)	78 (75.0)		23 (22.1)	81 (77.9)	
Primary school	30 (51.7)	28 (48.3)		13 (22.4)	45 (77.6)		15 (25.9)	43 (74.1)	
Occupation									
Professional	68 (82.9)	14 (17.1)	<0.0001*	18 (22.0)	64 (78.0)	0.974	35 (42.7)	47 (57.3)	0.001*
Semi-professional	38 (74.5)	13 (25.5)		10 (19.6)	41 (80.4)		16 (31.4)	35 (68.6)	
Semi-skilled	68 (67.3)	33 (32.7)		22 (21.8)	79 (78.2)		33 (32.7)	68 (67.3)	
Skilled	79 (71.8)	31 (28.2)		26 (23.6)	84 (76.4)		42 (38.2)	68 (61.8)	
Unemployed	156 (54.0)	133 (46.0)		66 (22.8)	223 (77.2)		63 (21.8)	226 (78.2)	
Unskilled	28 (45.9)	33 (54.1)		16 (26.2)	45 (73.8)		14 (23.0)	47 (77.0)	
Socioeconomic status (According to modified B.G.Prasad classification)									
Upper class	86 (77.5)	25 (22.5)	0.003*	19 (17.1)	92 (82.9)	0.041*	50 (45.0)	61 (55.0)	0.001*
Upper middle	92 (57.9)	67 (42.1)		39 (24.5)	120 (75.5)		36 (22.6)	123 (77.4)	
Middle class	129 (58.1)	93 (41.9)		43 (19.4)	179 (80.6)		62 (27.9)	160 (72.1)	
Lower middle	89 (67.4)	43 (32.6)		42 (31.8)	90 (68.2)		34 (25.8)	98 (74.2)	
Lower class	41 (58.6)	29 (41.4)		15 (21.4)	55 (78.6)		21 (30.0)	49 (70.0)	
Religion									
Christian	7 (77.8)	2 (22.2)	0.639	5 (55.6)	4 (44.4)	0.058	5 (55.6)	4 (44.4)	0.027*
Hindu	426 (62.7)	253 (37.3)		152 (22.4)	527 (77.6)		194 (28.6)	485 (71.4)	
Muslim	4 (66.7)	2 (33.3)		1 (16.7)	5 (83.3)		4 (66.7)	2 (33.3)	
*Chi-square test applied (p-value < 0.05 considered as statistically significant)									

*Chi-square test applied (p-value < 0.05 considered as statistically significant)

The significant percentage of participants who had not undergone screening or received vaccination in the present study highlights potential barriers to accessing preventive measures. The practice of avoiding Hepatitis B patients and low participation in health education programs observed in this study reveal social and informational gaps, suggesting the need for community-specific awareness campaigns.

The main strength of this research is that it is a community-based study covering an adequate sample size guaranteeing generalizability of the study findings. One possible limitation of this study is

that follow up screening for the disease for persons with high titres in sero-survey and Hepatitis B vaccination could have been added as an intervention component in the study.

Conclusion:

The findings from the study showed that more than two third of participants had heard of Hepatitis, with half of them specifically aware of Hepatitis B as a viral disease. More than half of the respondents believed they could contract Hepatitis B. Around three-fourth of participants had not undergone screening for Hepatitis B, and nearly two-third

respondents had not received Hepatitis B vaccination. Age, gender and socio-economic status of the respondents were associated with knowledge, attitude and practice on Hepatitis B among participants. Educational status and occupation of the individuals were significantly associated with knowledge and practice regarding Hepatitis B among participants. Religion of the individuals was significantly associated only with practices regarding Hepatitis B among participants.

Recommendation:

The findings from this community-based assessment highlight the importance of considering the identified diverse socio-demographic determinants such as age, gender, socio-economic status, educational qualification, occupation and religion when designing targeted awareness and prevention campaigns for Hepatitis B. A targeted action plan is essential to raise awareness about hepatitis B in the region. Comprehensive public campaigns should be launched to educate on transmission, prevention, and vaccination importance for Hepatitis B through various media and community events.

Declaration:

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Conflicts of interest: Nil

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