

## Knowledge on Hepatitis B among Secondary Level Students at Birtamode, Jhapa

Babita Khadka<sup>1</sup> Saraswati Basnet<sup>2</sup>

### Abstract

*Hepatitis B is a silent epidemic as it is a potentially life-threatening liver infection caused by the hepatitis B virus (HBV) and a major global health problem. The aim of this study was to assess the level of knowledge on hepatitis B among secondary level students at Birtamode, Jhapa. Descriptive cross-sectional research design was used. Non-Probability purposive proportionate sampling technique was used. Total sample size was 166 respondents. Self-developed, self-administered and semi-structured questionnaire was used for collecting a data. Descriptive and inferential statistics was used for analyzing the study. The findings of the study showed that the mean age of respondents was 14.52 years in which 57.8% were male. Similarly, 55.4% students were from grade 9 and 44.6% were from grade 10. Almost all (93.4%) of respondents mentioned book as major source of information. Among the studied respondents, 12.6% had good knowledge, 47% had fair knowledge and 40.4% had poor knowledge on hepatitis B. The level of knowledge was associated with study grade of respondents ( $p=0.007$ ). The study concludes that fair level of knowledge regarding hepatitis B among respondents and level of knowledge was significant with study grade and almost of respondents gained information from book.*

**Keywords:** Liver, Hepatitis B, Knowledge, Secondary level students

### Introduction

Hepatitis is an inflammation of the liver. The condition can be self-limiting or can progress to fibrosis (scarring), cirrhosis or liver cancer. Hepatitis viruses are the most common cause of hepatitis in the world but other infections, toxic substances (e.g. alcohol, certain drugs), and autoimmune diseases can also cause hepatitis. There are 5 main hepatitis viruses, referred to as types A, B, C, D and E. These 5 types are of greatest concern because of the burden of illness and death they cause and the potential for outbreaks and epidemic spread. In particular, types B and C lead to chronic disease in hundreds of millions of people and, together, are the most common cause of liver cirrhosis and cancer {World Health Organization (WHO), 2016}.

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<sup>1</sup> Tribhuvan University, Institute of Medicine, Biratnagar Nursing Campus, Biratnagar.

<sup>2</sup> Lecturer at Tribhuvan University, Institute of Medicine, Biratnagar Nursing Campus, Nepal

Email:basnetsaru64@gmail.com

Viral hepatitis caused 1.34 million deaths in 2015, a number comparable to deaths caused by tuberculosis and Human Immuno Deficiency Virus (HIV). But while mortality from tuberculosis and HIV has been declining, deaths from hepatitis are on increasing trend (WHO, 2017).

Hepatitis B is an infectious disease caused by the hepatitis B virus (HBV) that affects the liver. It can cause both acute and chronic infections. Many people have no symptoms during the initial infection. Some develop a rapid onset of sickness with vomiting, yellowish skin, tiredness, dark urine and abdominal pain. Often these symptoms last a few weeks and rarely does the initial infection result in death. It may take 60 to 180 days for symptoms to begin (Suddarth, 2015).

According to Jyoti (2013), HBV transmission possess a major challenge to both patients and health workers especially those who frequently come into contact with blood. Apart from health workers, some people in the general public are more prone to contracting hepatitis B than others e.g., drug users, people who pierce or tattoo their bodies and unprotected sex. In most countries where HBV prevalence is low, transmission usually occur during adolescence or young adulthood as a result of the unsafe injections and unprotected sexual activities.

Globally, Prevalence of hepatitis B is highest in the African (6.1%) and Western Pacific regions (6.2%). In the South-East Asia Region and the European Region, an estimated 3.3% & 2.0% of the general population is infected respectively. 0.7% of the population of the Region of the America's is infected (WHO, 2017).

Prevalence of hepatitis B is found to be intermediate among the neighboring countries of Nepal (India, Bangladesh & Bhutan) that is 4.2%, 6.9% and 6.1% respectively. Whereas, the prevalence of hepatitis B is 0.8-1.5% in Nepal. Countries with very high prevalence rate usually have vertical transmission as the main route of transmission which is mostly found during childhood. Countries with intermediate prevalence rates normally have horizontal transmission as its major route where the disease is transmitted through sexual contact or through injecting of drug (WHO, 2013).

According to Shrestha (2016), hepatitis B accounted for nearly 3% of sporadic acute hepatitis cases, 47% of liver cirrhosis, and 69% of hepatocellular carcinoma. It is estimated that nearly 260,000 individuals are chronically infected with HBV in the country and a majority of them are unaware of their infection.

Similarly, the study conducted by Thabit, Ali & Bahadeli (2017) in Baghdad showed that the knowledge of the undergraduate Medical And Health College students ranged from poor to moderate regarding the mode of transmission and people at risk to have the disease, while it was good in all fields of disease epidemiology and very good for prevention and control measures about hepatitis B.

## **Methods and Materials**

Descriptive analytical cross-sectional research design was used to assess the Knowledge on hepatitis B among secondary level students to explore the knowledge on related topic. It is cross-sectional as information will be collected from the respondents in single time period. This study was conducted in Balmiki Education Foundation at Birtamode municipality ward number-1. This is the higher secondary private school in

Jhapa district of Mechi Zone in the Terai Region. The study population was both male and female students studying in grade 9 and 10 of the private school at Birtamode. Probability simple random (lottery) technique was used to select the grade 9 and 10 among grade. Total population of students in grade 9 and 10 was 360 in which grade 9 consists of 199 students and grade 10 consist of 161 students. The desired sample size was 161 so on the basis of the proportion 89 students was included from grade 9 and 72 students was included from grade 10. For selection of samples, lottery method of simple random techniques was used. Semi-structured questionnaire was used on the basis of objectives of research after reviewing various literatures and consulting subject expert and physician expert of related area. Tools were divided into socio-demographic information (age, sex, ethnicity, religion, study grade educational level of parents) and knowledge on hepatitis B(includes definition, cause, mode of transmission, high risk group, sign and symptoms, preventive measures, complications, vaccine availability and treatment availability).The knowledge section included 13 semi-structured questions with multiple choice, multiple response and dichotomous (Yes/No) question. Each knowledge related question was scored 1 mark but in case of multiple responses each correct response carried 1 mark and the scoring was based on classification of knowledge according to:Good knowledge: >75%,fair knowledge: 50-75% and or knowledge: <50%.Validity of the instrument was maintained by extensive literature review & consulting with subject expertise and research advisor and physician expert of related field. Pretest was be done on 10% of sample size in similar setting i.e. Lilliput Premier Elementary School for corrective purpose. Ethical principle was maintained throughout the study and approval was taken from concern authority of Nursing Campus Biratnagar. Permission to conduct study was taken from Principal of Balmiki Education Foundationand concerned school authority. Written informed consent was taken from each

## Results

**Table 1**

*Socio-Demographic Profile of Respondents (n=166)*

Variables	Number	Percentage
Age-groups	82	49.4
12-14	84	50.6
15-17		
Mean $\pm$ SD (14.5 $\pm$ 0.782)		
Sex	96	57.8
Male	70	42.2
Female		
Study Grade		
Grade 9	92	55.4
Grade 10	74	44.6
Ethnicity		
Dalit	3	1.8
Janajati	45	27.1
Madhesi	2	1.2
Muslim	3	1.8
Brahmin/Chhetri	108	65.1
Marwadi	3	1.8
Bengoli	2	1.2
Religion		
Hindu	136	81.9
Buddhist	7	4.2
Christian	4	2.4

Islam	2	1.2
Kirat	17	10.2
Father's education		
Literate	166	100
Informal education	6	3.6
Primary	6	3.6
Secondary	55	33.1
Higher level	99	59.6
Mother's education		
Literate	166	100
Informal education	7	4.2
Primary	14	8.4
Secondary	65	39.2
Higher level	80	48.2

Table 1 show that the respondents were between age group of 12-14 years and 50.6% of them between 15-17 years. Mean age of the respondents was 14.52 years with standard deviation of 0.782 in which 57.8% were male. Similarly, 55.4% students were from grade 9 and 44.6% were from grade 10. More than half (65.1%) of the respondents were Brahmin/ Chhetri. most of the (81.9%) students were Hindu. Concerning the educational status of parents 100% respondent's parents were literate.

**Table 2**

*Knowledge on meaning, Source of Information Causative Agent, Transmission and Organ Affected on Hepatitis B (n=166)*

Variables	Number	Percentage
Meaning of Hepatitis B		
Correct	130	78.3
Incorrect	36	21.7
Source of information*		
Book	155	93.4
Teachers	131	78.9
Internet	89	53.6
Friends	59	35.5
Television	54	32.5
Newspaper	43	25.9
Radio	32	19.3
Causative agent		
Virus	128	
Bacteria	30	77.1
Don't know	8	18.1
Hepatitis B is transmitted		4.8
Yes	128	77.1
No	38	22.9
Organ affected		
Liver	132	79.5
Brain	19	11.4
Kidney	9 <sup>4</sup>	5.4
Heart	6	3.6

\*Multiple Responses (each response considered as 100%)

Table 2 depicts that, more than half (78.3%) of the respondents gave correct answer on meaning of hepatitis B. Almost all (93.4%) of respondents mentioned book as major source of information. Three fourth of the respondents (77.1%) were known about causative agent and is transmitted from person to person about hepatitis B.

**Table 3**

*Knowledge on Mode of transmission, Risk group and Sign and symptoms of Hepatitis B\* (n=166)*

Variables	Number	Percentage
<b>Modes of transmission</b>		
Infected blood transfusion	116	69.9
Unsafe sexual contact	104	62.7
Sharing needle to inject drug.	102	61.4
Infected pregnant mother to child	88	53
Tattooing/piercing	45	27.1
Mosquito bite	40	24.1
Body fluid of infected person	38	22.9
Sharing toilet with infected person	16	9.6
Wrong	2	1.2
<b>Risk group</b>		
Infected blood receivers	137	92.5
Babies born with infected mothers	108	65.1
Person with multiple sexual partners	101	60.8
Intravenous drug users	83	50
Health workers	10	6
Don't know	4	2.4
<b>Sign and symptoms</b>		
Loss of appetite	126	75.9
Fever	93	56
Vomiting	84	50.6
Yellowish discoloration of eyes	51	30.7
Abdominal pain	51	30.7
Joint pain	19	11.4
	6	3.6

\*Multiple Responses (each response considered as 100%)

Table 3 represents that, 69.9% of the respondent mentioned infected blood transfusion as mode of transmission for hepatitis B. Almost (92.5%) all of respondents mentioned infected blood receivers were risk group for hepatitis B. Similarly most of the respondents (75.9%) mentioned loss of appetite, followed by vomiting 50.6%, yellowish discoloration of eyes and abdominal pain 30.7%, 30.7% respectively.

**Table 4***Knowledge on Complications and Prevention of Hepatitis B\* (n=166)*

Variables	Number	Percentage
Complications	107	
Liver damage	86	64.5
Death	73	51.8
Liver Cancer	12	44
Kidney damage	9	7.2
Heart damage	10	5.5
Don't know		6
Prevention		
Hepatitis B vaccination	123	
Avoiding sharing needle	116	74.1
for drug use		69.9
Avoiding unsafe sex	109	
Avoiding tattooing and	48	
piercing		65.7
Using mosquito net		28.9
Avoiding sharing razor and	44	26.5
tooth brush	41	24.7
Don't know	4	2.4

\*Multiple Responses (each response considered as 100%)

Table 3 reveals that 64.5% of respondents mentioned liver damage as major complication whereas 6% of respondents were unknown about complication of hepatitis B. Similarly, 74.1% of respondents stated out hepatitis B vaccination and 2.4% of them were unknown about preventive major for hepatitis B.

#### ***Knowledge on Vaccine and Treatment Availability of Hepatitis B***

Three fourth (75.3%) of respondents were known about availability of vaccine and more than half (69.3%) of respondents were known about vaccine availability against hepatitis B in Nepal. Similarly more than half (57.8%) of the respondents were known about availability of treatment whereas less than half (49.4%) of respondents were known about treatment availability in Nepal.

**Table 6***Level of Knowledge on Hepatitis B (n=166)*

Variables	Number	Percentage
Good	21	12.6
Fair	68	47
Poor	67	40.4

Table 6 shows that 12.6% have good knowledge and 47% have fair knowledge and 40.4% have poor knowledge on hepatitis B.

**Table 7**

*Association between Level of Knowledge and Selected Demographic Variables (n=166)*

Variables	Level of knowledge		p-value
	Adequate** f (%)	Inadequate f (%)	
Age-groups	48 (28.9%)	34 (20.5%)	0.449
12-14	51 (30.7%)	33 (19.9%)	
15-17			
Sex	58(34.9%)	38 (22.9%)	0.468
Male	41(24.7%)	29 (17.5%)	
Female			
Study Grade	46 (22.7%)	46 (22.7%)	0.007*
Grade 9	53 (31.9%)	21 (12.7%)	
Grade 10			
Ethnicity	68 (41%)	31 (18.7%)	0.153
Brahmin/Chhetri	40 (24.1%)	27 (16.3)	
Others***			
Religion	83 (50.4%)	53 (31.9%)	0.282
Hindu	16 9.6%)	14 (8.4%)	
Others****			
Father's education	37 (22.3%)	30 (18.1%)	0.420
Lower level*****	62 (37.3%)	37 (22.3%)	
Higher level			
Mother's education	49 (29.5%)	37 (22.3%)	0.528
Lower level	50 (30.1%)	30 (18.1%)	
Higher level			

\* Significant association  $p$  value  $< 0.05$

\*\* (good and fair knowledge), \*\*\* (Dalit, Janajati, Madhesi, Muslim and Marwadi)

\*\*\*\* (Buddhist, Christian, Islam and Kirat), \*\*\*\*\* (Informal, Primary and Secondary level), \*\*\*\*\* (Chi-square test)

Table 7 reveals that the significant association between levels of knowledge with selected demographic variable. There is significant association between level of knowledge with the study grade ( $P=0.007$ ) but other variable is not associated with level of Knowledge.

## Discussion

The findings of this study showed that among 166 respondents, mean age was 14.52 years which is similar to the findings of the study on vulnerabilities for hepatitis B: knowledge, attitudes and practices of school adolescents in Brazil (Branco et.al, 2017) in which mean age of the respondents was 14.4 years.

This study showed that more than half (57.8%) respondents were male and most of the respondents were from lower grade (grade 9) which is similar to findings of the study conducted on impact of information sources on the knowledge of adolescents about hepatitis B in Pakistan (Thaver& Kamal, 2010) in which more than half (57%) of respondents were male but contradictory regarding study grade in which most (55%) of respondents were from higher grade (grade 11-12) as this study was conducted from grade 9-12 whereas current study was conducted only among grade 9 and 10 students and sample was taken on the basis of proportion This study showed that 65.1% respondents were Brahmin/Chettri which is consistent with data of (Statistics, 2012) in Jhapa where 40% of the populations were Brahmin and Chhetri. This study showed that most of the respondents (81.9%) were Hindu which is supported by the study conducted on hepatitis B related knowledge and perception of nursing students: an institutional based study in Kathmandu, Nepal (Paudel et al., 2015) in which almost(87.6%) of the respondents were Hindu.

This study showed that more than half (59.1%) of respondent's father had achieved higher level education whereas 48.2% of the respondents mother had achieved higher level of education which is supported by the study conducted on knowledge, attitude and practice of male secondary school students on hepatitis B in Abha City, Kingdom of Saudi Arabia (Al-Gashanin & Mostafa, 2013) in which 40% of the respondents father had achieved higher level of education but contradict with mothers education in which 28.5% of the respondents mother had achieved primary/intermediate level of education it might be due to different in context as this study was conducted in Muslim country where most of the girls are not encouraged for higher education.

The findings of this study presented that most (93.4%) of the respondents mentioned book as major source of information which is supported by the findings of the study conducted on effectiveness of education intervention on knowledge regarding hepatitis-B among secondary level school students of Carmel High school in Dharan-18 (Syangtan, 2012), in which more than half (64.1%) respondents mentioned book/teacher as major source of information.

The findings of the present study showed that level of knowledge is not significant with age group, fathers and mothers' education which is supported by the findings of the study conducted in Abha City, Saudi Arabia (Al-Gashanin & Mostafa, 2013) which showed that level of knowledge was not significant with age group, father's education or mother's education.

The findings of this study revealed that sex is not significant with level of knowledge which is supported by the findings of the study conducted on assessing the level of awareness on viral hepatitis among 150 educated people in Ghana with 62% of females and 38% males, which showed that knowledge scores were not significant with sex (Osei Akumiah & Akuamoah Sarfo, 2015).

The findings of the current study reflect that level of knowledge is significant with grade but not significant with religion of respondents which is supported by the findings of the study conducted in Kathmandu, Nepal (Paudel et al., 2015) which showed that level of knowledge is significant with academic grade but not significant with religion.

This study showed that level of knowledge is not significant with ethnicity which is contradictory with the findings of the study conducted on assessment of awareness and knowledge of hepatitis B among the residents of Puchong, Malaysia (Pathmanathan &



Lakshmanan, 2014) in which level knowledge is highly significant with ethnicity as it might be due to difference in sample size and setting.

The findings showed that 47% have fair knowledge which is supported by the study conducted in Abha City, Saudi Arabia (Al-Gashanin & Mostafa, 2013) in which 41.6% of the respondents had fair knowledge and by study conducted on knowledge about hepatitis b infection among medical students in Erbil city, Iraq (Othman, Saleh & Shabila, 2013) which showed that 45% of the respondents had fair level of knowledge.

## Conclusion

The finding of the study concludes that the fair level of knowledge regarding hepatitis B among respondents and level of knowledge was significant with study grade but other variable is not associated with level of Knowledge. Although less than half of the student's level of knowledge was still poor so awareness program may enhance the knowledge.

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