

## Public Awareness of Hepatitis B Infection in South Okkalapa Township in Yangon

Phyu Phyu Ei<sup>1</sup> and Nang Ohnmar Aye<sup>2</sup>

### Abstract

Hepatitis B virus is a serious public health problem that affects people of all ages around the world. Myanmar is regarded as a country with a high endemicity of HBV infection. This study is descriptive research based on primary data information on Hepatitis B infection prevention and control activities in Myanmar. It aims at assessing the awareness of people in responses to Hepatitis B by conducting survey on their knowledge and practice. Ministry of Health, Myanmar is now collaborating and cooperating with national, regional, and international partners to scale up response to fight against Hepatitis B. It is important to continue and enhance prevention and control efforts and implement more effective prevention and control activities in order to combat this public health problem.

**Key words:** Hepatitis B, Public awareness, public health problem

### 1. Introduction

Hepatitis means inflammation of the liver. Although drugs, toxins, and many other exposures also can inflame the liver, the most common cause of hepatitis is viral. In general hepatitis viruses are identified by the letter A through G. Hepatitis B is infected from blood, sexual contact, both heterosexual and homosexual, close personal contact and can easily be transmitted from mother to infant at delivery.

Hepatitis B virus (HBV) infection is a global health problem and it has been estimated by the World Health Organization (WHO) that 2,000 million are chronically infected carriers. Of the carriers, 25% are at risk of serious illness and eventual death from cirrhosis or hepato-cellular carcinoma (HCC). The highest rates of Hepatitis B occur in the developing world: Sub Saharan Africa, most of Asia (including Myanmar) and the Pacific Rim, the Amazon, the Southern parts of Eastern and Central Europe, portions of the Middle East and the Indian subcontinent.

Therefore under the guidance of government, Ministry of Health has been functioning the preventive and control measures. These include building up the Hepatitis B vaccine factory, providing the Hepatitis B vaccination services at the cheap price by Department of Medical Research (Lower Myanmar), providing the information concerning the knowledge of HBV through media. However, the infectious disease Hepatitis B cannot be controlled by health sector alone, public awareness plays a crucial role. This study will find out the awareness of people in response to their knowledge and practice by using people in South Okkalapa Township as sample scopes.

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<sup>1</sup> Professor, Department of Applied Economics, Yangon Institute of Economics

<sup>2</sup> Candidate, MPA 8<sup>th</sup> Batch

The objectives of this study are to review the prevention and control activities in Myanmar and to assess the public awareness of Hepatitis B Infection. Descriptive method is used in this study. In order to find out the public awareness of Hepatitis B infection in South Okkalapa Township, a survey was conducted in cooperation with the local authorities.

## **2. History of Hepatitis B**

Since ancient times, people have known about hepatitis and the jaundice that sometimes accompanies the infection. During 1942 in the United States, there was an outbreak of Hepatitis in military personnel who were given vaccine to protect them from yellow fever. It was unknown at the time that this vaccine contained a human blood component which was contaminated with hepatitis B virus.

In the mid 1950s and 1960s Dr. Saul Krugman's studies showed that the outbreaks of hepatitis were caused by two separate strains of virus. One had a short incubation period, was transmitted primarily by fecal-oral contamination, did not enter a chronically infected stage, and was later determined to be hepatitis A. The other had a long incubation period, was transmitted primarily by contact with contaminated blood, did enter chronic stage in a small proportion of patients, and was later determined to be hepatitis B.

During the 1960s, Dr. Baruch Blumberg was researching genetic differences by examining the blood of people around the world who had received transfusions. When people received blood, they produce antibodies (special types of proteins that defend against foreign proteins). Dr. Blumberg discovered antibodies in the blood of a patient with hemophilia living in New York that reacted with the blood of an Australian aborigine. He named the antigen after Australia, calling it the Australian or Au antigen. Further research determined that the Australia antigen was the surface antigen of hepatitis B.

## **3. Prevalence and Mode of Transmitted for HBV Infection in Myanmar**

Myanmar is regarded as a country with a high endemicity of hepatitis B virus infection; it considered an important health problem. One of the earliest reports on hepatitis syndrome in Myanmar was based on the recordings made during the War World II period. However, the first study of HBV infection was based on patients hospitalized at the Rangoon (now Yangon) General Hospital during 1967.

Hepatitis B infection in Myanmar was reported in both lower and upper Myanmar where 10.4% of the populations were found to be seropositive to hepatitis B surface antigen (HBs Ag). Subsequent studies carried out among different population groups revealed HBsAg carrier rate of 10% to 12% and hepatitis B virus marker positivity rate was 35% to 60%.

Since 1981, mother infant transmission studied that perinatal transmission is the main mode of spread in Myanmar, it has been estimated that 61.1% of infants born to HBs Ag positive

mothers become carriers and prevalence of HBsAg in pregnant mothers is 8%. Total viral hepatitis in patients for the whole country is 10,000 to 30,000 annually.

Hepatitis B virus is highly associated with chronic liver diseases, HBs Ag positive in 40% is chronic hepatitis patients, HBs Ag positive in 40% is liver cirrhosis and HBsAg positive in 60% is Hepatocellular carcinoma (HCC). Myanmar is included in the top five countries with the highest incidence of HCC in the worldwide (25.5 per 100,000 populations for males, 8.8 per 100,000 populations for females). According to age specific prevalence study in Myanmar since 1995, 9% of babies less than one year of age were positive for HBs Ag.

Thus, health authorities in Myanmar have taken various steps to control and manage hepatitis B infections. The Head of State has also clearly stated that emphasis is to be placed on research and development in every field to improve human resource development and material development. Since the early 1970s, DMR has actively participated in activities towards the control of hepatitis B infections in Myanmar. Activities to assist in the diagnosis, management and prevention of hepatitis B infections have been carried out and knowledge dissemination and technology transfer had been carried out at various phases.

Vertical transmission of HBV infection has been shown that 25% of children born to hepatitis B surface antigen positive mothers and up to 60% of children born to HBs Ag and HBe- Ag positive mothers became HBs Ag positive within the first year of life. DMR study confirms that peri-natal transmission is main mode of transmission in Myanmar.

Horizontal transmission is through sharing of razors and toothbrushes. Several specific modes of transmission included sexual contact, parenteral drug use, occupational exposures, household contact, recipient of unsafe blood and certain blood products.

In Myanmar, the prevalence of HBs Ag among the novices and monks of a monastery has been reported that it might be due to the common sharing of razors (or thin-done-dah) used for shaving the hair periodically. The occupational risk is highlighted by laboratory workers.

There are two types of hepatitis B vaccine licensed in Myanmar. The first type is manufactured from the plasma of chronically infected persons and the other type is produced by recombinant DNA technology.

#### **4. Awareness of South Okkalapa Township People in HBV infection**

For conducting the survey, total 300 people of age 16-70 years; each 100 people from each quarter of South Okkalapa Township were taken as samples and asked questionnaires of knowledge and practice concerning HBV.

**Table (1) Base line characteristics of candidate**

<b>Character</b>	<b>No. of candidates</b>	<b>Percentage</b>
<b>Sex</b>		
Male	108	36.0
Female	192	64.0
<b>Age</b>		
16-20	52	17.3
21-40	128	43.0
41-70	120	40.0
<b>Marital Status</b>		
Single	167	55.7
Married	133	44.3
<b>Education Level</b>		
1	4	1.3
2	11	3.7
3	58	19.3
4	223	74.3
5	4	1.3
<b>Occupation</b>		
1	130	43.3
2	49	16.3
3	70	23.3
4	30	10.0
5	9	3.0
6	12	4.0

**Source: Survey data**

Knowledge questionnaires include questions about the nature of the virus, mode of transmission, prevention and treatment measures. Practice questionnaires include question about testing for HBV infection, vaccination, vaccination of children, preventive measures and social dealing between infected people and community.

A survey of knowledge and practice varying with age, sex, education, occupation and marital status was accessed. The sample is composed of 108 male and 192 female. The age limit is from 16 to 70. Starting point is set as 16 years for their considerable maturity and ability to enter work. The end point is set as 70 because over 70s have poorer memory and may be confused in their answers.

There are three age groups as young, medium and elder age groups, 52 people in young age group (16-20 years), 128 people in medium age group (21-40 years), and 120 people in elder age group (41-70 years). There are 167 unmarried people and 133 married people. In the young age group (16-20), all are unmarried, and in the medium age group (21-40) few are married. In the elder age group (41-70), majority are married.

There are five groups of education levels 1,2,3,4 and 5. Education level 1 is for primary school level and there are (4) people in it. Education level 2 is for middle school level and there are (11) people. Education level 3 is for high school level and contains (58) people. Education level 4 is for university/graduate level and there are (223) people and the last education level 5 is for post graduate level and having (4) people in it. The largest group is education level 4 and the second largest group is education level 3. The level 1 and 5 have equal number of people. There is no illiterate person in the survey group.

According to occupation, six groups are divided as group 1 with 130 of dependent people, group 2 with 49 people with odd jobs, group 3 with 70 government employees, group 4 with 30 company staffs, group with 9 business owners group 6 with 12 retired people. All are in common earning steady income.

**Table (2) Knowledge score according to Age-group**

<b>Score</b> <b>Age Group</b>	<b>Low (0-6)</b>	<b>Medium (7-12)</b>	<b>High (13-19)</b>	<b>Total</b>
16-20	3 (5.77%)	34 (65.38%)	15 (28.85%)	52
21-40	4 (3.13%)	55 (42.97%)	69 (53.91%)	128
41-70	3 (2.5%)	46 (38.33%)	71 (59.16%)	120
<b>Total</b>	<b>10</b>	<b>135</b>	<b>155</b>	<b>300</b>

**Source: Survey Data**

The knowledge levels among by respondents concerning with HBV in different age groups are shown in Table (2). According to the knowledge level, 71 respondents in age group (41 – 70) have high level of correct knowledge score. 69 respondents in age group (21-40) have high level of knowledge score. 15 respondents in age group (16 – 20) have 29% level of knowledge score.

**Table (3) Practice score according to Age-group**

<b>Score</b> <b>Age Group</b>	<b>Low (0-3)</b>	<b>Medium (4-6)</b>	<b>High (7-10)</b>	<b>Total</b>
16-20	2 (3.85%)	12 (23.08%)	38 (73.08%)	52
21-40	3 (2.34%)	7 (5.47%)	118 (92.19%)	128
41-70	0 (0%)	4 (3.33%)	116 (96.67%)	120
<b>Total</b>	<b>5</b>	<b>23</b>	<b>272</b>	<b>300</b>

**Source: Survey Data**

The practice levels among by respondents concerning with HBV in different age groups are shown in Table (3). According to the practical level, 118 respondents in age group (21-40) have high level of practice score. 116 respondents in age group (41-71) have high level of correct practice score. 38 respondents in age group (16-20) have high level of practice score. It can be seen that the middle age group (21-40) got the highest score. The score of the elder age group (41-70) and the middle age group (21-40) are almost the same. In this study, Majority of the young age group (16-20) have medium knowledge level and yet they are quite strong in practice, both middle and elder age groups are strong in both knowledge and practice, all three groups have good practice but the young age group has weaker knowledge than the rest. Therefore, it is found out that the knowledge concerning HBV varies with the age.

**Table (4) Knowledge score according to Education level**

Score Education level	Score			Total
	Low (0-6)	Medium (7-12)	High (13-19)	
Primary School	2 (50%)	1 (25%)	1 (25%)	4
Middle School	1 (9.09%)	7 (63.64%)	3 (27.27%)	11
High School	0 (0%)	30 (52.63%)	28 (49.12%)	58
University	7 (3.13%)	91 (40.63%)	127 (56.69%)	223
Post Graduate	0 (0%)	3 (75%)	1 (25%)	4
<b>Total</b>	<b>10</b>	<b>132</b>	<b>158</b>	<b>300</b>

**Source: Survey Data**

Table (4) shows different knowledge levels by education of 300 respondents concerning with HBV. Among 4 respondents are at primary school level, 11 respondents are at middle school level, 58 respondents are at high school level, 223 respondents are at university/graduate and 4 respondents are post graduate.

At high score level of knowledge, 127 respondents in education level 4 group have high level of knowledge score. The rest are mostly got medium score level. Group 1 and 5 have smallest number of people.

**Table (5) Practice Score according to Education level**

Score Education level	Score			Total
	Low (0-3)	Medium (4-6)	High (7-10)	
Primary School	1 (25%)	0 (0%)	3 (75%)	4
Middle School	0 (0%)	2 (18.18%)	9 (81.81%)	11

High School	1 (1.72%)	4 (6.89%)	53 (91.38%)	58
University	3 (1.35%)	26 (11.66%)	194 (86.99%)	223
Post Graduate	0 (0%)	0 (0%)	4 (100%)	4
<b>Total</b>	<b>5</b>	<b>33</b>	<b>262</b>	<b>300</b>

**Source: Survey Data**

Table (5) shows that different practice level by education level of 300 respondents concerning with HBV. As the practice, at the high score level of practice, 194 respondents in education level (4) group have high level of practice score. According to the study, all five levels have good practice, education level 4 is good in both knowledge and practice, generally knowledge and practice varies with different education levels and knowledge and practice level gets higher with higher education level.

**Table (6) Knowledge score according to Education level in Age- group 16-20**

<b>Score</b> <b>Education level</b>	<b>Low (0-6)</b>	<b>Medium (7-12)</b>	<b>High (13-19)</b>	<b>Total</b>
Primary School	1 (100%)	0 (0%)	0 (0%)	1
Middle School	0 (0%)	0 (0%)	0 (0%)	0
High School	0 (0%)	10 (83.33%)	2 (16.67%)	12
University	2 (5.13%)	25 (64.10%)	12 (30.77%)	39
<b>Total</b>	<b>3</b>	<b>35</b>	<b>14</b>	<b>52</b>

**Source: Survey Data**

Table (6) shows knowledge concerning with HBV at different levels of education in the young age group (16-20). No one in this group is in education level 2 and 5. One respondent is in primary school level, 12 respondents are high school level and 39 respondents are university/graduate level. Majority of them get medium scores.

**Table (7) Practice score according to Educational level in Age group 16-20**

<b>Score</b> <b>Education level</b>	<b>Low (0-3)</b>	<b>Medium (4-6)</b>	<b>High (7-10)</b>	<b>Total</b>
Primary School	0 (0%)	0 (0%)	1 (100%)	1

Middle School	0 (0%)	0 (0%)	0 (0%)	0
High School	1 (8.33%)	3 (25%)	8 (66.67%)	12
University	1 (2.56%)	9 (23.08%)	29 (74.36%)	39
<b>Total</b>	<b>2</b>	<b>12</b>	<b>38</b>	<b>52</b>

Source: Survey Data

Table (7) shows practice concerning with HBV at different levels of education in the young age group (16-20). Study of their practice at different education levels in this group shows majority of them gets high scores. This age group (16-20) obtains the highest practice score.

**Table (8) Knowledge score according to Education level of Age group 21-40**

Score Education level	Low (0-6)	Medium (7-12)	High (13-19)	Total
Primary School	1 (50%)	0 (0%)	1 (50%)	2
Middle School	1 (25%)	1 (25%)	2 (50%)	4
High School	0 (0%)	9 (36%)	17 (65.4%)	25
University	2 (2.08%)	43 (45.26%)	50 (52.08%)	96
Post Graduate	0 (0%)	0 (0%)	1 (100%)	1
<b>Total</b>	<b>4</b>	<b>53</b>	<b>71</b>	<b>128</b>

Source: Survey Data

Table (8) shows knowledge concerning with HBV at different levels of education in the middle age group (21-40). In this group, 2 respondents are in primary school level, 4 respondents are in middle school level, 25 respondents are in high school level, 96 respondents are graduates level and 1 respondent is in post graduate level.

At the high score level of knowledge, 50 respondents in education level 4 group have high level of knowledge score. Majority of them are in high score level. Highly educated and mature people have high level of knowledge.

**Table (9) Practice score according to Education level in Age group 21-40**

Score Education level	Low (0-3)	Medium (4-6)	High (7-10)	Total
Primary School	1 (50%)	0 (0%)	1 (50%)	2
Middle School	0	0	4	4

	(0%)	(0%)	(100%)	
High School	0 (0%)	1 (3.85)	25 (96.15%)	26
University	2 (2.11%)	5 (5.26)	88 (92.63%)	95
Post Graduate	0 (0%)	0 (0%)	1 (100%)	1
<b>Education level</b>	<b>3</b>	<b>6</b>	<b>119</b>	<b>128</b>

Source: Survey Data

Table (9) shows the practice concerning with HBV at different levels of education in the middle age group (21-40). In this group, at the high score level of practice, 88 respondents in education level 4 group have high level of practice score. People in all five levels of education are good in practice. In this group (21-40), both knowledge and practice concerning with HBV are good.

**Table (10) Knowledge score according to Education level in Age group 41-70**

<b>Score Education level</b>	<b>Low (0-6)</b>	<b>Medium (7-12)</b>	<b>High (13-19)</b>	<b>Total</b>
Primary School	0 (0%)	1 (100%)	0 (0%)	1
Middle School	0 (0%)	6 (85.71%)	1 (14.29%)	7
High School	0 (0%)	11 (55%)	9 (45%)	20
University	3 (3.37%)	22 (24.72%)	64 (71.91%)	89
Post Graduate	0 (0%)	3 (100%)	0 (0%)	3
Total	3	43	74	120

Source: Survey Data

Table (10) shows the knowledge concerning with HBV at different levels of education in the middle age group (41-70). In this group, 1 respondent is in primary school level, 7 respondents are in middle school level, 20 respondents are in high school level, 89 respondents are graduates and 3 respondents are post graduates. At the high score level of knowledge, 64 respondents in education level 4 group have high level of knowledge score. Among adult people, university/ graduates obtained the highest level of knowledge.

**Table (11) Practice score according to Education level in Age group 41-70**

<b>Score Education level</b>	<b>Low (0-3)</b>	<b>Medium (4-6)</b>	<b>High (7-10)</b>	<b>Total</b>
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Primary School	0 (0%)	0 (0%)	1 (100%)	1
Middle School	0 (0%)	2 (28.57)	5 (71.43%)	7
High School	0 (0%)	0 (0%)	20 (100%)	20
University	0 (0%)	12 (13.48%)	77 (86.52%)	89
Post Graduate	0 (0%)	0 (0%)	3 (100%)	3
Total	0	14	106	120

**Source: Survey Data**

Table (11) shows the practice concerning with HBV at different levels of education in age group (41-70). At the high score level of the practice, 77 respondents in education level 4 have high score level of practice score. In general, total scores of this age group in both knowledge and practice are mainly formed by scores of high scores level.

To study the knowledge and practice at different education levels in all three age groups, the youngest age group is weak in knowledge and yet having better practice manners. The middle age group has less knowledge than the elder age group, but in practice they have better practice manner. The elder age group has the highest level of knowledge but has weaker practice than the middle age group.

**Table (12) Knowledge score according to Occupation**

<b>Score</b> <b>Occupation</b>	<b>Low score</b> <b>(0-6)</b>	<b>Medium score</b> <b>(7-12)</b>	<b>High score</b> <b>(13-19)</b>	<b>Total</b>
Dependent people	5 (3.85%)	73 (56.15%)	2 (1.54%)	130
Odd jobs without steady income	2 (4.08%)	26 (53.06%)	21 (42.86%)	49
Government employees	2 (2.86%)	19 (77.14%)	49 (70%)	70
Company staff	0 (0%)	9 (30%)	21 (70%)	30
Business owners	0 (0%)	0 (0%)	9 (100%)	9
Retired people	1 (8.33%)	6 (50%)	5 (41.67%)	12
<b>Total</b>	<b>10</b>	<b>133</b>	<b>157</b>	<b>300</b>

**Source: Survey Data**

Table (12) shows knowledge concerning with HBV in different occupation groups. In knowledge, group 3 comprises the majority of High scores. For group 1 which contains

maximum number of people comprises the majority of medium score level. Government employees and company staff score the highest knowledge score. Odd jobs have average knowledge.

**Table (13) Practice score according to Occupation**

<b>Score</b> <b>Occupation</b>	<b>Low score</b> <b>(0-3)</b>	<b>Medium score</b> <b>(4-6)</b>	<b>High score</b> <b>(7-10)</b>	<b>Total</b>
Dependent people	3 (2.31%)	18 (13.85%)	109 (83.84%)	130
Odd jobs without steady income	1 (2.04%)	4 (8.16%)	44 (89.79%)	49
Government employees	0 (0%)	7 (11.11%)	63 (90%)	70
Company staff	1 (3.33%)	4 (13.33%)	25 (83.33%)	30
Business owners	0 (0%)	0 (0%)	9 (100%)	9
Retired people	0 (0%)	2 (16.67%)	10 (83.33%)	12
<b>Total</b>	<b>5</b>	<b>35</b>	<b>260</b>	<b>300</b>

**Source: Survey Data**

Table (13) shows the practice concerning with HBV in different occupation groups. In practice, group 1 comprises majority of high score level. And group 3 also comprises many of high score level. Group 1 is at the medium level of knowledge; but its practice skills are quite better. Group 3 is efficient in both knowledge and practice. Although group 2 knowledge score is least and its practice score is relatively high.

**Table (14) Knowledge score according to Occupation in Age group 16-20**

<b>Score</b> <b>Occupation</b>	<b>Low (0-6)</b>	<b>Medium (7-12)</b>	<b>High (13-19)</b>	<b>Total</b>
Dependent people	2 (4%)	34 (68%)	14 (28%)	50
Odd jobs without steady income	1 (50%)	1 (50%)	0 (0%)	2
<b>Total</b>	<b>3</b>	<b>35</b>	<b>14</b>	<b>52</b>

**Source: Survey Data**

Table (14) shows the knowledge concerning with HBV at different occupation groups in the young age group (16-20). In this group none of the people are involved in occupation groups 3, 4, 5 and 6. 50 respondents are occupation group 1 and 2 respondents are occupation group 2. It can be seen that majority of people in this group are in occupation group 1; and most people in this group have a medium level of knowledge score.

Table (15) shows the practice concerning with HBV at different occupation group in the young age group (21-40). Among 50 respondents in occupation group 1; 37 respondents have high level of practice score. 2 respondents in occupation group 2; 1 respondents has high level of practice score.

**Table (15) Practice score according to Occupation in Age group 16-20**

<b>Score</b> <b>Occupation</b>	<b>Low (0-3)</b>	<b>Medium (4-6)</b>	<b>High (7-10)</b>	<b>Total</b>
Dependent people	2 (4%)	11 (22%)	37 (74%)	50
Odd jobs without steady income	0 (0%)	1 (50%)	1 (50)	2
<b>Total</b>	<b>2</b>	<b>12</b>	<b>38</b>	<b>52</b>

**Source: Survey Data**

It can be seen that majority of people in this age group are in the high score level. The majority of group 1 are dependent, and thus they comprises the 75% of people having high practice score. Odd jobs will regular income earners got low score.

**Table (16) Knowledge score according to Occupation level in Age group 21-40**

<b>Score</b> <b>Occupation</b>	<b>Low (0-6)</b>	<b>Medium (7-12)</b>	<b>High (13-19)</b>	<b>Total</b>
Dependent people	3 (5.45%)	26 (47.27%)	26 (47.27%)	55
Odd jobs without steady income	1 (3.57%)	13 (46.43%)	14 (50%)	28
Government employees	0 (0%)	7 (36.84%)	12 (63.16%)	19
Company staff	0 (0%)	9 (34.62%)	17 (65.38%)	26
<b>Total</b>	<b>4</b>	<b>55</b>	<b>69</b>	<b>128</b>

**Source: Survey Data**

Table (16) shows knowledge concerning with HBV at different occupation groups in the middle age group (21-40). 55 respondents in occupation group 1; 26 respondents have high score level. 28 respondents in occupation group 2; 14 respondents have high score level. 19 respondents in occupation group 3; 12 respondents have high score level. 26 respondents in occupation group 4; 17 respondents have high score level. It can be seen that there are many people in all four groups of occupation who get the high score level in this age group.

**Table (17) Practice score according to Occupation level in Age group 21-40**

<b>Score</b> <b>Occupation</b>	<b>Low (0-3)</b>	<b>Medium (4-6)</b>	<b>High (7-10)</b>	<b>Total</b>
Dependent people	1 (1.82%)	2 (3.64%)	52 (94.55%)	55

Odd jobs without steady income	1 (3.57%)	2 (7.14%)	18 (64.28%)	28
Government employees	0 (0%)	1 (5.26%)	18 (94.74%)	19
Company staff	1 (3.85%)	4 (15.38%)	21 (80.76%)	26
<b>Total</b>	<b>3</b>	<b>9</b>	<b>116</b>	<b>128</b>

**Source: Survey Data**

Table (17) shows the practice concerning with HBV at different occupation groups in the middle age group (21-40). It can be also seen that there are many people in all four groups of occupation who get the high score level of practice in this age group.

**Table (18) Knowledge score according to Occupation in Age group 41-70**

<b>Score</b> <b>Occupation</b>	<b>Low (0-6)</b>	<b>Medium (7-12)</b>	<b>High (13-19)</b>	<b>Total</b>
Dependent people	0 (0%)	13 (52%)	12 (48%)	25
Odd jobs without steady income	0 (0%)	12 (63.16%)	7 (41.18%)	19
Government employees	2 (3.92%)	12 (23.53%)	37 (72.55%)	51
Company staff	0 (0%)	0 (0%)	4 (100%)	4
Business owners	0 (0%)	0 (0%)	9 (100%)	9
Retired people	1 (8.33%)	6 (50%)	5 (41.67%)	12
<b>Total</b>	<b>3</b>	<b>43</b>	<b>74</b>	<b>120</b>

**Source: Survey Data**

Table (18) shows the knowledge concerning with HBV in different occupation groups of the elder age group (41-70). Among these, 25 respondents in occupation group1; 12 respondents have high score level. 19 respondents in occupation group2; 7 respondents have high score level. 51 respondents in occupation group3; 37 respondents have high score level. 4 respondents in occupation group4; 4 respondents have high score level. 9 respondents in occupation group5; 9 respondents have high score level. 12 respondents in occupation group6; 5 respondents have high score level. All respondents in occupational level 4 and 5 have high scores.

**Table (19) Practice score according to Occupation in Age group 41-70**

<b>Score</b> <b>Occupation</b>	<b>Low (0-3)</b>	<b>Medium (4-6)</b>	<b>High (7-10)</b>	<b>Total</b>
Dependent people	0 (0%)	5 (20%)	20 (80%)	25

Odd jobs without steady income	0 (0%)	1 (5.88%)	18 (94.74%)	19
Government employees	0 (0%)	6 (11.32%)	45 (88.24%)	51
Company staff	0 (0%)	0 (0%)	4 (100%)	4
Business owners	0 (0%)	0 (0%)	9 (100%)	9
Retired people	0 (0%)	2 (16.67%)	10 (83.33%)	12
<b>Total</b>	<b>0</b>	<b>14</b>	<b>106</b>	<b>120</b>

Source: Survey Data

Table (19) shows the practice concerning with HBV in different occupation group of the elder age group (41-70). It can be also seen that the practice of all six occupation groups are high score level.

**Table (20) Total score according to Age group**

Score Age group	Low score (0-10)	Medium score (11-20)	High score (21-30)	Total
16-20	0 (0%)	32 (62%)	20 (39%)	52
21-40	3 (2%)	43 (34%)	82 (64%)	128
41-70	2 (1%)	38 (32%)	80 (67%)	120
<b>Total</b>	<b>5</b>	<b>113</b>	<b>182</b>	<b>300</b>

Source: Survey Data

Table (20) shows the total score of different age groups. Most of the young age group (16-20) have in medium level. The middle age group (21-40), many of them are in high level. Most of the age group (21-40) and (41-70) are with high level score.

**Table (21) Total score according to Education level**

Score Education Level	Low score (0-10)	Medium score (11-20)	High score (21-30)	Total
Primary School	1 (25%)	2 (50%)	1 (25%)	4
Middle School	0 (0%)	7 (63.64%)	4 (36.36%)	11
High School	0 (0%)	27 (46.55%)	31 (53.45%)	58

University	1 (0.45)	81 (36.32%)	141 (63.23%)	223
Post Graduate	0 (0%)	2 (50%)	2 (50%)	4
<b>Total</b>	<b>2</b>	<b>119</b>	<b>179</b>	<b>300</b>

Source: Survey Data

Table (21) shows the total scores at different education levels. Majority of people in all five levels are in high score level. And education level 4 comprises the majority of people in high score.

**Table (22) Total score according to Occupation**

Score Occupation	Low score (0-10)	Medium score (11-20)	High score(21-30)	Total
Dependent people	1 (0.77%)	66 (50.77%)	63 (48.46%)	130
Odd jobs without steady income	1 (2.4%)	15 (32.61%)	33 (67.35%)	49
Government employees	2 (2.78%)	20 (27.78%)	48 (68.57%)	70
Company staff	0 (0%)	10 (33.33%)	20 (66.67%)	30
Business owners	0 (0%)	1 (11.11%)	8 (88.89%)	9
Retired people	0 (0%)	1 (50%)	6 (50%)	12
<b>Total</b>	<b>4</b>	<b>118</b>	<b>178</b>	<b>300</b>

Source: Survey Data

Table (22) shows the total scores at different occupation groups. Majority of people in high score level are from occupation group1. Group 3 comprises the second largest number of people in high score level.

**Table (23) HBV status of unmarried candidates according to Age group**

Age group	Sex	HBV tested	HBV not tested	Total
16-20	M	6 (31.58%)	13 (68.42%)	19
	F	17 (51.51%)	16 (48.48%)	33

21-40	M	14 (46.67%)	16 (53.33%)	30
	F	23 (48.94%)	26 (53.06%)	
41-70	M	2 (66.67%)	1 (33.33%)	3
	F	15 (45.45%)	18 (54.54%)	
<b>Total</b>		<b>77</b>	<b>90</b>	<b>167</b>

Source: Survey Data

Table (23) shows HBV testing status at different ages, gender and marital status. It is found out that there only a few people in all three age groups who have performed testing of HBV. HBV testing status in relation to marital status shows only single female is found out to get tested. Among them singles from the middle age group are more likely to get tested for HBV.

**Table (24) HBV status of married candidates according to Age- group**

Age group	Sex	HBV tested	HBV not tested	Total
21-40	M	10 (58.82%)	7 (41.18%)	17
	F	23 (71.88%)	9 (28.13%)	
41-70	M	13 (33.33%)	26 (66.67%)	39
	F	22 (48.89%)	23 (51.11%)	
<b>Total</b>		<b>68</b>	<b>65</b>	<b>133</b>

Source: Survey Data

Table (24) shows HBV testing status at different age, gender and marital status. It can be seen that people in the young age group(16-20) are found out to be married. To compare the HBV testing status of married people in the middle and the elder age group, more people from the elder age group have tested for HBV. Form this table, there are no married candidates with HBV status until the age of 20.

**Table (25) HBV status of candidate according to sex & marital status**

Sex	Marital Status	HBV status		Total
		HBV tested	HBV not tested	
Male	Single	22 (42.31%)	30 (57.69%)	52
Female	Single	55 (47.83%)	60 (52.17%)	115

Male	Married	23 (41.0%)	33 (58.9%)	56
Female	Married	45 (58.44%)	32 (41.56%)	77

Source: Survey Data

Table (25) shows HBV testing status according to gender and marital status. It is found out that single females are more likely to get tested than single males. And married females are more likely to get tested than married males.

**Table (26) HBV vaccination status according to age group**

Age group \ Status	Vaccinated	Not vaccinated	Total
16-20	20 (38.5%)	32 (62.0%)	52
21-40	50 (39.1%)	78 (61.0%)	128
41-70	39 (32.5%)	81 (68.0%)	120
<b>Total</b>	<b>109</b>	<b>191</b>	<b>300</b>

Source: Survey Data

Table (26) shows HBV vaccination status in different age group. In all three age group, the medium age group (21-40) has the most number of people who have had vaccination. In general, number of people who get vaccinated is relatively few as for the all three age groups.

**Table (27) HBV vaccination status according to sex & marital status**

Sex	Marital Status	Vaccinated	Not vaccinated	Total
Male	Single	15 (28.9%)	37 (71.15%)	52
Female	Single	47 (40.9%)	68 (59.13%)	115
Male	Married	17 (30.4%)	39 (69.64%)	56
Female	Married	30 (38.9%)	47 (61.04%)	77
<b>Total</b>		<b>109</b>	<b>191</b>	<b>300</b>

Source: Survey Data

Table (27) shows HBV vaccination status according to gender and marital status. In this table, more of the single females are vaccinated than that of single males. And married females are more likely to get vaccinated than the married males.

**Table (28) HBV vaccination status of married candidates according to Age- group**

Age group	Sex	Vaccinated	Not vaccinated	Total
21-40	M	7 (41.18%)	10 (58.82%)	17
	F	15 (44.12%)	17 (53.13%)	32
41-70	M	10 (25.64%)	29 (74.36%)	39
	F	15 (33.33%)	30 (66.67%)	45
<b>Total</b>		<b>47</b>	<b>86</b>	<b>133</b>

Source: Survey Data

Table (28) shows HBV vaccination status according to age group and marital status. In this table, there are mainly occupied married people. So there is married person in the young age group (16-20) and the elder age group, more people of the married people in the elder age group is vaccinated.

**Table (29) HBV vaccination status of unmarried candidate according to Age- group**

Age group	Sex	Vaccinated	Not vaccinated	Total
16-20	M	5 (26.32%)	14 (73.68%)	19
	F	15 (45.55%)	18 (54.54%)	33
21-40	M	8 (26.67%)	22 (73.35%)	30
	F	20 (42.55%)	28 (58.33%)	48
41-70	M	2 (66.67%)	1 (33.33%)	3
	F	12 (36.36%)	22 (64.71%)	34
<b>Total</b>		<b>62</b>	<b>105</b>	<b>167</b>

Source: Survey Data

Table (29) shows HBV vaccination status according to age group and marital status. In this table, there are mainly occupied single people. It can be seen that singles from the middle age group (21-40) get more vaccination than the others groups. The young age group (16-20) is the group which has the second most number of people who get vaccinated.

**Table (30) HBV vaccination status according to Education level**

Status Education level	Vaccinated	Not vaccinated	Total
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1	0 (0%)	4 (100%)	4
2	4 (25%)	7 (63.64%)	11
3	6 (13.64%)	52 (89.66%)	58
4	99 (42.67%)	124 (55.61%)	223
5	0 (0%)	4 (100%)	4
<b>Total</b>	<b>109</b>	<b>191</b>	<b>300</b>

Source: Survey Data

Table (30) shows HBV vaccination status at different education levels. It can be seen that among all five levels, education level 4 has the most number of vaccinated people.

**Table (31) HBV vaccination status according to Occupation level**

<b>Status</b> <b>Occupation</b>	<b>Vaccinated</b>	<b>Not Vaccinated</b>	<b>Total</b>
1	48 (36.92%)	82 (63.08%)	130
2	12 (24.49%)	37 (75.51%)	49
3	25 (35.71%)	45 (64.29%)	70
4	13 (43.33%)	17 (56.67%)	30
5	5 (55.56%)	4 (44.44%)	9
6	6 (50%)	6 (50%)	12
<b>Total</b>	<b>109</b>	<b>191</b>	<b>300</b>

Source: Survey Data

Table (31) shows HBV vaccination status in various occupation groups. It can be seen that occupation group 1 has the most number of vaccinated people.

**Table (32) Full practice score according to Age- group**

<b>Score</b> <b>Age group</b>	<b>Full practice score</b>		<b>Total</b>
	<b>(+)</b>	<b>(-)</b>	
16-20	14 (27%)	38 (73.05%)	52
21-40	40 (31%)	88 (68.8%)	128

41-70	33 (28%)	87 (73%)	120
<b>Total</b>	<b>87</b>	<b>213</b>	<b>300</b>

**Source: Survey Data**

Table (32) shows full practice score according to age group. The medium age group (21-40) comprises most of people who get full practice score. The elder age group (41-70) comprises the second most number of people who get full practice score. The young age group (16-20) has the least of people with full practice score.

## 5. Conclusion

Hepatitis B education messages should be conveyed to cover both rural and urban population by using local languages in clear and easily understandable format. Health education should be intensified especially directed to young people regarding the danger of addiction and sexual promiscuity. Health education should be widely spread to all people regarding the not all HBV infected show Hepatitis symptoms, HBV infection is not curable, there is no transmission by living together, through coughing and sneezing and by eating the food prepared by HBV infected people and babies born to HBV infected mothers can be breastfed.

Health education should be intensified directed to all people regarding the HBV testing and vaccinating much more do. Health education should be intensified directed to elder people regarding not present habit of sharing one spoon and bowl in serving at dining tables. Health education should be raise the awareness of Hepatitis B among general population as well as target population, Hepatitis B infection education talks were conducted at various levels by the Ministry of Health in collaboration with related sectors. Information and education messages were also raise through mass media such as TV sports, short messages and documentaries, movies and songs and through printed media such as daily newspaper, pamphlets, posters, stickers and billboards.

The Ministry should develop a coverage goal for the Hepatitis B vaccine birth dose, in the same way that goals have been set for the routine immunization coverage. The effective communication channel should be developed between the Ministry of Health and local and international social organizations that are actively participating in Hepatitis B infection prevention and control activities. Of these education programs involve more in encouraging preventive measures and also providing vaccine more available, including low price for vaccine, it can be sure that the prevalence of Hepatitis B will be very much reduced among population within the country.

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