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ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT HEPATITIS B AMONG CLINICIANS & MEDICAL STUDENTS: A CROSS SECTIONAL STUDY

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ABSTRACT

Background: Hepatitis B (HB) is a serious global public health problem that causes chronic liver disease and accelerates high risk of death from cirrhosis of the liver and liver cancer. Present study aims to evaluate Knowledge, Attitude and Practice (KAP) towards HB among Clinicians & students of Jhalawar Medical College, Rajasthan.

Methods: A cross sectional, descriptive study was undertaken. 500 Clinicians & Medical students were approached for the study. KAP towards HB was assessed by using a pre validated questionnaire. Descriptive statistics were used for elaborating participants' demographic characteristics while Pearson's correlation was used to identify association between the study variables.

Results: Out of 500 distributed questionnaires, 354 were returned with a response rate of 70.80%. Majority of them were Medical students (60.2%) & rest were Clinicians. Mean scores for knowledge, attitude and practice were 15.66 ± 1.9, 7.17 ± 1.15 and 6.8 ± 1.13 respectively. Significant and positive linear correlations between designation vs. knowledge ($r = 49.18$, $p < 0.00$); vaccination status vs. knowledge ($r = 28.88$, $p < 0.001$); duration of experience vs. knowledge ($r = 23.51$, $p < 0.001$) and attitude vs. vaccination status ($r = 3\ 0.14$, $p < 0.05$) were observed.

Conclusion: Clinicians & Medical students reflected fairly moderate level of KAP regarding HB infection and vaccination with important gaps.

Keywords: KAP, Hepatitis B, clinician, medical students, India

INTRODUCTION

Hepatitis B is a potentially life-threatening liver infection caused by the hepatitis B virus which is a major global health problem. It can cause chronic liver disease and puts people at high risk of death from cirrhosis of the liver and liver cancer[1-2]. According to WHO estimate, two billions people in the world have serological evidence of prior HBV infection[3]. Of the world's carriers of HBV, 75% are from Asia[4]. Globally, it is estimated that approximately 400 million individuals are chronic carriers of HBV and more than a million people die annually from its related causes[5, 6]. This high prevalence rate with its sequels makes HBV infection a disease of major public health importance worldwide[7].

In South East Asian Region, The virus causes 60-80% of all primary liver cancer, which is one of the top three causes of death due to cancer[8] & there are estimated 80 million HBV carriers (about 6% of the total population) in SEAR[9]. The average estimated carrier rate of hepatitis B virus (HBV) is 4%, placing India in the intermediate range for hepatitis B endemicity[10] and giving an approximate total of 36 million carriers[11]. Among the estimated 400 million hepatitis B surface antigen (HBsAg) carriers worldwide, therefore, India alone contributes 9% of the total [12]while in hospital staff it is 10.87%[8].

HBV have common routes of transmission, such as occupational exposure among health care workers (HCWs), unprotected sexual contact, peri-natal transmission, intravenous drug use[13-14] or through blood products and contamination during medical procedures. Symptoms in HBV infection appear only in 35% of those infected. It has been demonstrated that patient medical histories are unreliable in identifying exposure to the infection[15]. Healthcare associated infections (HAIs) are a serious problem in the healthcare services as they are common causes of illness and mortality among patients. Despite the high prevalence of HBsAg among health workers, studies revealed inadequate knowledge of hepatitis B infection and poor safe practices to prevent its transmission among them[16-17].The beliefs of health care workers particularly regarding the safety and efficacy of hepatitis B vaccine, have a major impact on their decision to accept or reject vaccination[18].

This study aims to determine health care providers' knowledge, attitude and practice towards hepatitis B infection at Jhalawar Medical College & attached hospital, Jhalawar, Rajasthan. This study was done to identify the gaps in health care providers' knowledge; attitude and practice would be helpful in planning effective health education campaign for health care staff.

METHOD

This was a cross-sectional interview and hospital-based study which was conducted at Jhalawar Medical College & attached hospital, Jhalawar, Rajasthan, which was carried out from May 2013 to June 2013. Medical College Clinicians & Medical students participated in this study. Clinicians were approached in their respective departments & students were approached in their lecture halls and a verbal consent was taken. A pre-formed, pre-tested questionnaire was distributed and collected after its completion.

All the necessary approvals for carrying out the research were obtained. The Ethical Committee of the Jhalawar Medical College, Jhalawar had approved the research. A written format explaining the purpose of the research was prepared and signed by the participants before filling the questionnaire.

A 39-item English version questionnaire comprising of four sections was used for data collection. In addition to the demographic data, 20 questions for knowledge, 10 questions for attitude and 9 questions for practices were designed to evaluate KAP among Medical College clinicians & medical students. Respondents were asked to answer in limited as well as multiple choice formats. The primary version of the questionnaire was developed through an extensive literature review in English[19-23] with the same topic as well as from our own experience. It consisted of four sections.

The first one was related to socio-demographic characteristics; personal habits; vaccination status and duration of experience in medical field; the second was designed to test participants' knowledge about the basic knowledge, symptoms & signs; risks of acquiring and/or transmitting HBV from/to a patient, treatment, vaccination and precautions for prevention; the third and fourth sections contained questions related to participants' attitudes toward perception of the risk of acquiring HBV infection and practice of precautions respectively. Correct answer to each item was based on a review of the available literature as well as policies and standard guidelines.

The questionnaire was then piloted on 30 Clinicians and Medical students. This study was formulated to test the clarity, applicability of the study tools, identify the difficulties that may be faced during application. Also, the time needed for filling the questionnaire by staff was estimated during this pilot study. Necessary modifications according to results obtained were done. Data from pilot study was not included in final analysis.

Demographic characteristics: A total of 500 questionnaires were distributed and 354 were received with a response rate of 70.80% as shown in Table 1. The gender distribution was 237 (66.9%) of males and the rest females & around half of them (53.4%) belonged to general category followed by OBC group (35%) & rest belonged to Schedule cast/schedule tribe (11.6%). Mean age of study

participants was 26.08 ± 8.69 years & most of them belonged to age group 21-25 (68.4%). Majority of them were medical students (60.2%) followed by physician (39.8%) who participated in current study. Regarding experience in medical field, around sixty percent (64.1%) had < 5 years whereas one fifth (20.6%) had 6 to 10 years experience. About one forth (24.3%) participants were alcoholic, one fifth (19.2%) were smoker & 8.5% were tobacco chewer.

Table 1 Characteristics of the Study Respondents (N = 354)

Characteristics	N (%)
Age (Years)	
Mean age	**26.08 ± 8.69**
≤ 20	28 (7.9)
21-25	242(68.4)
26-30	25(7.1)
31-35	17 (4.8)
36-40	22 (6.2)
>40	20(5.6)
Gender	
Male	237(66.9)
Female	117(33.1)
Religion	
Hindu	334(94.4)
Muslim	20(5.6)
Caste	
General	187(53.4)
OBC	124(35.0)
ST & SC	41(11.6)
Designation	
Medical students	213(60.2)
Physician	141(39.8)
Duration of experience (Years)	
≤ 5	227(64.1)
6-10	73(20.6)
11-15	22(6.2)
> 15	32(9.0)
Any h/o Alcohol intake	
Yes	86(24.3)
No	268(75.7)
Any h/o Smoking habit	
Yes	68(19.2)
No	286(80.8)
Any h/o Tobacco chewing habit	
Yes	30(8.5)
No	324(91.5)
Hepatitis B Vaccination status	
Yes	290(81.9)
No	64(18.1)
If yes, then vaccination (n=290)	
Complete	238(82.1)
Incomplete	52(17.9)

Assessment of Knowledge towards HB: Table 2 describes the current status of knowledge. Knowledge was assessed by asking questions about etiology, signs and symptoms, transmission, treatment management and vaccination of HB. Each response was scored as 'yes' or 'no'. 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. A cut off level of ≤16 (≤ 80%) was considered as poor whereas ≥17 (>80%) was considered as adequate knowledge about HB.

The mean knowledge score for the entire study cohort was 15.66 ± 1.9 that was considered as poor knowledge. Out of the 354 participants, 209 (59.04%) were within the adequate knowledge range whereas 145 (40.96%) showed poor knowledge about HB. Poor knowledge was apparent in responses to some questions relating to symptoms (question 3 & 5), the transmission of HB (questions 12&14) and Treatment/ vaccination (questions 15, 16, 18 & 20). Correct response rates to these questions were 72.3%, and 69.8% for symptoms, 77.7% and 64.1% for the transmission and 74.6%, 49.4%, 64.4% and 42.9% treatment / vaccination of HB.

Assessment of Attitude towards HB: Attitude towards HB was assessed by asking ten questions, as shown in Table 3. Each question was labelled with positive or negative attitude; the respondents were allowed to choose to only one response. A score of 1 was given to positive while 0 was given to negative attitudes with a score range of maximum of 10 to a minimum of 0. A cut off level of ≤ 8 was considered as negative whereas > 8 was considered as positive attitude towards HB. The mean score of attitude for the entire study cohort was 7.17 ± 1.15. Out of the 354 participants, 309 (79.2%) were within the positive attitude range whereas 81 (20.8%) showed a negative attitude towards HB. Around 60% of the participants (n = 212) believed that they could become infected with HB. One hundred & fifteen (32.5%) participants stated that they felt shock when they found out that they were infected with HB. Two hundred and twenty six (63.8%) of the study respondents visited a physician for consultation. However, respondents were ready to disclose their disease to their spouse (n = 35, 9.9%) and parents (n = 78, 22.0 %). More than ninety percent (n=321) study respondents visited health facility as symptoms appeared of Hepatitis B and majority (86.4%) would go to health facility as soon as realized the symptoms of Hepatitis B. Around one third participants thought that diagnosis & treatment of Hepatitis B is free whereas one third (37.9%) thought it is reasonably expensive and 9.3

% did not known about cost of diagnosis & treatment. Regarding the response of participants if they would be diagnosed with hepatitis B, about one third respondents (31.4 %) feared of death while 37.3 % feared of disease spread to family whereas 9.6% worried that they would be isolated from the society. Seventy one percent of the participants believed that a hepatitis patient should be allowed to work routinely. Around one third participants (29.1%) correctly indicated that the hepatitis patients should not be isolated and eighty percent felt that they be not allowed strenuous exercise.

Assessment of practices towards HB: Practices towards HB were assessed by asking nine questions as shown in Table 4. Each question was labeled with good or poor practice. A score of 1 was given to good while 0 was given to bad practice with a score range of maximum of 9 to a minimum of 0. A cut-off level of ≤7 was considered as poor whereas > 8 was considered as good practices towards HB. Around fifty percent of the respondents, 173 (48.9%) never went for HB screening but majority 290 (81.9%) of participants were immunized against HB. Majority 338 (95.5%) of participants asked for a fresh syringe when required & 343 (96.9) always asked barber to change blade or for safe equipments for ear and nose piercing when required, while 334 (94.4%) agreed with the statement that they asked for screening of blood and blood products before transfusion.

Three hundred and forty two (96.6%) agreed that they will go for further investigations and treatment if they are infected with HB and one hundred & twenty six participants opted for not sharing food/utensils/water etc. with others. On the contrary around one fourth of the study participants (n = 94, 26.6%) revealed that they would avoid meeting with person. In addition, a large number of respondents (n = 156, 44.10%) have ever attended any educational program on HB. The mean score for HB related practices was 6.8 ± 1.13 revealing poor practices among the study participants.

Table 2 Responses to Hepatitis B Knowledge Items

Hepatitis B Knowledge Items	YES (%)	NO (%)
1. Hepatitis B is a VIRAL INFECTION	352(99.4)	2 (0.6)
2. Can Hepatitis B affect liver function?	351(99.2)	3(0.8)
3. Can Hepatitis B cause liver Cancer?	256(72.3)	98(27.7)
4. Hepatitis B can affect any age groups	318(89.8)	36(10.2)
5. Early symptoms of Hepatitis B are same like cold and flu (fever, running nose, cough)	247(69.8)	107(30.2)
6. Jaundice is one of the common symptoms of Hepatitis B	338(95.5)	16(4.5)
7. Are nausea, vomiting and loss of appetite common symptom of Hepatitis B?	321(90.7)	33(9.3)
8. Are there no symptoms of the Hepatitis B in some of the patients?	287(81.1)	67(18.9)
9. Can Hepatitis B be transmitted by un-sterilized syringes, needles and surgical instruments?	341(96.3)	13(3.7)
10. Can Hepatitis B be transmitted by contaminated blood and blood products?	344(97.2)	10(2.8)
11. Can Hepatitis B be transmitted by using blades of the barber/ear and nose piercing?	327(92.4)	27(7.6)
12. Can Hepatitis B be transmitted by unsafe sex?	275(77.7)	79(22.3)
13. Can Hepatitis B be transmitted from mother to child?	302(85.3)	52(14.7)
14. Can Hepatitis B be transmitted by contaminated water/food prepared by person suffering with these infections?	127(35.9)	227(64.1)
15. Is Hepatitis B treatable?	264(74.6)	90(25.4)
16. Can Hepatitis B be self-cured by body?	175(49.4)	179(50.6)
17. Is vaccination available for Hepatitis B?	327(92.4)	27(7.6)
18. Is specific diet required for the treatment of Hepatitis B?	228(64.4)	126(35.6)
19.Hepatitis Vaccine schedule in adults		
• 0,2& 6M	56(15.8)	
• 0,1& 6M	284 (80.2)	
• 1,2 & 3M	12 (3.4)	
• 0,1& 2M	2 (0.6)	
20. Prophylaxis of Hepatitis B infection in general population		
• Serum Immunoglobulin & Hepatitis B Vaccine	160 (45.2)	
• Only Serum Immunoglobulin	42 (11.9)	
• Only Hepatitis B Vaccine	152 (42.9)	

Table 3: Responses to Attitude toward Hepatitis B

Hepatitis B Attitude Items	N (%)
Do you think you can get Hepatitis B?	
Yes *	212(59.9)
No	142(40.1)
What would be your reaction if you found that you have Hepatitis B?	
Fear*	99(28.0)
Shame	14(4.0)
Surprise	77(21.8)
Sadness	49(13.8)
Shock	115 (32.5)
Who would you talk first to about your illness?	
Physician	226(63.8)
Spouse	35(9.9)
Parents	78(22.0)
Child	4(1.1)
Friends	2(0.6)
No one¥	9(2.5)
What will you do if you think that you have symptoms of Hepatitis B?	
Will take self treatment	21(5.9)
will Go to health facility	321(90.7)
will go to a Homeopath	9(2.5)
will go to a traditional healer¥	3(0.9)
If you had symptoms of Hepatitis B, at what stage you will go to Health facility?	
Own Treatment fails	10(2.8)
After 3–4 weeks of the appearance of symptoms	32(9.0)
Soon as realize the symptoms are of Hepatitis B*	306(86.4)
Will not go to anywhere	6(1.7)
How expensive do you think is the Diagnosis & treatment of Hepatitis B?	
Free	111(31.4)
Reasonable	134(37.9)
Somewhat expensive	50(14.1)
Expensive	26(7.3)
Don't know¥	33(9.3)
What worries you most if you will be diagnosed with Hepatitis B?	
Fear of death	109(30.8)
Fear of disease spread to family	132(37.3)
Cost of treatment	13(3.7)
Isolation from the society ¥	34(9.6)
Nothing	66(18.6)
Should Hepatitis patients be allowed to work routinely?	
Yes *	252(71.1)
No	102(28.8)
Should Hepatitis patients be allowed to do strenuous exercise?	
Yes	73(20.6)
No*	281(79.4)
Should Hepatitis patients be isolated?	
Yes	251(70.9)
No*	103(29.1)

*Positive attitude, ¥Negative attitude.

Table 4 Responses to Practices related to Hepatitis B

Hepatitis B Practice Items	Yes (%)	No (%)
Have you done screening for Hepatitis B?	181(51.1)	173(48.9)
Have you got yourself vaccinated against Hepatitis B?	290(81.9)	64(18.1)
Do you ask for a new syringe before use?	338(95.5)	16(4.5)
Do you ask your barber to change blade/or for safe equipments for ear and nose piercing?	343(96.9)	11(3.1)
Do you ask for screening of blood before transfusion?	334(94.4)	20(5.6)
In case you are diagnosed with Hepatitis B, would you go for further investigation and treatment?	342(96.6)	12(3.4)
In case you are diagnosed with Hepatitis B, Do you share food/utensils/water etc. with others	228(64.4)	126(35.6)
In case you are diagnosed with Hepatitis B, Do you avoid meeting with people?	94(26.6)	260(73.4)
Have you ever participated in health education program related to Hepatitis B?	198(55.9)	156(44.1)

Statistical Analysis: Three hundred and fifty four Medical College clinicians, medical students & interns participated in this study. The data were entered and analyzed using SPSS (ver-12) statistical software. Descriptive statistics were used (mean ± standard deviation for quantitative variables and frequency with percentage distribution for categorized variables). Chi-square test was used to determine the between independent variables (age-group, gender, caste, religion, designation, duration of experience, personal habit/life style, vaccination of hepatitis B) with knowledge, attitude and practice (KAP) towards hepatitis B.

Association of demographic characteristics and KAP scores: The association of demographic characteristics and mean KAP scores is presented in Table 5. Among the demographic variables, gender, designation, vaccination status, and experience in medical field were significantly associated. ($p<0.005$).

DISCUSSION

HBV infection an occupational risk for Clinicians and surgeons especially in developing countries

where a carrier rate is about 4%. However, incidence of HBV infection could be brought down by creating awareness regarding its transmission and encouraging practice of immunization with Hepatitis B at all health care provider levels. It is preventable by a safe and effective vaccine. It is easy to assumed that health workers by virtue of their proximity to the health facility should have adequate knowledge, positive attitude & good practice about diseases and other health conditions.

The current study sought to evaluate KAP towards HB among health care providers. Results of the study revealed moderate KAP score about HB. The overall mean knowledge score was 15.66 ± 1.9 indicating low level of knowledge towards HB among the study cohort but around three fourth of respondents actually knew about transmission of HB might occur perinatally & two third knew that it did not transmit through contaminated food & water. Only 27.7% of the participant did not believe that HB can cause liver cancer, which is again a major sign of concern. This gap in knowledge of risk perception calls for concern among all stakeholders seeing that health workers have a high risk of being infected with Hepatitis B virus because of their high frequency of exposure to blood and other body fluids coupled with the high contagiousness of hepatitis B virus (HBV) which also similar with study did by Samuel et al[24] (2009). In contrast, 77.7% knew that Hepatitis B can be transmitted from unsafe sex but still 1/4th doesn't agree that unsafe sex can transmit this infection. This indicated that there are wide areas where the knowledge was lower, particularly regarding infections from unsafe practice. The current study revealed that 80.2% of the respondents knew the correct vaccine schedule of hepatitis B vaccine required for complete protection few (3.4%) were confused because of different immunization schedule followed in National Immunization Program of India. About 43% knew the Prophylaxis of Hepatitis B infection in general population while majority (45.2%) thought that both immunoglobulin and vaccine were required to prevent infection in general population. Actually, only vaccine is sufficient for prevention of complication of Hepatitis B in general population while immunoglobulin and vaccine are required only in high risk cases. Based on this consideration, continuing medical benefits in the health care environment require continuing educational input. This finding is however at variance with another study done in Karachi (Pakistan) where the respondents demonstrated a very low knowledge of HBV infection[16].

Another finding was that the attitudes towards HBV infections were encouraging some issues, since a high percentage of respondents reported positive specific beliefs, around 40% of participants believed that they could never get the infection. Perceived susceptibility or a viewpoint of how vulnerable a person considers himself/herself to getting a disease can influence one's attitude in taking certain actions[19]. In addition, a small number (~10%) of participants revealed the use of self treatment and alternative medicines after they became infected with HB before consulting a physician. In some students (2.5%), homoeopath was the treatment of choice until there was no improvement in the signs and symptoms of HB. Consulting Clinicians was sought as the last resort in these health care providers due to either they did not have adequate knowledge of treatment or vaccination of hepatitis B. The delay in seeking medical treatment results in the further deterioration of the condition of himself/herself or patients and can cause the spread of infections to other healthy individuals as well.

Nearly 1/5th of the patients perceived HB treatment as expensive which could be one reason for using alternative treatments. Within this context, poor knowledge, less educational resources exposure & poor attitude could be additional reasons for seeking alternative methods of treatment. Samuel et al study showed that there are many potential reasons for low vaccination coverage: busy schedules, lost time (and perhaps income) while getting the vaccination, lack of knowledge about severity and vaccine efficacy, perception of low risk status[16, 25].

Current study showed that around one tenth of respondents showed that Isolation from society was one of a fear factors after being diagnosed with HB. Isolation describes the absence of social interactions in society and results in several behavioural changes. The phenomenon of isolation has been widely studied among patients with mental health problems[22]; however, this phenomenon is not well explored among HB patients from conservative societies like India. Such behavioural changes may also affect patients' health-related quality of life which is evident from literature[23]. It is interesting to note that the one fourth of respondents also reported that they avoid meeting people; this is negative view for

health care providers as it could lead them to become self-isolated rather than society making them isolated.

Participant in the current study also showed good practice towards HB. Only a 50% of participant appeared for HB screening before they were diagnosed with infection. The majority of the respondents were concerned about the safety measures which exposed them to the danger of spreading HB infection within their social circle like seeking services at barber shops or using new syringe/screened blood. This might be due to HIV infection which also transmitted through blood contamination. Thus, all HB diagnosed patients should be informed regarding the importance of safe practice and the dangers of spreading the infection to healthy individuals. Fifty five percent of the participants had attended a health education program, and they reported a lack of information about educational campaigns in their areas. Educational programs are strongly recommended for all health care providers. Mass media, training/workshop should be recognised and introduced as an effective educational tool for HB patients with an aim of a better understating of HB.

In the current study, the designation, vaccination status and experience in medical field were the significant demographic factors associated with the mean KAP scores. Although vaccination status was reported to be significantly associated with KAP scores in other studies from different parts of the world[26] [Nazeer Khan et al 2010], the literature do not report a relationship between designation/experience in medical field and KAP of HB patients.

Overall basic knowledge was inadequate, attitude and practices were compromised among Clinicians & medical students at tertiary care level. To reduce the occupational risk among themselves & patients, effort should be focused to establish effective training & retraining programmes, organizing workshop and seminars & time to time availability of health resources material for health care providers.

CONCLUSION

A study was conducted to evaluate the magnitude of awareness regarding transmission of Hepatitis B amongst the Clinician and medical students in Tertiary care hospital, Rajasthan. This study also focused on the practice of Clinician and medical health care professionals regarding the protective and preventive measures to prevent the transmission of hepatitis B and infection control. Knowledge of the medical staff is not sufficient relating to symptoms, the transmission of HB and Treatment/ vaccination; also showed good practice towards HB and a significant number of participants received or did complete the vaccination.

LIMITATIONS OF THE STUDY

Present study covers a cross section of health professionals only so one should be cautious while generalizing the results moreover chances of individual subject bias can't be completely overruled. Secondly, because our study was cross-sectional in nature, we cannot attribute causation to individual factors. (i.e., we could not show that being screened for HBV leads to greater HBV knowledge, or vice versa).

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