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Knowledge and practices towards hepatitis B among patients and their attendants in a primary healthcare facility in Bangladesh

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ABSTRACT

Background: Hepatitis B virus (HBV) infection continues to be a major public health issue worldwide. This study assessed the relationship between knowledge and practices towards hepatitis B among patients and their attendants in a primary healthcare facility in Bangladesh.

Methods: Respondents' knowledge and practices were assessed via interviewer-administered questionnaires using a cross-sectional design. The sample size was 204 which was selected conveniently. Chi square testing and binary logistic regression were conducted to examine the relationship between HBV related knowledge and practices.

Results: Among 204 respondents 77.9% and 80.4% had poor knowledge and practices respectively about hepatitis B. It was observed that the respondents with adequate knowledge had showed good practice regarding hepatitis B screening (p<0.001), vaccination (p=0.001), screening of blood before transfusion (p=0.018), demanding new syringe before each use (p=0.018), participation in hepatitis B related health education (p<0.001). Furthermore, all the respondents with adequate knowledge group agreed with the statement that they will go for further investigation and treatment if they get infected with HBV (p=0.009). Total knowledge and secondary level of education were significant independent predictors of good practice. OR for knowledge: 1.10 (95% CI: 1.03 to 1.18); OR for secondary level education: 5.66 (95% CI: 1.10 to 29.12).

Conclusions: Our results suggest that there is lack of knowledge and practices towards HBV among study population and better knowledge is associated with increased preventive practices. Thus, there is a need for increased HBV education and improved community-based interventions to prevent HBV-related liver disease.

Keywords: Bangladesh, Hepatitis B, Knowledge, Practice

INTRODUCTION

Hepatitis B virus (HBV) infection is a global public health challenge with an average worldwide prevalence of 3.61%. A long incubation period (30 to 180 days) and a protracted illness with a variety of outcomes is associated with Hepatitis B.² Though acute hepatitis B is usually a self-limiting disease, chronic hepatitis B infection encompasses a spectrum of diseases and is defined as persistent HBV infection. Persistent HBV infection may cause progressive liver diseases like chronic hepatitis, cirrhosis, and hepatocellular carcinoma. Since all HBV infections do not give symptoms, some people might not even know that they are contagious. The World Health

Organization (WHO) in 2015 reported 887, 000 deaths were due to cirrhosis and hepatocellular carcinoma, and 257 million people suffered from chronic hepatitis B infection.⁶ Without an expanded and accelerated response, 20 million people are suspected to die from hepatitis B globally by 2030.⁷

Though the prevalence of hepatitis B among the general population is 5.5%, placing Bangladesh in an intermediate endemicity zone- HBV is still the leading cause of all forms of chronic liver diseases (CLD) and second commonest cause of acute hepatitis in Bangladesh.⁸ Major risk factors for the transmission of HBV in Bangladesh are treatment from quack, mass

vaccination against chickenpox and cholera, haircut and shaving at barber shop. A substantial proportion of apparently healthy Bangladeshis do not know the fact that they have the infection and many of them have already developed progressive liver damage. There have been few studies on knowledge and practices about viral hepatitis B among general population in developing countries like Bangladesh, but studies such as these are crucial for the appropriate use of limited resources in poor socioeconomic and educational conditions. The objective of this study was to test the relationship between knowledge and practices towards hepatitis B among patients and their attendants in a primary healthcare facility in Bangladesh.

METHODS

From January 2020 to February 2020, we performed a cross sectional study among 204 patients and their attendants aged 18 years and older visiting the outpatient department (OPD) of Savar Upazila health complex, Savar, Dhaka. Savar is an Upazila (sub-district) of Dhaka district in the division of Dhaka, Bangladesh which is located at a distance of about 24 kilometers to the northwest of Dhaka city. This setting was chosen because it is a public health, primary healthcare facility providing clinical inpatient and outpatient services for a great number of populations of about 1,442,885. Convenience sampling method was used for respondents' enrolment in the study. Patients who had serious medical/surgical illness or were unable to answer a short list of simple questions (sociodemographic information such as name, address, etc.) were excluded from the study.

The instrument for this study was adapted from pretested questionnaire that have been used in an earlier report.¹⁰ The knowledge and practices of the subjects were assessed via an interviewer-administered questionnaire. Data was collected using a semi-structured, three-part questionnaire. The first part of the questionnaire consisted of sociodemographic information, part two consisted of 20 knowledge questions, and part three focused on practice towards prevention of HBV. Each knowledge question had three options, 'yes', 'no', and 'do not know', and was allocated 1 score for a correct and 0 score for a wrong answer. With a range of 0-20, a score of >11 was considered adequate knowledge, while ≤11 was considered poor. 10 There were 8 questions in the practice section. Each question was labelled 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 8 to a minimum of 0. The scale classified practice as good with score >5 and poor \le 5.10

Statistical tests were considered significant at p-values <5% (<0.05). Frequencies were calculated for descriptive analysis. Chi-squared tests were performed on categorical data to find the relationships between variables. Binary logistic regression was performed to identify the predictors of practices. Informed written consent was

obtained from all respondents after a full explanation of the nature and purpose of the study. SPSS (Statistical Package for Social Studies) version 22.0 (IBM Corporation, Chicago, IL, USA) was used for data entry and analysis.

RESULTS

For the total 204 respondents, the mean±SD age was 36.57±12.83 years. Among them, a female (60.8%) preponderance was observed. The highest majority (87.3%) of them were married. About 21.6% were illiterate, 34.8% had primary education, 19.1% had secondary education, and 24.5% had higher secondary and above education. Half of the respondents (50%) were homemakers, and others were laborers (19.6%), service providers (15.7%), or either business people or student (14.7%). About 40.7% had monthly income in the range of 10001-20000 taka. A highest majority of the respondents were Muslim (92.2%) and most (68.6%) of them belong to nuclear family (Table 1).

Table 1: Socio demographic characteristics of the study respondents (n=204).

Variables	N (%)				
Age (mean±SD), in years= 36.57±12.83					
18-29	69 (33.8)				
30-41	74 (36.3)				
42-53	36 (17.6)				
54-65	25 (12.3)				
Gender					
Female	124 (60.8)				
Male	80 (39.2)				
Marital status					
Unmarried	26 (12.7)				
Married	178 (87.3)				
Education					
Illiterate	44 (21.6)				
Primary	71 (34.8)				
Secondary	39 (19.1)				
Higher secondary and above	50 (24.5)				
Occupation					
Labor	40 (19.6)				
Homemaker	102 (50.0)				
Employment	32 (15.7)				
Others (business, student)	30 (14.7)				
Monthly income					
≤10000	70 (34.3)				
10001-20000	83 (40.7)				
>20000	51 (25.0)				
Religion					
Islam	188 (92.2)				
Other (Hinduism, Christianity)	16 (7.8)				
Family type					
Nuclear	140 (68.6)				
Joint	64 (31.4)				

The knowledge distribution of the subjects regarding hepatitis B is shown in Table 2. According to the descriptive analysis, the median score of knowledge and practice of the respondents about hepatitis B were 3 (0-11) and 4 (3-5) respectively. Out of 204 respondents,

there were 159 (77.9%) within the poor knowledge range whereas 45 (22.1%) showed adequate knowledge about hepatitis B. In regards to respondents' practice, there were 164 (80.4%) within poor practice range and only 40 (19.6%) demonstrated good practices.

Table 2: Respondents' knowledge towards hepatitis (n=204).

Hepatitis knowledge items	Yes	No	Don't know
	N (%)	N (%)	N (%)
Have you ever heard of a disease termed as hepatitis?	106 (52)	77 (37.7)	21 (10.3)
Have you ever heard of a disease termed as hepatitis B?	97 (47.5)	79 (38.7)	28 (13.7)
Is hepatitis B is a viral diseases?	65 (31.9)	37 (18.1)	102 (50.0)
Can hepatitis B affect liver function?	59 (31.9)	34 (16.7)	111 (54.4)
Can hepatitis B cause liver cancer?	45 (22.1)	31 (15.2)	128 (62.7)
Can hepatitis B affect any age group?	55 (27.0)	17 (8.3)	132 (64.7)
The early symptoms of hepatitis B are same like cold and flu (fever, running nose, cough)	42 (20.6)	27 (13.2)	135 (66.2)
Jaundice is one of the common symptoms of hepatitis B?	52 (25.5)	25 (12.3)	127 (62.3)
Are nausea, vomiting and loss of appetite common symptom of hepatitis B?	44 (21.6)	27 (13.2)	133 (65.2)
Are there no symptoms of the hepatitis B in some of the patients?	27 (13.2)	26 (12.7)	151 (74.0)
Can hepatitis B be transmitted by un-sterilized syringes, needles and surgical instruments?	73 (35.8)	16 (7.8)	115 (56.4)
Can hepatitis B be transmitted by contaminated blood and blood products?	59 (28.9)	15 (7.4)	130 (63.7)
Can hepatitis B be transmitted by using blades of the barber/ear and nose piercing?	69 (33.8)	18 (8.8)	117 (57.4)
Can hepatitis B be transmitted by unsafe sex?	54 (26.5)	17 (8.3)	133 (65.2)
Can hepatitis B be transmitted from mother to child?	63 (30.9)	15 (7.4)	126 (61.8)
Can hepatitis B be transmitted by contaminated water/food prepared by person suffering with these infections?	39 (19.1)	37 (18.1)	128 (62.7)
Is hepatitis B treatable?	69 (33.8)	13 (6.4)	122 (59.8)
Can hepatitis B be self-cured by body?	12 (5.9)	67 (32.8)	125 (61.3)
Is vaccination available for hepatitis B?	77 (37.7)	20 (9.8)	107 (52.5)
Is specific diet is required for the treatment of hepatitis B?	29 (14.2)	27 (13.2)	148 (72.5)

Table 3 shows the summary results of Chi-square (χ^2) analysis between level of knowledge and different types of practices among the respondents. A significant relationship existed between knowledge and hepatitis B screening, though about 89.9% and 57.8% of respondents with poor and adequate knowledge, respectively, never went for hepatitis B screening. Respondents with poor (81.8%) and adequate (57.8%) knowledge groups stated a negative immunized status against hepatitis B, and the relationship was significant. More than 70% of the respondents from poor (71.7%) and adequate (88.9%) knowledge groups asked for a new syringe when required, a significant relationship. The relationship between knowledge and asking for a new blade and clean, safe equipment before use was not significant, 30.2% and 15.6% of respondents with poor and adequate knowledge groups either never asked the barber to use new blade, or for clean and safe equipment for nose and ear piercing.

About 56.0% and 75.6% of respondents of poor and adequate knowledge groups asked for screening of blood and blood products before transfusion; the relationship between knowledge and asking for screening of blood and blood products before transfusion was significant. A vast majority of the respondents from poor (87.4%) and adequate (100%) knowledge groups agreed that they will go for further investigation and treatment if they get infected with HBV, a significant relationship. Almost four of ten respondents from poor (37.1%) and adequate (44.4%) knowledge groups revealed that they avoid meeting with a person infected with HBV, and the relationship was not significant. About 90.6% of the respondents from the poor and adequate (68.9%) knowledge group did not participate in any hepatitis B related health education program. The rest of the respondents from each knowledge group participated in the aforesaid program, a significant relationship.

Table 3: Summary results of χ^2 analysis between knowledge category versus different types of practices (n=204).

Hepatitis B practice items	Knowledge of	Knowledge of hepatitis B			
	Poor N (%)	Adequate N (%)	Significance		
Have you done screening for hepatitis B?					
Yes	16 (10.1)	19 (42.2)	$\chi^2 = 25.521$		
No	143 (89.9)	26 (57.8)	p<0.001		
Have you got yourself vaccinated against hepatitis B?					
Yes	29 (18.2)	19 (42.2)	$\chi^2 = 11.212$		
No	130 (81.8)	26 (57.8)	p=0.001		
Do you ask for a new syringe before use?					
Yes	114(71.7)	40 (88.9)	$\chi^2 = 5.602$		
No	45 (28.3)	5 (11.1)	p=0.018		
Do you ask for screening of blood before transfusion?					
Yes	89 (56.0)	34 (75.6)	$\chi^2 = 5.617$		
No	70(44.0)	11 (24.4)	p=0.018		
Do you ask your barber to change blade/or for safe equipment	for ear and nose	piercing?			
Yes	111 (69.8)	38 (84.4)	$\chi^2=3.814$ p=0.051		
No	48 (30.2)	7 (15.6)			
In case you are diagnosed with hepatitis B, would you go for further investigation and treatment?					
Yes	139 (87.4)	45 (100)	Fisher's exact p=0.009		
No	20 (12.6)	0 (0.0)			
Do you avoid meeting hepatitis B patients?					
Yes	59 (37.1)	20 (44.4)	$\chi^2 = 0.796$		
No	100 (62.9)	25 (55.6)	p=0.372		
Have you ever participated in health education program related to hepatitis B?					
Yes	15 (9.4)	14 (31.1)	$\chi^2 = 13.515$		
No	144 (90.6)	31 (68.9)	p<0.001		

Table 4: Binary logistic regression for estimating odds ratio and 95% confidence interval for practicing 'good' towards HBV (with 'poor' practice as the reference category) by the selected factors.

Independent variable	0	P value	011 4	95 % CI for 1	95 % CI for Exp (β)	
	β		Odds ratio	Lower	Upper	
Education level						
Illiterate	Reference		1		•	
Primary	0.558	0.510	1.748	0.332	9.211	
Secondary	1.733	0.038	5.659	1.100	29.122	
Higher Secondary and above	1.002	0.250	2.724	0.494	15.016	
Occupation						
Labour	Reference		1			
Homemaker	0.234	0.742	1.264	0.313	5.104	
Employment	1.045	0. 175	2.845	0.627	12.906	
Other (businessman, student)	0.526	0.518	1.692	0.344	8.327	
Type of family						
Nuclear	Reference		1			
Joint	-0.857	0.078	0.424	0.163	1.102	
Knowledge score	0.095	0.007	1.100	1.026	1.180	
Constant	-3.167	0.001	0.042			

 β for standardized regression coefficients; Practice was taken as a dependent variable whereas other variables were taken as independent variables.

In multivariate analysis, total knowledge and secondary level education were significant independent predictors of good practice regarding hepatitis B. OR for knowledge: 1.10 (95% CI: 1.03 to 1.18); OR for secondary level education: 5.66 (95% CI: 1.10 to 29.12) (Table 4).

DISCUSSION

Few studies regarding the relationship between knowledge and practices are available in Bangladesh. The study was undertaken in order to assess the relationships between knowledge and practices towards hepatitis B among the patients and their attendants in the OPD of a selected primary healthcare facility in Bangladesh.

Results of the study revealed poor knowledge and practices towards hepatitis B. The low knowledge included lack of essential information of respondents regarding etiology, symptoms, transmission, management, and prevention strategies. This finding is comparable with another studies in Bangladesh where the overall knowledge of more than two-thirds of the respondents were reported low.11 Other studies also reported that the level of the knowledge of hepatitis B is low among different populations, in several areas worldwide. 10,12,13 On the contrary Elbur Al et al in Saudi Arabia reported that respondents had adequate knowledge towards transmission, vaccination, and treatment of hepatitis B.¹⁴ Possible reasons that can be attributed to this difference of response are demographic variation of the study population and study location.

Further findings indicated that more than half of the respondents were not familiar with 'the disease or virus called hepatitis B'. This result is in line with a study conducted among Cambodian women living in Seattle, Washington.¹⁵ Majority of the respondents didn't know that HBV can cause cancer, contradicting with this result, a study was conducted among Chinese immigrants to the United States regarding the knowledge and practices towards hepatitis B, which reported that majority of the respondents knew that HBV can cause liver cancer.16 Regarding modes of disease transmission, only one third of them knew that HBV can be transmitted by contaminated blood and blood products and by using blades of the barber/ear and nose piercing. This is similar to the findings of Rahman et al where only 20% of the Bangladeshi married women were aware about the mode of transmission of HBV.¹⁷ Our results are also consistent with similar studies in Ghana and in Saudi Arabia. 14,18 Such gaps in knowledge have a negative impact on the respondents' practices that should be taken to prevent contraction or transmission of the disease.

This study revealed that only 30.9% and 26.5% of the respondents knew that the disease can be transmitted from mother to child and by unsafe sex respectively. Similar result was found in a study conducted in Malaysia by Nazri et al in 2019, which reported that university students had poor knowledge regarding vertical (30.0%) and sexual transmission (29.2%).¹⁹ In contrast, these percentages were lower than those reported in another study, whereby approximately 58.8% and 50.8% of the respondents knew that the disease can be transmitted during childbirth and sexual intercourse, respectively.¹³ Moreover, majority of the sample did not know that HBV could be prevented by vaccination, and this match with a study conducted in Bangladesh, however, this percentage is high compared to that reported by Wedhaya et al where only 32% of the Saudi population were unaware about the preventive measures of HBV.11,20 In addition, very few respondents (18.1%) of our study knew that hepatitis B is not transmitted by eating food that has been prepared by an infected person. This result is in line with a study conducted among Chinese immigrants to the United States.¹⁶

Respondents in this study also showed poor practice toward HBV. Similar result was reported from Malaysia that indicated their respondents had poor practices (76.6%) toward HBV infection. It was unfortunate to note that majority of the respondents hadn't been screened (82.8%) or vaccinated (76.5%) for hepatitis B infection. This finding is in line with two other studies conducted in Bangladesh. Similar results were reported even among adult populations in Saudi Arabia where 64.9% of the respondents did not do the screening and Asian Americans in California where only 31% reported having been vaccinated against HBV.

The interesting result in our study is that more than three fourth of respondent (75.5%) had good practice dealing with asking for a new syringe before using, however, they had little knowledge about transmission routes of HBV. They might be practicing this for hygiene reasons. The other interesting result is that majority of respondents (73.0%) had good practices which are essential to prevent or to decrease the risk of HBV transmission, namely asking for a new blade and equipment before use in barber shops and beauty salons. Similar results have been reported by Ibrahem et al in Iraq.²⁴ This finding is, however, at variance with a study done in Rawalpindi, Pakistan where 87.2% respondents with low knowledge of hepatitis never asked for a new syringe when required, and 77.2% did not ask their barber/nail salon to change the equipment which were used before. 25 Further findings indicated that 60.3% of respondents agreed with the statement that they asked for screening of blood and blood products before transfusion. This is similar to the findings of Abdi et al.21 On the other hand, majority of the respondents did not participate in any health education program related to HBV, which was similar to the results of the study in Yemen.²⁶ It was observed that the respondents with adequate knowledge had showed good practice regarding HBV screening (p<0.001), HBV vaccination (p=0.001), screening of blood before transfusion (p=0.018), demanding new syringe before each use (p=0.018) and participation in a hepatitis B related health education program (p<0.001). Furthermore, all the respondents with adequate knowledge group agreed with the statement that they will go for further investigation and treatment if they get infected with HBV (p=0.009). In our study, we also sought factors associated with practices. Total knowledge and secondary level of education were significant predictor of having good practice and this was matched with the same study conducted in Saudi Arabia.²³

The current study was conducted at a public health facility in which majority of the people attending were illiterate and poor, hence more prone to have been unaware of the diseases. Also, the study being a center and outpatient-based one, its results can't be generalized for the whole population. Despite the limitations, the findings of this study highlighted that lack of imperative knowledge of hepatitis B in respondents was the main reason of poor practices.

CONCLUSION

Our results suggest that there is lack of knowledge and practices towards hepatitis B among study population and better knowledge is associated with increased preventive practices. Given the current low levels of hepatitis B knowledge and practice in our study population, along with the strong associations between the two, it is clearly important to increase both knowledge and preventive practices. Thus, there is a need for increased HBV education and improved community-based interventions to prevent HBV-related liver disease. Health education can be provided through different educational platforms, which can achieve through public health campaigns focusing on less educated people.

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