KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS HEPATITIS B AMONG THE RESIDENTS IN DHAANDHOO ISLAND, MALDIVES

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DECLARATION

This project is my original work and has not been presented for a Degree in any other University.

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ABSTRACT

Background: Hepatitis B is an infectious disease which is injurious for Human liver. In Maldives twenty leading causes of death from all ages in 2014 Health Report stated that, 17th leading cause was diseases of liver, of which 10 male and 5 females were dead. 2006-2014 statistics of G.A Dhandhoo Health Center states that, out of 67 detected cases of Hb, 36 were males and 31 were females.

Aim: To assess factors that influence spreading Hepatitis B among the residents in Dhaandhoo Island, Maldives.

Method: A cross-sectional descriptive study was conducted in Dhaandhoo Island, Maldives. Study was conducted among the age group between 20 to 40 years old male and female who are living in Dhaandhoo and 100 people were selected as a sample size from target population.

Results: 92% respondents mentioned that, they have some information about HBV. 59.8% participants replied that HBV was caused by virus. Participants replied less than mean score (mean <2.2174) on the statement that they were not at risk of getting HBV. Majority of the participants were reacted above mean score (mean>3.65) that the HBV vaccine helps to prevent from getting HBV. However, vast majority of the participants 55.4% responded that they never received vaccine against HBV and 51.1% were never attended any information session on HBV to get information on Hepatitis.

Conclusion: Result from current study shows maximum numbers of people believe that they were at risk of getting HBV. In contrast, quite high number of respondents strongly agreed that HBV vaccine helps to prevent from getting HBV but vast majority of the participants responded that they had never received vaccine against HBV. Moreover, the survey indicates that large numbers of subjects were never attended any information session on HBV. Therefore, in the light of the result it is important to run an extensive health education program and encourage vaccination to prevent further spreading of HBV within the community.

Key words: Knowledge, Attitude, Practices, Hepatitis B, Dhaandhoo Island

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Kindly I would like to thank field officers who were given assistants for collecting filed data.

Sincerely,

Raoof Kamal

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LIST OF ABBREVIATION

HB: Hepatitis B

HBV: Hepatitis B Virus

WHO: World Health Organization

DHC: Dhaandhoo Health Centre

BCE: Before Common Era

HBsAg: Hepatits B surface Antigen

HBcAg: Hepatitis B core Antigen

HBeAg: Hepatitis B "e" Anitigen

IDP: Internally Displaces Population

HIV: Human Immune Virus

HCV: Hepatitis C Virus

IDU: Intra venous Drug User

HBM: Health Belief Model

SPSS : Package for Social Sciences

IM: Intramuscular

KAP: Knowledge, attitudes and practices

SIDAS: SEARO Information Disease Analysis System

PHCCs: Primary Health Care Centers

CHAPTER 1

INTRODUCTION

1.1. Background to the study

Hepatitis B is an infectious disease injurious for Human liver. According to WHO, 2015 an estimated 240 million people are chronically infected with Hepatitis B and more than 780000 people die every year due to complication of HBV including liver cirrhosis and liver cancer. New cases of HB from all over the world are being discovered and widely spreading in the Asia Pacific Region and become a major concern (ul Haq et al., 2012).

Health Report 2014 stated that, Maldives' twenty leading causes of death from all ages, 17th leading cause was diseases of liver, of which 10 male and 5 females were dead (Ministry of Health & Gender, 2014). According to the global policy report on the prevention control of Viral Hepatitis B in World Health Organization (WHO) member concluded that, in general there is no written specific nationwide strategy in the Maldives for control and prevent of HBV transmission among the population. However, specific nationwide framework was developed for reducing transmission of HBV from mother to baby under immunization program. Yet, there is no specific case definition of HBV as a result rate of cases reporting are unclassified or undifferentiated (World Health Organization, 2013).Besides, recent years without identifying any root causes, HBV is worryingly spreading among the people in

Dhaandhoo Island. 2006-2014 statistics of G.A Dhandhoo Health Center states that, out of 67 detected cases of Hb, 36 were males and 31 were females.

1.2. Problem Statement and Justification

Statistics show from the year 2006 to 2014, 67 cases of HBV were detected in Dhaandhoo Island in which 36 were males and 31 were females (North Huvadhoo Atoll Dhandhoo Health Centre Laboratory, 2014). People are so concerned about this health issue because without identifying any causes, gradually HBV is spreading in the community. Besides, there is no current study which has under gone in Maldives for identifying root causes of spreading such disease. Hence, it's important to conduct a study to identify the knowledge, attitudes and practices regarding Hepatitis B among the residents in Local Island.

1.3. Purpose of the study

To identify knowledge, attitude and practice regarding Hepatitis B among the residents of Dhandhoo island

1.4. Objectives of study

1.4.1. General Objective

To investigate the knowledge, attitude and practice (KAP) of HBV infection among the residents in Dhaandhoo island, Maldives.

1.4.2. Specific Objectives

1. To asses knowledge of HBV among the residents in Dhaandhoo Island, Maldives.
2. To identify the attitudes of the residents in Dhaandhoo Island towards HBV.
3. To explore the practices of the residents in Dhaandhoo Island regarding HBV.

1.5. Research Questions (or Hypotheses)

1. What is knowledge about HBV among the residents in Dhaandhoo Island, Maldives?
2. What are the attitudes towards HBV among the residents in Dhaandhoo Island, Maldives?
3. What are the practices towards HBV among the residents in Dhaandhoo Island, Maldives?

1.6. Significance

After this study, civil society and policy makers would be able to get ground information on HB situation in the island. Therefore, relevant authorities and stakeholders can use the findings to develop strategies and goals to confront transmission of HBV within the community and enable to get ideas for revising present policies and goals which were developed to tackle such disease burdens.

1.7. Delimitations/ Scope of the study

This study did not represent whole over the population of the Maldives but also this represents the population of GA. Dhaandhoo. However, this study will apply neighboring islands of GA. Dhaandhoo because they also have significant similarities which also have in GA. Dhaandhoo community.

1.8. Definitions of Terms

Chronic: Long term duration in a disease condition

Transmission: pathogens which travel from one place to another place

Immunization: Program used for preventing from diseases

Hepadnaviridae: Family group name which Hepatitis B driven from

Unclassified: unable to identify due to certain barriers

Cadavers: People who died or dead bodies

Filed: Place where data is going to collect

Jaundice: Yellowish color which appeared in human body due some disease condition

Knowledge: knowledge refers to subjects who have information on HBV

Attitude: attitude refers to people approaches towards HBV

Practices: practices denotes participants reacts on HBV

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction of Hepatitis B:

Hepatitis is common term that is used in clinically but etiologically and epidemiologically the disease is different. Since the early 1940s Hepatitis A and Hepatitis B has been renowned as two different entities. Namely, Hepatitis A formally called as infectious Hepatitis whereas Hepatitis B called as serum Hepatitis and both diseases can be rule out using specific serological tests (CDC, n.d). 15th Century BCE (Before Common Era) Hippocrates described epidemical jaundice and “serum Hepatitis or Hepatitis B” first cases were found in 1883 and disease was thought to be administration of small pox vaccine containing human lymph to shipyard worker in Germany (CDC, n.d). Serum Hepatitis observed repeatedly during early and middle part of 20th century by using contaminated needle and syringes. In 1965 Hepatitis B surface Antigen (HBsAg) described as Australia Antigen and serological test developed in 1970s and the test helps to identify natural history of the disease (CDC, n.d).

Hepatitis B is double standard virus which is coming under the family of Hepadnaviridae. Hepatitis B virus contains several antigenic components. They are; Hepatitis B surface Antigen (HBsAg), Hepatitis B Corantigen (HBcAg) and Hepatitis B e Antigen (HBeAg). Mainly Human are the identified host for HBV, even though nonhuman also infected due to laboratory situations (CDC, n.d).

HBV transmitted among people via blood, viginal fluids, semen and mucous membranes. The most common routes that spread HBV are unsafe sex, unsafe blood transfusion, use of contaminated needles, mother to baby during birth, sharing of toiletries and house hold contact. In all HBV infectious cases based on the viremia which replicated body the symptoms may develop. Nevertheless, during acute stage some patients may develop symptoms such as jaundice, fatigue, nausea, loss of appetite and abdominal discomfort. There is no specific treatment so far found for HBV. However, in chronic HBV cases patients are treated with antiviral drug for the purpose of suppressing HBV in the body. For the purpose of protecting from HBV it's important to get vaccination against HBV (Dahlström & Viberg, 2013).

2.1.1. Hepatitis B Vaccine:

The HBV vaccine was first introduced in 1982 in the U.S. (Weinbaum et al., 2009). The general vaccination program in Maldives was started in 1967 and 1993 HB Vaccine was officially introduced in Maldives under Expanded Program on Immunization (EPI) (Abdul Qafoor,N, personal communication, October 26, 2014). Vaccination is the most protective mechanism for preventing the transmission of HBV which has found so far. It is important to conduct wide vaccination program by focusing on most vulnerable group for the betterment of preventing HBV. Focus groups may include; children, adults, infants, health care workers and pregnant women (Lavanchy, 2004). There are two branded HB vaccines namely Recombivax HB (Merck) and Engerix B (GlaxoSmithKline) (The hepatitis B foundation, 2013). The administration route of HBV is IM (intramuscular) and immunization schedule of HBV is; 1st dose at elected date, 2nd dose one month after first dose and 3rd dose 6 months after the first dose (Park, 2000).

2.2.Hepatitis B Situation in the world:

Hepatitis B is an infectious disease injurious for Human liver. According to the world health organization almost 2 billion people all over the world are suffered from Hepatitis B (HB). Out of those 2 billion, 350 million people affected from chronic Hepatitis B. Although, different statistics shows that nearly 15 – 40 % chronic HB carriers were prone to get liver cirrhosis and liver cancer. HB is challenging deadly infectious disease and every year 0.6 million people pass away from the world. Furthermore, new cases of HB from all over the world are discovering, so we have to give much concentration on it. Even though, HB is widely spreading in the Asia Pacific Region too. In addition to this 10 to 15 million of the population are suffering from this disease burden (ul Haq et al., 2012).

2.3. Hepatitis B Situation in South-East Asia Region:

South-East Asia Region consist of 11 countries they are; Bangladesh, Bhutan, North Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Laste. Hepatitis B is highly endemic in south-East Asia Region, endemicity of Hepatitis B in this region was declare as intermediate to high from 1-10 percent (Hwang, 2011). 78 percent of world Hepatitis B carriers live in Asia. The incident rate of Global Mortality of 21 % and morbidity (26%) of Hepatitis B, Hepatitis C, Liver Cancer and Cirrhosis accounts in South-East Asia region (Gore,n.d).

Table: 2.1: Estimated number of foreign-Born U.S. Residents who are HBsAg-positive, by region of origin, 2005

Region of Origin*	Estimated Foreign-Born U.S. Residents†	Estimated HBsAg Prevalence‡	Estimated HBsAg-Positive Persons	
			Number	% of Total
North America	828,705	0.1%	1,030	0.1%
Mexico and Central America	13,443,761	0.3%	36,878	3.9%
Caribbean (except Haiti)	2,667,135	1.0%	25,946	2.8%
Haiti	476,725	5.6%	26,697	2.8%
South America	2,431,328	0.7%	17,067	1.8%
Western Europe	2,755,284	0.7%	19,183	2.0%
Eastern Europe and North Asia	2,181,274	2.8%	60,512	6.4%
Africa	1,252,020	9.3%	116,967	12.5%
Middle East	1,000,272	3.2%	31,843	3.4%
East Asia	3,106,918	7.4%	230,010	24.5%
Southeast Asia	3,388,663	9.1%	307,119	32.7%
South Asia	1,971,916	2.8%	54,670	5.8%
Australia and New Zealand	96,612	0.9%	830	0.1%
Pacific Islands	88,854	12.0%	10,662	1.1%
Total	35,689,467	2.6%	939,416	100.0%

Source*: Weinbaum et al., 2009*

Table: 2.1 shows, foreigners who were born in United States of America in different regions from all over the world in 2005. The highest numbers of people who are positive for HBsAg are Southeast Asia region people and 32 % of HBsAg positive people are belong to this region (Weinbaum et al., 2009).

2.4. Hepatitis B Situation in Maldives:

Global policy report (2013) on the prevention control of Viral Hepatitis B in WHO member states reveals that, prevention and control of hepatitis B among the citizens of Maldives, there is no written specific nationwide strategy which is specifically developed. However, it emphasizes that reducing transmission of hepatitis B from mother to fetus there is an established specific national framework. Nevertheless, there is no specific case definition of Hepatitis B, as a result, the rate of case reporting are unclassified or undifferentiated (World Health Organization, 2013).

World Health Organization, 2013 stated that, for protecting health care workers from transmission of Hepatitis B, there is a specific policy and health care workers are vaccinated against Hepatitis B. For the purpose of maintaing zero tolerance of getting Hepatitis B from Health care setting to the patients, there is a policy for using single-used syringes for therapeutic injections. Meantime, frequency of accidental needle pricking in health care-setting is not recognized (World Health Organization, 2013).

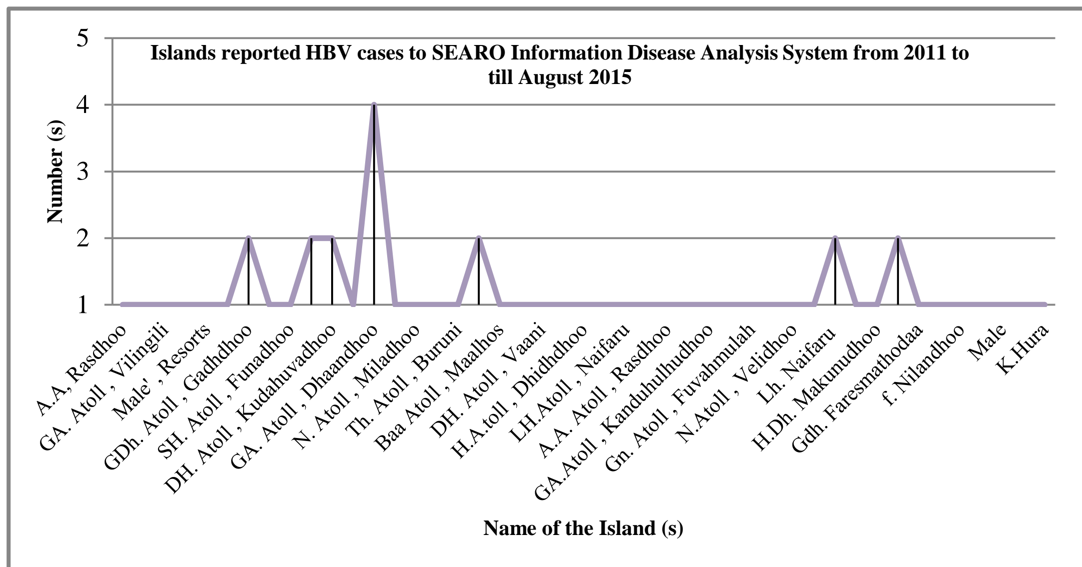

Figure: 2.1: Islands reported HBV cases to SIDAS (SEARO Information Disease Analysis System) from 2011 to till August 2015
***Source**: Health Protection Agency*

Figure: 2.1 shows different atoll in different islands from Maldives reported HBV cases from 2011 to till August 2015. 45 islands reported 54 HBV cases during that period from all parts of the Maldives. 38 islands reported one case, each of the 6 islands, reported 2 cases of HBV respectively. However, Dhaandhoo Island alone reported 4 cases of HBV during that period and it was highest number of HBV cases reported among 45 islands in Maldives. The following table: 2.2 displays, the prevalence rate of HB in Dhaandhoo Island in 8 years' time. According to the table, 67 cases of HBV detected from 2006 to 2014 of which 31 were females and 36 were males (North Huvadhoo Atoll Dhandhoo Health Centre, 2014).

Table 2.2: Hepatitis B Statistics in Dhaandhoo Island 2006-2014

Hepatitis B Statistics in Dhaandhoo Island 2006 – 2014								
Gender	**Years**							
	2006	**2007**	**2008**	**2009**	**2011**	**2012**	**2013**	**2014**
Male	1	9	9	9	0	2	4	2
Female	1	4	11	8	1	4	0	2
	2	**13**	**20**	**17**	**1**	**6**	**4**	**4**

Source*: Dhaandhoo Health Centre*

2.5. Pervious literature related to the study:

2.5.1. Demographic Factors:

Deng et al., 2013 reported that there was a high prevalence of HBV among the males than females (p- value =<0.01), in a study conducted in rural area of Hua county Henan province in China with 5104 participants among the age group of 25-65 years, Moreover, they also emphasize that, there was quite high number of prevalence rate of HBV in 25-29 and 55-59 years age groups among both male and female and recommends that more focus should be on high risk group in the population such as males aged 25-29 years and 55-59 years (Deng et al., 2013). Furthermore, in Malakand Division of North Pakistan a study conducted by Khan et al., 2011 among 950 IDPs (Internally Displaced persons) with suspected HBV persons found that, within 46 to 60 years old persons have high risk factor of HBV but lower risk factor among children age greater than 15 years (Khan et al., 2011).

Tofigi et al., 2011 found in a case-control study conducted in Teheran in Iran, among Cadavers of 400 randomly chosen IDUs (Intravenous Drug Users) as a case and 400 other Cadavers as control group, high prevalence rate of HBV positive among IDU group than the control(6.25% vs 0.5%, $P<0.001$, 27.5% vs 3%, $P<0.001$). In addition, based on age distribution of Cadavers more number of IDU Cadavers are in

reproductive age group such as 21-40 years old and high prevalence rate of HIV and HBV infection are found in that age group (21-40 years old) (Tofigi et al., 2011).

Al-Thaqafy et.al, 2012 conducted a KAP on HBV after pre- and post-education study among 400 Saudi National Guard personnel, it revealed that most common sources for getting HBV information were TV/Radio (39.7%), friends (36.9%), and newspapers and magazines (26.9%) respectively. However, a cross-sectional descriptive study shows 180physicians practicing at PHCCs in AlJouf province of Saudi Arabia main sources of getting information about HBV were; textbooks 139 (n= 139, 85.5%), internet 15 (n= 15, 9.4%) and medical journals were the main sources they were getting information on HBV 8 (n=8, 5.0%) physicians (Al-Hazmi et.al, 2014).

2.5.2. People knowledge on HBV

Mohamed et.al, 2012 reported in a cross-sectional descriptive study conducted among 483chronic HBV patients who attended in an adult outpatient hepatology clinic at the University of Malaya Medical Centre (UMMC), nearly half of the participants could not distinguish whether HBV is a viral or bacterial infection.

Moreover, a study conducted among 176 pregnant women in the Buea Health District (BHD) a whole, majority of the participants had never heard of the disease called hepatitis and 80% of the participants did not know that hepatitis B was a virus (Frambo et.al, 2014).

In contrast, Mohamed et.al, 2012 suggested that, vast majority of the people were aware about the consequences of HBV like 81% of people agreed on HBV causes inflammation of livers while 78.5% responded HBV is one of source of getting liver failure and liver cancer may acquire from HBV, 85.1% replied. In addition, the

researchers emphasized that, above the 70th percentile people got correct answers about the mode of transmission in HBV.

However, a study conducted by ul Haq et.al, 2012 within Healthy individuals aging 18 years and above at Quetta city, Pakistan showed that Poor knowledge was apparent in responses to symptoms and transmission of HB. Besides, A cross-sectional, descriptive study conducted among 390 Hepatitis-B patients attending two public hospitals in Quetta city, Pakistan indicated that, 298 respondents (76.4%) were within the poor knowledge range while 92 (23.6%) showed adequate knowledge about HB. Mainly, poor responses were noticed in symptoms and transmission part of HBV (ul Haq et.al, 2013).

In addition to that, Mohamed et.al, 2012 suggested in a descriptive study conducted among 483chronic HBV who attended in adult outpatient hepatology clinic at the University of Malaya Medical Centre (UMMC), minor proportion of the people have information about HBV transmission via through body piercing and tattooing (14.7%) but not via sharing of utensils (6.8%) (Mohamed et.al, 2012).

However, Al-Hazmi et.al, 2014 reported in a study conducted among 180 physicians practicing at PHCCs in AlJouf province of Saudi Arabia, they responded transmission of HBV via; wound to wound was 142 (n= 142, 89.3%), 140 participants (n= 140, 88.1%) replied sexual interaction, 127 (79.9%) agreed that infected mother from baby in delivery through birth cannel, 110 respondents answered (69.2%) maternofetal, 83 (52.2%) via saliva, 81 (n= 81, 50.9%) breast milk, 130 (n= 130, 81.8%) physicians believe hugging, 136 (n= 136, 85.5%) shaking hands or 123 (n= 123, 77.4%) sharing foods with infected persons as a safe practices(Al-Hazmi et.al, 2014).

Moreover, Guo et al., 2013 conducted a study within 1113 HbsAg mother and their babies in Taiyuan, found that; rate of 8.9% neonates had HBsAg and HBV DNA positive through intrauterine transmission. Besides, the researchers concluded if a mother is having HBV positive, there is more chances of transmission HBV through intrauterine (Guo et al., 2013). Additionally, a study conducted among 1500 delivering women blood sample and their neonates cord blood sample in Tripoli Medical Centre, Tripoli, 23 pregnant women and 14 neonates were detected Hepatitis B positive. In addition, they stated that Hepatitis B positive neonates were borne to Hepatitis B (HBV) mothers and maternal transmission of Hepatitis B at rate of 60.9 % (El-Magrahe et al., 2010).

Frambo et.al, 2014 reported in a cross-sectional descriptive study conducted among 176 pregnant women in the Buea Health District (BHD), only 15.9 % of the participants knew that infection with hepatitis virus affects the liver as the primary organ. Moreover, researchers notified that, most of the participants (n=141, 80.6%) who participated the study did not know that an infected person is capable of living without ever presenting complaints related to the disease. The information that hepatitis B infection can cause liver cancer was avowed by 28 participants (15.9%) and 15.3% had the correct knowledge about prevention of hepatitis B infection by vaccination (Frambo et.al, 2014).

Further, a study conducted among Saudi National Guard personnel by Al-Thaqafy et.al, 2012 found that, participants were aware of the availability of vaccine against HBV was 50.5% before intervention whereas 96.5% after intervention.

2.5.3. People attitudes towards on HBV

Mohamed et.al, 2012 notified in a cross-sectional descriptive study conducted among 483chronic HBV who attended in an adult outpatient hepatology clinic at the University of Malaya Medical Centre (UMMC), half of the participants were worried about spreading HBV to their family and friends and somewhat over half were worried after they diagnosed as HBV positive. Furthermore, equal proportions of the participants were uncomfortable to reveal their diagnosis to the public and 33.5% of participants were against to work HBV positive patients in food handling industries, but majority of the participants were agreed to share their HBV situation to their families (Mohamed et.al, 2012).

A cross sectional assessment of knowledge, attitude and practice towards Hepatitis B among healthy population of Quetta, Pakistan shows that, almost high number of the respondent (n=622,79.7%) believed that they can never become infected with HB and 39.5% (n= 308) respondents stated that they will be ashamed to get infected with HB (ul Haq et.al, 2012). Moreover, the study revealed that, 70.4% of participants (n= 549) were shown interest to use complementary and alternative therapy in the event of HBV infection but 26.0% (n= 203) agreed to consult a medical practitioner as to get first line treatment of HBV (ul Haq et.al, 2012).

In contrast, ul Haq et.al, 2013 stated in A cross-sectional assessment of knowledge, attitude and practice among Hepatitis-B patients in Quetta, Pakistan, most of the HB patients (n = 252, 64.6%) believed that they could never become infected with HB. Furthermore, 35.4% (n= 138) HB patients stated that they felt fear when they know they were infected with HBV and 73.6% (n= 248) of the study respondents used CAM (complementary and Alternative Medicine) treatment for the HBV infection before consulting medical practitioner. However, they reported that, respondents were

ready to share their disease status with spouse (n = 367, 47.1%) and parents (n = 207, 26.5%) (ul Haq et.al, 2013). Furthermore, a study conducted by ul Haq et.al, 2013 also revealed that, 47.1% respondents were ready to disclose their disease to their spouse (n = 160) and friends 17.9% (n = 70).

Al-Thaqafy et.al, 2013 found in a study after pre- and post-education assessment of KAP of HBV infection within Saudi National Guard of four hundred participants, correct attitude in vigilantly dealing with an infected household person and not supporting isolation of that infected person from work or daily activity before pre-education assessment was 45.3% and 33.8% but after post education assessment it was increased 69.8% and 93.3% respectively (Al-Thaqafy et.al, 2013).

Moreover, a cross-sectional descriptive study carried out on physicians practicing at PHCCs in AlJouf province of Saudi Arabia by Al-Hazmi et.al, 2014 shows that, 66.7% (n= 106) physicians did not have worry on shaking hands with a person who has infected with HBV and 67.9% (n= 108) physicians did not feel uncomfortable hugging him. In addition they found that, 79.9% of respondents (n= 127) believed that vaccination is the most effective means to prevent HBV (Al-Hazmi et.al, 2014).

2.5.4. People practices on HBV

A cross-sectional study held among 483 chronic HBV patients who are attending an adult outpatient hepatology clinic at the University of Malaya Medical Centre (UMMC) found that, for the purpose of taking preventive measures against HBV large number of the participants avoided sharing personal items such as razors and toothbrushes (98.3%) and quite high number of participants did not involve for blood donation (99.0%) and also 91.7% of participants fortified their instant family

members to undergo screening for HBV whereas half of the participants (50.6%) avoided sharing eating and drinking utensils with others(Mohamed et.al, 2012).

ul Haq et.al, 2012 reported in a cross sectional descriptive study held within1000 healthy individuals aging 18 years and above in Quetta city, Pakistan, 96.9% of the participants (n=756) were never gone for HB screening whereas 86.8% of the respondents (n= 674) stated a negative immunized status against HB. The researchers further highlighted that, it was fascinating to know that, 81.8% of the respondents were (n = 634) never asked for a new syringe when necessary, whereas only 44.1% of the respondents (n =344) agreed with the statement of asking screening of blood or blood products before giving blood transfusions and 80.9% of participants (n = 631) either not ever inquired for safe and clean equipment for nose and ear piercing or the barber to use new blade (ul Haq et.al, 2012).

Heymann, 2004 emphasized that, sharing of certain toiletries such as razors, toothbrushes, trimmers and towels act as a vehicle for the transmission of HBV. When a person with hepatitis B uses toiletries and may cut himself unintentionally or have an unknown wound, there are chances to release the virus in to the toiletries via blood or any other body fluids. Consequently, when a person without HBV uses same toiletries and come in contact with an open wound accidentally, this will transfer the virus to that person causing HBV (Heymann, 2004).

On the other hand, ul Haq et.al2012 stated that, 635 of the participants (81.4%) revealed that, they avoid meeting a person infected with HB. and 93.7% of respondents (n=731) agreed that they will go for further investigation and treatment if they are infected with HB. However, 1.8% of respondents (n = 14) have ever attended any educational program on HB (ul Haq et.al2012).

In contrast, same type of study was carried out in Quetta, Pakistan within 390 Hepatitis-B patients attending two public Hospitals, it reported that, majority of the patients (n = 383, 98.2%) had never undergone screening program on HBV before they were infected and 75.9% of (n=296) patients had not ever asked questions about blood screening or before blood transfusion and they did not make sure the safety of blood products and 75.1% of participants (n=293) responded they had never asked to their barbers to use safe and clean equipment before nose and ear piercing or use new blade. In contrast, quite high number of the patients (n = 308, 79.0%) revealed that after become infected with HBV they stop casual meeting with other people (ul Haq et.al, 2013).

Tegegne et, al, 2014 reported in a cross- sectional study conducted among 265 age group delivering mothers and their equivalent cords of 265 infant in St. paul's Hospital Millennium Medical College and Selam Health Centre, Addis Ababa, Ethopia. Majority of participants were exposed multi factors such as ear pricing, history of tribal marks, abortion and history of surgical experience. The results of the study revealed that, 8 delivering mothers were positive for Hepatitis B virus (HBV) and 6 cord blood samples were positive with 75% concordance rate of exposed infant with sero-positive mothers (Tegegne et, al, 2014).

An observational study conducted at Pakistan in six month duration by Ur-Rehman et al., 2011 among one hundred patients who were nose and ear piercing, reported that, 35 patients had hepatitis B and 10 had both Hepatitis B and Hepatitis C (Ur-Rehman et al., 2011).

2.6.Theoretical Framework:

In this project Health Belief Model (HBM) was used as a theoretical framework (Figure: 2.1 Health Belief Model). Normally, HBM is used in health behavioral research as theoretical framework and it was developed in 1950s. HBM consists of 6 main concepts they are; perceived susceptibility, benefits, severity, barriers and cues to action and self-efficiency. Perceived susceptibility is a belief that probabilities of getting chances or suffering a risk of susceptible disease, example HBV. The way of thinking on seriousness in a disease and its consequences is perceived severity such as HBV is an injurious disease. Considering the ability of health care system and preventable measures, to avoid the impact on such disease is benefit like vaccine against HBV is safe. Perceived barriers are costs or challenges which may face to overcome from such disease burden, getting vaccine on time may face a challenge due to financial matters. A strategy to enhance awareness on disease, disseminating information through different routes for the eagerness of disease is cues to action. Behavioral base, loss of confidentiality is one of the actions we can see from youngsters and adults, for minimizing those behavioral activates we give appropriate training and take sustainable measures to combat such challenges (Dahlström & Viberg, 2013).

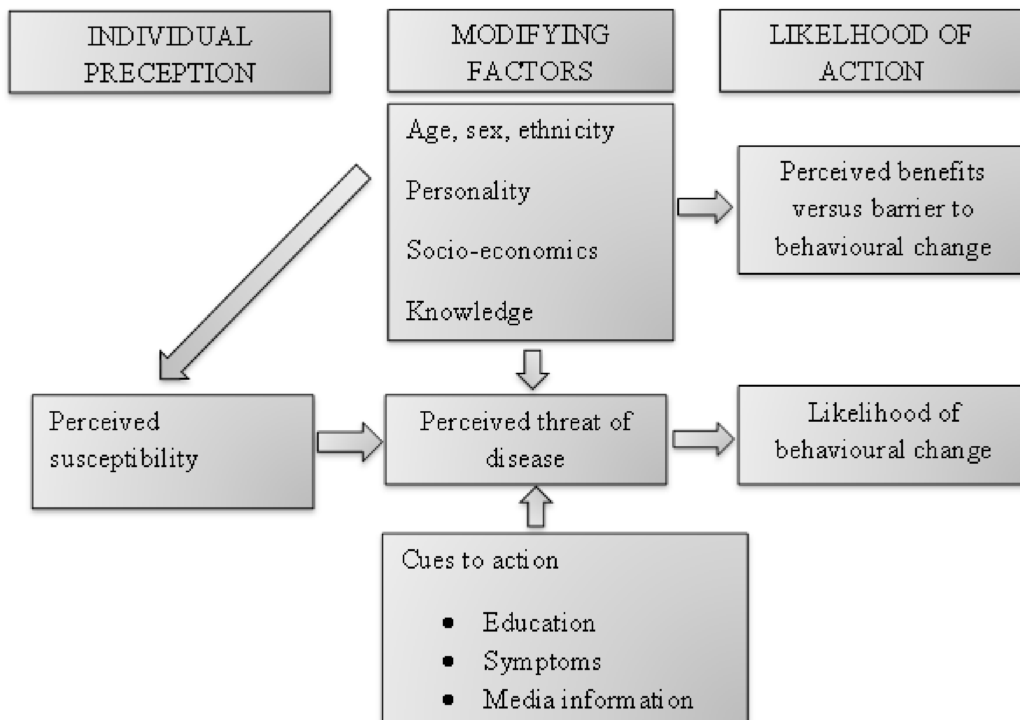

Figure: 2.1 Health Belief Model

Source*: Dahlström & Viberg, 2013*

CHAPTER 3

METHODOLOGY

3.1. Research Design:

A cross-sectional descriptive method was used in this research because cross sectional study design is useful for measuring current situation of Hepatitis B in a short period of time. In addition, descriptive analysis was used because that approach seeks to describe and analyze the culture and behavior of people from their own point of view.

3.2. Study Area:

This study was conducted in Dhaandhoo Island, Maldives. Dhaandhoo Island is in North Huvadhoo atoll .Total population of Dhaandhoo Island is 1952 people, 969 females and 983 males ("Secretariat of the Dhaandhoo Council", 2014, para.3). The main reason for selecting Dhaandhoo Island to conduct this study was because prevalence rate of HBV is alarmingly increasing among the residents in the island.

3.3. Target population:

Target population to conduct this study were aged between 20 to 40 years old male and female who are living Dhaandhoo Island. In that age group 846 people were living in Dhaandhoo Island in which 424 were females and 422 were males.

3.4. Sample Techniques:

The formula which is used to calculate sample size is as follows

$$N = \frac{(Za)^2[p*q]}{d^2}$$

where the symbol ^ means 'to the power of'; * means 'multiplied by' that is, "Z-alpha squared into pq; upon d-square"

P: prevalence of the condition/Health state

q: i. when p is in percentage terms: (100-p)

ii. When p is in decimal terms: (1-p)

d (or l): The precision of the estimate. This could either be the relative precision, or the absolute precision. This will be discussed later in this section.

Za [Z alpha]: The value of z from the probability tables. If the values are normally distributed, then 95% of the values will fall within 2 standard errors of the mean. The value of z corresponding to this is 1.96 (from the standard normal variate tables).

However, Instead of using above mentioned formula more preference was given for calculating sample size with the help of web based software namely "Raosof". The study population of this study is 846 people of both male and female. Expected margin of error was adjusted as a five percent while, confidential interval level was kept ninety five percent. Furthermore, the level of response level among participant was maintained 60 percent (Raosoft, 2004). After entering study population, the software generated as a sample size 258 people (Raosoft, 2004). However, due to budget constraints and lack of time 39 percent was taken from 258 as an actual sample size. Therefore, sample size was considered as 100 people from target population. With the help of island's vital register people were selected in simple random method. Main reasons for using simple random method for selecting people

from sample size because it represents collectively entire target population and there is high probability everyone in target population was got equal opportunities of being selected.

3.5. Sample Size:

100 people of both males and females in target population.

3.6. Research Instrument:

A standard questionnaire was used as a research instrument and the questionnaire contains total 29 questions. Questionnaire was divided in to four parts; part I is demographic characteristics and this part includes 6 questions. In which 2 questions were open ended questions and 4 dichotomous type questions. Knowledge towards HBV was assessed in part II. Total 9 questions were included in which 7questions are dichotomous questions and two multiple choice type questions. Participants' attitudes towards HBV were examined in part III and they were asked to give their opinions on eight statements using a 4-point Likert scale (from 1 = strongly agree to 4 = strongly disagree). Part IV contains total 5 questions for the purpose of testing participant's practices towards HBV. All questions in this part were dichotomous type questions.

3.7. Pre-Testing:

Before collecting field data, questionnaire was tested among the selected 10 people from target population.

3.8. Validity and reliability:

To increase the reliability of survey instrument, questionnaire was pre -tested among selected 10 people from target population. After pre-testing questionnaire among 10 people, feedbacks were incorporated in the questionnaire before collecting field data. Furthermore, to increase reliability of questionnaire with help of SPSS software

Cronbach’s Alpha of 8 items have done and its result is, 0.082. Hence, the result shows internal consistency is high and most of the social science research reliability coefficient of 0.70 or higher is considered “acceptable" (Institute for digital research and education, 2015). Besides, questionnaire was shown a lecturer at faculty of health sciences, some changes were brought to the pattern of questions based on his feedback for the betterment of strengthen the reliability of questionnaire.

Questionnaire was reflected for achieving the purpose of the objectives and research questions of the project as wide as possible. Therefore, the validity of the finding in the research may not get alteration if same type of research carries in different setting too.

3.9. Data Collection Techniques:

In this study, a self-administered questionnaire was used for the purpose of collecting field data. Five people were selected as field officers for collecting field data. Field officers were given one week training session on questionnaire and other relevant ethical measures to maintain during the field work. Data collection in field was taken approximately one week’s time period.

3.10. Data Analysis:

Data was cleaned and coded. Descriptive statistics was used to illustrate respondents’ demographic characteristics. Categorical variables were measured as percentages while continuous variables were expressed as mean ± standard deviation. Package for Social Sciences (SPSS) v. 20.0 was sued for data analysis.

3.11. Ethical Consideration:

A consent form was given with participants for perpetrating the right to assent voluntarily and free from exploitation and coercion as a result, this enables

participants right to self-determination and autonomy. In the event that, participants want to get further information about the study they were fortified to consult with a confidential. The participants were given right to withdrawal from the study at any time and ethical principles were applied for minimizing harm to the participants.

3.12. Conceptual framework:

Conceptual framework was developed based on the ideas driven from Health Belief model. Modifying factors part were chosen in health belief model while developing theoretical framework such as; demographic characters, knowledge, personalities and practices. Figure.3.1 shows how dependent and independent variables that were classified based on the ideas of Health Belief model's modifying factors. The dependent variable is Hepatitis B whereas independent variables are Demographic factors, people's knowledge, attitudes and practices on HBV.

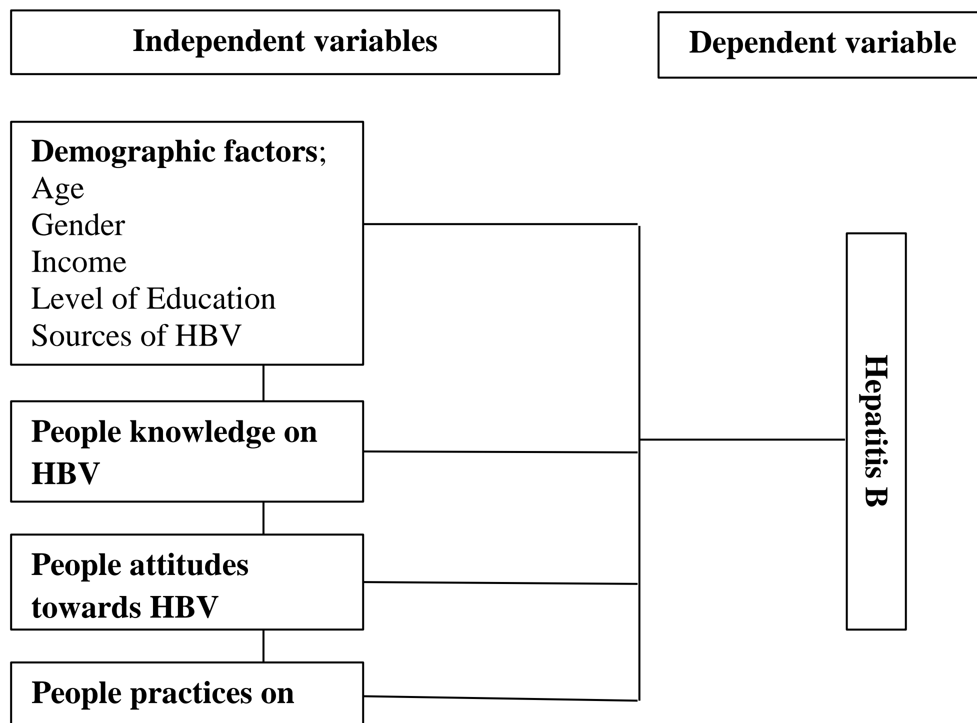

Figure: 2.1 Conceptual framework

CHAPTER 4

RESULTS

In the present cross-sectional survey, total hundred participants were took part and all the participants responded to part one in the questionnaire. In Part two of the questionnaire, the first question was adopted to ask the participants whether they have any information about HBV and it was a diachotamas type question. Once a participant says “NO” he or she is not eligible to attempt rest of the following questions in the questionnaire so, likewise eight participants were not eligible to attempt rest of the questions in the questionnaire

4.1. Socio-demographic characteristics’

Table: 4.1. Frequency and percentage of the participants’ Socio-demographic characteristics

Variable	Frequency (n=100)	Percent (%)
Age		
<Mean	51	51.0
>Mean	49	49.0
Mean = 28.74 minimum = 20 Maximum = 40		
Gender		
Female	43	43.0
Male	57	57.0
Marital Status		
Married	68	68.0
Single	27	27.0
Divorced	5	5.0

Table 4.1, continued.

variable	Frequency (n=100)	Percent (%)
Occupational Status		
Unemployed	36	36.0
Government employed	38	38.0
Private employed	6	6.0
Self employed	20	20.0
Educational Status		
Basic education	18	18.0
Primary	6	6.0
Secondary	57	57.0
Higher Secondary	1	1.0
Graduate and above	18	18.0
Income level		
< Median	32	32.0
> Median	68	68.0
Median income = 6540 MVR, **Minimum** = 2000, **Maximum** = 2000		

The socio-demographic characteristics of participants are shown in Table 1 .The mean age of respondents were 51.0% people were less than median age whereas 49.0% people were above the median age group. In addition, 43% people were female and 57% people were male.

Based on the marital status; 68%people were married, 27% people were single and 5% are divorced. Among the 100 participants, 38% people were working as a government employee while 36% people were unemployed, 20% people were self-employed and 6% people were working as a private employee.

Focused on education level out of 100 respondents; 57% completed secondary education, 18% attained same percentage in both graduates/above and basic education, 6% participants were accomplished primary education and 1% participant had completed higher secondary education. Moreover, median income among 100 participants was 6540 MVR; 68% peoples' income was above median income, whereas 32% people were below median income.

4.2.Participants' knowledge on HBV

Table: 4.2. Frequency and percentage of the participants' knowledge on HBV

Variable	Frequency (n=100)	Percent (%)
Do you have any information about Hepatitis B? (n= 100)	92	92.0
Yes	8	8.0
No		
Where you get information about Hepatitis B? (n= 92)*		
TV, Radio & internet	50	50
Health care workers	60	60
Newspaper/Leaflets, brochures, poster etc.	16	16
Does Hepatitis B caused by a virus? (n= 92)		
Yes	55	59.8
No	20	21.7
Don't know	17	18.5
What are the methods of HBV transmission? (n= 92)*		
Contaminated blood or blood products	35	35
Sharing needles and syringes	51	51
Shaking hands	1	1
Sharing used blades of the barber or ear and nose piercing products	45	45
Coughing/Sneezing	13	13
Sharing food with an infected person	0	0
Mother to baby	41	41
Unsafe sex	66	66
Water drinking	4	4
Don't know	9	9
What are the sign and symptoms of Hepatitis B? (n= 92)*	1	.5
Excessive hunger	17	8.6
Sweating	23	11.6
Vomiting	27	13.6
Abdominal pain	4	2.0
Excessive talk	32	16.2
Nausea	41	20.7
Jaundice	16	8.1
Loss of appetite	37	18.7
Don't know		
Does Hepatitis B cause liver cancer? (n= 92)		
Yes	73	79.3
No	1	1.1
Don't know	18	19.6

Note: * Multiple responses

Table 4.2, continued

variable	Frequency (n=100)	Percent (%)
Dose Hepatitis B is curable disease? (n= 92)		
Yes	33	53.3
No	41	29.3
Don't know	18	17.4
Is a vaccine found for Hepatitis B? (n= 92)		
Yes	76	82.6
No	6	6.5
Don't know	10	10.9
If a person confirmed as Hepatitis B but do not present any signs and symptoms, do you think from that person Hepatitis B will transmit? (n= 92)		
Yes	49	53.3
No	27	29.3
Don't know	16	17.4
Does Sharing eating and drinking utensils would transmit Hepatitis B? (n= 92)		
Yes	19	20.7
No	56	60.9
Don't know	17	18.5

Table: 4. 2 describe the responses of the participants towards HB knowledge. Almost all the people who have taken part in this survey have some information about HBV, 92 (92%) participants respectively whereas eight (8%) participants told that they don't have any information about HBV. While clarifying where participants get information about HBV; 50 (50%) people replied on TV, Radio & internet, 60(60%) people from Health care workers and 16 (16%) people from Newspaper/Leaflets, brochures, posters etc. respectively. Majority of the participants replied (n= 55, 55.8%) that HBV was caused by virus while 20 (21.7%) replied HBV was not caused by virus and 17 (18.5%) answered they were not sure HBV is caused by virus or not.

Majority of the people (n= 66, 66%) responded that unsafe sex is one of the methods of HBV transmission. Moreover, 51 (51%) of the people answered that sharing needle and syringes are also a method of HBV transmission. Moreover, sharing used blades of the Baber or ear and nose piercing products is the route of HBV transmission

replied by 45 people (45%) respectively and 41% people answered that mother to baby is also a route of HBV transmission. Furthermore, contaminated blood or blood products are one of the method of HBV transmission replied by 35% respectively. 13% people responded that via coughing/sneezing is a route of HBV transmission and 9% people told that they don't know the methods of HBV transmission. In addition to that, 4% people told that water drinking is the way of the method to spread HBV and least number (n=1, 1%) of people responded that shaking hands are the method of spreading HBV. However, no participants responded that sharing food with an infected person was a way of HBV transmission.

41% people replied that jaundice was a sign and symptom of HBV and 37 (37%) people responded that they don't know about the sign and symptoms of HBV. Moreover, Nausea is the sign and a symptom of HBV was replied by 32% people respectively. In addition, 27% people told that abdominal pain was a sign and symptom of HBV and vomiting was sign and symptom of HBV replied by 23% people only. Meanwhile, sweating is the sign and symptom of HBV was answered by 17% respondents and 16% of people replied that loss of appetite is one of the sign and symptom of HBV. However, slightest number (n= 1, 1%) people replied that excessive hunger is a sign and symptom of HBV.

Vast majority of the people (n= 73, (79.3%) new about HBV cause liver cancer while 18 (19.6%) people don't know whether HBV cause liver cancer or not and 1 (1%) people replied HBV don't cause liver cancer. On the other hand, 41 (44.6%) replied HBV is not a curable disease while 33 (35.9%) decided HBV is curable disease and 18 (19.6%) don't know whether HBV is curable disease or not.

Nearly, all the people (n= 76, 82.6%) were aware about a vaccine was found for HBV but 10 (10.9%) people don't know whether a vaccine was found for HBV or not and 6 (6.5%) respondents were replied that there was no vaccine found for HBV.

Above half of the participants 53% replied that a person confirmed as HBV but don't present any sign and symptoms, from that person HB virus would transmit but 27 (29.3%) participants responded that a person confirmed as HBV but don't present any sign and symptoms, from that person HB virus would not transmit and 16 (17.4%) people replied they are not sure a person confirmed as HBV but don't present any sign and symptoms, from that person HB virus would transmit or not. Fifty six (60.9%) people responded that sharing eating and drinking utensils would not able to transmit HBV. However, 19 (20.7%) people answered that sharing eating and drinking utensils would be a source to transmitting HBV and 17 (18.5%) people were not sure about sharing eating and drinking utensils would be a source to transmit HBV

4.3.Participants' attitudes on HBV

Table: 4.3. Frequency and percentage of the participants' attitudes on HBV

Statement (n = 100)	**4 %**	**3 %**	**2 %**	**1 %**	**Mean**	**SD**
I am not at risk for getting HBV?(n= 92)	4.3	37.0	34.8	23.9	2.2174	.86222
If a person positive for hepatitis B, he /she may face isolation in the community. (n= 92)	35.9	42.4	17.4	4.3	3.0978	.83941
Average Score for Attitude: **Mean** = 3.54 **SD** = 2.18 **Min** = 1 **Max** = 4						

Score: 1 = Strongly Disagree, 2 = Dis Agree, 3 = Agree, 4 = Strongly Agree

Table 4.3 continued.

Statement (n = 100)	4 %	3 %	2 %	1 %	Mean	SD
If I would have developed Hepatitis B's sign and symptoms I would prefer to consult medical officers instead of traditional healer. (n= 92)	54.3	40.2	2.2	3.3	3.46	.702
In my point of view, it's better to seek treatment for Hepatitis B before it gets worse than waiting for own treatment. (n= 92)	50.0	39.1	3.3	7.6	3.32	.864
Treatment and screening program of Hepatitis B is quite expensive than affordable.(n= 92)	8.7	31.5	35.9	23.9	2.2500	.92136
Hepatitis B vaccine helps to prevent from getting Hepatitis B.(n= 92)	68.5	29.3	1.1	1.1	3.65	.563
In a married couple if one person positive for HBV also, another person will not get HBV.(n= 92)	29.3	30.4	28.3	12.0	2.7717	1.00661
Spreading HBV in the community/family is not a concern.(n= 92)	64.1	25.0	7.6	3.3	3.5000	.77743
Average Score for Attitude: **Mean** = 3.54 **SD** = 2.18 **Min** = 1 **Max** = 4						

Score: 4 = Strongly Agree, 3 = Agree, 2 = Dis Agree, 1 = Strongly Dis Agree

Table: 4.3 show participants' attitudes on HBV. Within 100 participants 92 participants were eligible to answer this part of questionnaire. Participants replied less than mean score (mean <2.2174) on the statement that they were not at risk of getting HBV whereas subjects were answered near at mean score (mean= 3.0978) if a person positive for Hepatitis B, he/she may face isolation in the community. Besides, respondents were replied at the mean score of 3.46 if they would have developed

HBV’s sign and symptoms they would prefer to consult medical officers instead of traditional healer. Moreover, participants were answered at the means score of 3.32 in their point of view, it is better to seek treatment for HBV before it gets worse than waiting for own treatment. However, most of the subjects were replied less than the means (mean<2.2500) on the treatment and screen program of HBV is quite expensive than affordable. However, majority of the participants were reacted above mean score (mean>3.65) that the HBV vaccine helps to prevent from getting HBV. In addition, most of the participants were reached at the mean score of 3.5000 while answered in the statement of spreading HBV in the community/family is not a concern. However, participants were achieved less than mean score (mean<2.7717) when replied on the statement of a married couple if one person positive for HBV also, another person will not get HBV.

4.4.Participants’ practices on HBV

Table: 4.4. Frequency and percentage of the participants’ practices on HBV

Variable	**Frequency n = 100**	**Percent (%)**
Do you ever under gone for Hepatitis B screening program?(n= 92)		
Yes	47	51.1
No	43	46.7
Don’t know	2	2.2
Have you received vaccine against Hepatitis B? ?(n= 92)		
Yes	37	40.2
No	51	55.4
Don’t know	4	4.3

Table: 4.4.*continued*

Variable	**Frequency n = 100**	**Percent (%)**
Do you share toiletries (towels, blades nail cutter and scissors etc.) with Hepatitis B infected persons? ?(n= 92)		
Yes	6	6.5
No	86	93.5
Do you ask barber to change blade or do you share sharp need/equipment for ear and nose piercing? ?(n= 92)		
Yes		
No	65	70.7
	27	29.3
Have you ever attended any information session on Hepatitis B? (n= 92)		
Yes	45	48.9
No	47	51.1

Table 4.4 shows participants' responses on different facets of practice toward HBV. Among 100 participants, 92 participants were eligible to fill this s part of the questionnaire. Within those 92 participants, it shows that 47 (51.1%) respondents say that they had under gone for Hepatitis B screening whereas 43 (46.7%) participants say that they had never under gone for any Hepatitis B screening. However, Few number (n= 2, 2.2%) of participants respond that they don't know whether they had gone for Hepatitis B screening. Vast majority of the participants (n= 51, 55%) responded that they never received vaccine against Hepatitis B and 37 (40.2%) people had received vaccine against Hepatitis B as a preventive measures. However, fewer people (n= 4, 4.3%) responded they don't know whether they had received vaccine against Hepatitis B as a preventive measures.

Majority of the people (n= 86, 93.5%) who took part in the study were responded that they never practice on sharing their toiletries (towels, blades nail cutter and scissors etc.) with Hepatitis B infected persons. In contrast, six people (6.5%) agreed that they practice on sharing their toiletries (towels, blades nail cutter and scissors etc.) with

Hepatitis B infected persons. Furthermore, within 92 participants 27 (29.3%) participants never asked questions to the barber to make sure whether he/she changes blade or sharp needle/equipment for ear and nose piercing. However, majority of the people responded (n= 65, 70.7%) that they make sure and ask questions to the barber whether he/she changes blade or sharp needles/equipment for ear and nose piercing. From the survey it indicates that large number of subjects (n= 47, 51.1%) were never attended any information session on Hepatitis B to get information on Hepatitis B while 45 (48.9%) subjects were attended information sessions on Hepatitis B to get more knowledge on Hepatitis B.

CHAPTER 5

DISCUSSION AND CONCLUSION

The present cross-sectional study included 100 participants aged between 20 to 40 years old from the residents of Dhaandhoo Island in Maldives. The aim of the study was to investigate the knowledge, attitude and practice (KAP) of HBV infection among the residents in Dhaandhoo Island, Maldives. Nearly, all the people who have taken part in this survey responded that they have some information about HBV, 92 (92%) participants respectively. Moreover, majority of the participants replied (n= 50, 59.8%) that HBV was caused by virus. In addition to that, Participants replied less than mean score (mean <2.2174) on the statement that they were not at risk of getting HBV. Majority of the participants were reacted above mean score (mean>3.65) that the HBV vaccine helps to prevent from getting HBV. However, vast majority of the participants (n= 51, 55%) responded that they never received vaccine against Hepatitis B. Present survey shows that large number of subjects (n= 47, 51.1%) have never attended any information session on Hepatitis B. The results of the study can be used to develop awareness programs and plan interventions to sustain the level of knowledge, attitudes and practices about HBV among the residents of Dhaandhoo Island in Maldives.

5.1.Participants' Knowledge on HBV

People who have participated in the present survey responded that they knew about HBV, 92% participants respectively. However, a study conducted among 176

pregnant women in the Buea Health District (BHD) a whole, majority of the Participants had never heard of the disease called hepatitis (Frambo et.al, 2014). Most of the subject participated in the current study reported that they get information about HBV from; TV, Radio & internet 50%, Health care workers 60% and Newspaper/Leaflets, brochures, posters etc. 16%. Besides, same type of study conducted by Al-Thaqafy et.al, 2012 reported 400 Saudi National Guard personnel, most common sources for getting HBV information were TV/Radio 39.7%, friends 36.9%, and newspapers and magazines 26.9% respectively. Majority of the participants have good knowledge on differentiating causative organism of HBV and replied (n= 50, 6%) HBV was caused by virus. However, Frambo et.al, 2014 found in a cross-sectional descriptive study conducted among 176 pregnant women in the Buea Health District (BHD) 80% of the participants did not know that hepatitis B was a virus. The result of current study revealed that subjects have good knowledge on methods of HBV transmission. This may help to reduce the frequency of HBV. Moreover, regarding sign and symptoms of the HBV maximum number of the respondents replied that jaundice is one of the sign of the HBV (41%) at the same time second largest number of people (37, 37%) replied they don’t know the sign and symptoms of the HBV. As Dahlström & Viberg, 2013 reported that acute stage some patients may develop symptoms such as jaundice, fatigue, nausea, loss of appetite and abdominal discomfort and once they don’t know the sign and symptoms of the HBV in acute phase they may not able to reach proper treatment and the severity of the disease will further escalated (ul Haq et.al, 2012).

Its positive indication that present study shows 49, (53.3%) People were aware about from chronic HB asymptomatic person HBV could transmit to other people. Moreover, 56 (60.9%) people were responded that sharing eating and drinking

utensils would not transmit Hepatitis B. It is good sign that people were having good knowledge on transmission of HB but at the same time it is important to deliver health education session to fill rest of the gap to keep all people mindful about the transmission of HBV and misperception on HBV. However, misperception on spreading of HBV from asymptomatic person to healthy person and transmission of HBV by sharing eating and drinking utensils were existed in a study conducted by Mohamed et.al, 2012 in Malaysia, and Wai.et.al, 2005 in Singapore. Both study shows participants did not know that chronic HBV can be asymptomatic and may pass on the virus. Furthermore, misperception on sharing eating and drinking utensils could transmit HBV also further heighted in both studies. As a result, in both studies also highlighted that this may lead to isolation, anxiety and stigma in the society.

5.2.Participants' Attitudes towards HBV

Participants' attitude was low (mean = 2.22) on the statement that they were not at risk of getting HBV. However, a cross sectional assessment of knowledge, attitude and practice towards Hepatitis B among healthy population of Quetta, Pakistan shows that, almost high number of the respondent (n=622,79.7%) believed that they can never become infected with HB (ul Haq et.al, 2012). Hence, based on present study result it shows that participants agree that in the surrounding environment there are risk factors which may expose them for getting HBV.

On the other hand, respondents attitude was quite high (mean = 3.46) on the statement if they would have developed HBV's sign and symptoms, they would prefer to consult medical officers instead of traditional healer. Taking immediate medical treatment helps to stop further deterioration of the disease conditions and help as tool to stop spreading diseases further too. However, same type of study conducted in Pakistan, ul Haq et.al, 2013 reported in a cross-sectional assessment of knowledge,

attitude and practice among Hepatitis-B patients in Quetta, 73.6% (n= 248) of the study respondents used CAM (Complementary and Alternative Medicine) treatment for the HBV infection before consulting medical practitioner.35.9% participants agreed that treatment and screening program of Hepatitis B is quite expensive than affordable. Hence it may be one of the indications that participants did not prefer HBV screening to clear their HBV status. Similarly, ul Haq et.al, 2013 reported in a cross-sectional assessment of knowledge, attitude and practice among Hepatitis-B patients in Quetta, Pakistan, (n= 182, 46.7%) nearly half of the patients perceived HB treatment as expensive, so it may be one of the reasons in Pakistan for people to use alternative treatments.The results in the current study revealed that most of the participants spreading HBV in the community/family was a concern (mean = 3.5). Moreover, a study conducted among 483chronic HBV who attended in an adult outpatient hepatology clinic at the University of Malaya Medical Centre (UMMC), half of the participants were worried about spreading HBV to their family and friends (Mohamed et.al, 2012).

5.3.Participants' practices towards HBV

Present study shows, 47 (51.1%) respondents were under gone for Hepatitis B screening. However, a cross sectional descriptive study conducted in Quetta city, Pakistan reported, 96.9% of the participants (n=756) were never gone for HB screening (ul Haq et.al, 2012). Therefore, present study gives a clue that most of the participants want to knew about their health status on HBV and with the help of screening they can take preventive measures to get ride from HBV. Furthermore, with the help of screening program HBV people can be detected and helps to seek further investigation and management before their conditions are deteriorated. Moreover, if quite high number of participants took part for screening on HBV also the present

study revealed that vast majority of the participants (n= 51, 55%) responded that they never received vaccine against Hepatitis B. Moreover, 86.8% of the respondents (n= 674) stated a negative immunized status against HB in a study conducted in Pakistan by ul Haq et.al, 2012. However, Lavanchy, 2004 suggested that vaccination is the most protective mechanism for preventing the transmission of HBV which has found so far. It is important to conduct wide vaccination program by focusing on most vulnerable group for the betterment of preventing HBV.

Out of 92 participants common number of people responded (n= 65, 70.7%) that they make sure and ask questions to the barbers whether he/she changes blade or sharp needles/equipment for ear and nose piercing. However, an observational study conducted at Pakistan in six month duration by Ur-Rehman et al., 2011 within one hundred patients who are nose and ear piercing. Ur-Rehman et al., 2011 reported that, 35 patients had hepatitis B and 10 had both Hepatitis B and Hepatitis C and ul Haq et.al, 2013 also notified that, 75.1% of participants (n=293) responded they had never make sure that by asking their barber to use safe and clean equipment before nose and ear piercing or use new blade. Moreover, Heymann, 2004 emphasized that, sharing of certain toiletries such as razors, toothbrushes, trimmers and towels act as a vehicle for the transmission of HBV. Compare to previous studies conducted in Pakistan, Current study shows participants were aware that the sharing instruments used by barbers for hair cutting, nose and ear piercing would be a source to transmit HBV.

In the current study, large number of subjects (n= 47, 51.1%) were never attended any information session on Hepatitis B to get information on Hepatitis B. Similarly, same type of study conducted in Pakistan ul Haq et.al2012 highlighted that 1.8% of respondents (n = 14) have ever attended any educational program on HB. Hence, it's

important to encourage people to attend health education sessions and provide information as much as possible on HBV to improve peoples' knowledge, attitudes and practices. Meanwhile, Al-Thaqafy et.al, 2013 report in after pre- and post-education assessment of KAP of HBV infection within Saudi National Guard of four hundred participants, correct attitude in vigilantly dealing with an infected household person and not supporting isolation of that infected person from work or daily activity before pre- education assessment was 45.3% and 33.8% but after post education assessment it was increased69.8% and 93.3% respectively. So, this is a positive indication that by attending health education session, people's knowledge, attitude and practices may improve.

5.4. Conclusion

In conclusion, current survey revealed that almost all the people who have taken part in the survey responded that they had some information about HBV. Furthermore, Majority of the people were aware about the causative organism of the HBV. Even though, most of the people were not aware of the sign and symptoms of the HBV, they had good knowledge on transmission of HBV. Meanwhile, maximum numbers of people believe that, they were at risk of getting HBV. In contrast, quite high number of respondents strongly agreed that HBV vaccine helps to prevent from getting HBV, but vast majority of the participants said that they had never received vaccine against HBV. Moreover, the study indicates that large numbers of subjects were never attended any information session on HBV. Therefore, in the light of the result it is important to run extensive health education program and encourage vaccination to prevent further spreading of HBV within the community.

5.5. Limitations of the study

Considering sample size in representative way of entire GA. Atoll people help to bring collective betterment situation of Hepatitis B in GA. Atoll because of budget constrain and self-funding only Dhaandhoo people were included as a sample size in the study.

5.6. Recommendation

5.6.1. Recommendations for implementation

Present study found that most of participants believed that they were at risk of getting HBV. Thus, it is important to identify those risky behaviors, conditions and as soon it is important to take immediate action to eliminate those risky behaviors and conditions. Though, majority of the participants agreed that vaccine is an important tool for protecting against HBV but the present study revealed that somewhat high figure without vaccinating. Therefore, it is vital to conduct community based high vaccine coverage program in order to vaccinate people in the community for the purpose of protecting against HBV. In addition, most of the participants had never attended health education session on HBV. So, Health Centre's management can initiate health education programs with collaborations of NGOs, government institutions and private sector for delivering health education session on HBV to general public.

5.6.2. Recommendation for policy makers

With the help of current study findings, policy makers can review present policies; rules and regulation on HBV for strengthen to combat further spreading of HBV in the communities and national level too. Moreover, it is important to make policies for specifying availability of medications, vaccine and screening program for HBV at a cheaper rate for the citizen of the country in an affordable way.

5.6.3. Recommendations for further research

Further research is needed at island and national level have to evaluate and find those risky behaviors and conditions which are escalating risk for spreading HBV in the community.

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APPENDICES

Appendix A: Participant's information sheet
Dear Participant,

I am student of faculty of health sciences, Maldives National University. I am doing my Bachelor degree on Primary Health Care at faculty of health sciences. As a part of my degree program, I have to submit research project by selecting a problem for the study purpose. Hence, I have chosen research topic as hepatitis B and my research tittle was "**A cross-sectional assessment of knowledge, attitudes and practices towards hepatitis b among the residents in Dhaandhoo Island, Maldives**". In this study 155 people from aged between 20 to 40 years was included.

The main aim of this study is to assess factors that influence spreading Hepatitis B among the residents in Dhaandhoo Island, Maldives. There are no risks to you if you participate in this research. I would like you to fill a questionnaire and your contribution in this study is voluntary. The answers which you're giving are unnamed and keep as confidential. Information will be utilized only for academic purpose and it is not going publish anywhere. You have right to withdraw your questionnaire at any time without any prior notice.

If you prefer not to participate in this study, you don't have to justify and tell the reasons. Your valuable time for spending by filling questionnaire will be given an effort to understand the present situation on Hepatitis B in the island.

If you have any question in relation with any part of this study your most welcome.

Thank You.

Student name: Raoof Kamal

Phone no: 9705795

Email address: s003001@student.mnu.edu.mv

Appendix B: Informed Consent Form

I, under signed person, confirm that I understood information about the project which has provided in participant information sheet. I have been given opportunity to ask question about the project and my participation without any hindrances. To participate in this study I choose voluntarily without any force. I can withdraw my questionnaire at any time without any prior notice. If I prefer not to participate in this study, I don't have to justify and tell the reasons. The answers which I am giving are unnamed and keep as confidential and use of data in this research has been explained to me.

Please indicate (✓) below if you wish to participate or decline to do so:

I wish to participate ☐

I do not wish to participate ☐

Name of the participant:…………………………….

Signature of participant:……………………………..

Phone number:……………...

Thank You for Your Cooperation

Appendix C: Informed Consent Form (Dhivehi translation)

بسم الله الرحمن الرحيم

ދިރާސާގައި ބައިވެރިވާ ފަރާތްތަކަށް ދެވޭ މަޢުލޫމާތު ކަރުދާސް:

ދިރާސާގައި ބައިވެރިވާ ފަރާތަށް،

ވެދުން ސަލާމަށްފަހު ދަންނަވަމެވެ.

އަޅުގަނޑަކީ، ދިވެހިރާއްޖޭގެ ޤައުމީ ޔުނިވަރސިޓީގެ ފެކަލްޓީ އޮފް ހެލްތު ސައިންސަސް އިން ޕްރައިމަރީ ހެލްތު ކެއަރ އިން ޑިގްރީ ފުރިހަމަކުރުމުންދާ ދަރިވަރެކެވެ. އަޅުގަނޑުގެ ކޯހުގެ އެއް މޮޑިއުލް ކަމުގައިވާ "ރިސާޗް އިން ހެލްތު" ގެ ދަށުން ކޮންމެވެސް ސިއްހީ މައުޟޫޢެއް ނެގުމަށްފަހު، އެމައުޟޫޢަކާ ދިރާސާކުރުމާއި ތަޙްޤީޤުކުރުން އެސައިމަންޓްގެ ބޮޑު ބައި ހުށަހަޅަން ޖެހެއެވެ. މިގޮތުން އަޅުގަނޑު މައުޟޫޢުގެ ގޮތުގައި ނަގާފައިވަނީ ހޮސްޕިޓަލް-ބޭސްޑެވެ. އަދި އަޅުގަނޑުގެ ދިރާސާގެ ސުވާލަކީ "ގދ. ތިނަދޫ ރީޖަނަލް ހޮސްޕިޓަލްގައި ހޮސްޕިޓަލް-ބޭސް އާއި ޑެލިވަރީސް ހުރި މަޢުލޫމާތުތަކާއި، ދުވާލެއްގެ އަދި އަމަލުކުރާ ބަދަލުކުރުމުގެ ބޭނުން"މިއެވެ.

މިދިރާސާގައި ބައިވެރިކުރުވާނީ އުމުރުން 20-40 އަހަރާއި ދެމެދުގެ އަންހެން އަދި ފިރިހެނުންގެ ޖުމްލައިން 100 މީހުންނެވެ. މިދިރާސާގައި ޝާމިލުކުރާނީ ބައިވެރިވުމަށް އެއްބަސްވާ ކަމަށް ބަޔާންކޮށް ލިޔުމުގައި ސޮއިކުރާ ފަރާތްތަކެވެ. އަޅުގަނޑުގެ އުސޫލަކީ މި މައުލޫމާތު ކަރުދާހާއި އެކުގައިވާ ސުވާލުކަރުދާސް ފުރިހަމަކޮށްދެއްވުމެވެ. އަދި ތިޔަފަރާތުން މިދިރާސާގައި ބައިވެރިވެވަޑައިގަތުމަކީ އަމިއްލަ އިޚްތިޔާރުގައި އެއްވެސް މަޖުބޫރުކުރުމެއްނެތިއެވެ. ދެއްވާ ޖަވާބުތައް ދެއްވަން އެއްވެސް ގޮތަކަށް ނަންބަރާއި ނަން ކުރުމުގައި ނުޖެހޭ އަދި ޖަވާބުތަކުގެ ސިއްރު ހިފެހެއްޓޭނެއެވެ. ދެއްވާ މައުލޫމާތުތައް ހަމައެކަނި ބޭނުން ކުރެވޭނީ މިދިރާސާގެ ބޭނުމަށް ހަމައެކަނި ކުރެވޭނެއެވެ. އަދި އެމައުލޫމާތުތައް އެއްވެސް ފަރާތަކާއި ހިއްސާ ނުކުރާނެކަމަށް ދަންނަވަމެވެ. ސުވާލުގެ ކޮންމެ ހިސާބަކުންވިޔަސް ދިރާސާއިން މައުލޫމާތު ދެއްވުން ހުއްޓުވައި ނުކުމެވަޑައިގަތުމުގެ އިޚްތިޔާރު ތިޔަފަރާތަށް ލިބިގެންވާނެއެވެ. އަދި މިގޮތުން ނުކުމެވަޑައިގަތުމަކީ، ތިޔަފަރާތުން ވަކި ސަބަބެއް ބަޔާންކުރައްވަން ޖެހިވަޑައިނުގަންނާނެއެވެ. ތިޔަފަރާތުގެ އަމިއްލަ މަޢުލޫމާތުތަކުގެ ސިއްރު ހިފެހެއްޓުމަށް ކޮންމެ ސުވާލުކަރުދާހެއްގައި ވަކި ކޯޑު ނަންބަރެއް ދެވިފައިވާނެއެވެ. މިގޮތުން ތިޔަފަރާތުގެ ނަމުގެ ބަދަލުގައި ބޭނުން ކުރާނީ ކޯޑު ނަންބަރެވެ. މި ދިރާސާގެ އެއްވެސް ހިސާބެއްގައި ބައިވެރިވާ ފަރާތްތަކުގެ ނަން ފާޅުކުރެވޭނެ ގޮތެއް ނުވާނެއެވެ.

ޝުކުރިއްޔާ!

ދަރިވަރުގެ ނަން: ރައޫފް ކަމާލް

ފޯނު ނަންބަރު: 9705795

އީ. މެއިލް އެޑްރެސް:s003001@student.mnu.edu.mv

ފެކަލްޓީ އޮފް ހެލްތު ސައިންސަސް

ދިވެހިރާއްޖޭގެ ޤައުމީ ޔުނިވަރސިޓީ

Appendix D: Informed Consent Form (Dhivehi translation)

بسم الله الرحمن الرحيم

އިޢުތިރާފު ނުކުރާކަމުގެ ފޯމު

އަޅުގަނޑަކީ (ޓީޗަރުގެ ނަން ބާރަށްކިޔާފައިވާ ފަރާތް)، "ދިރާސާގައި ބައިވެރިވާ ފަރާތްތަކަށް ދޭ މަޢުލޫމާތު ކަރުދާސް" އިން މި ޕްރޮޖެކްޓާއި ބެހޭގޮތުން މަޢުލޫމާތު ލިބިފައެވެ. އަޅުގަނޑު މިދިރާސާގައި ބައިވެރިވުމަށް އަމިއްލަ އިޚްތިޔާރުގައި އެއްބަސް މަޢުލޫމާތުލިބުމުންނެވެ. އަޅުގަނޑު ދޫ ޗަފާބޭއް ދޫސް އެއްބަސްވާތީކަން ނަންބަރާނުކުރުމުގެ ނޯޓް އަދި ޗަފާބޭގެ ސިއްޙަތު ހިފެހެއްޓޭނެކަން އެނގިގެން އަދި އަޅުގަނޑު ދޫ މަޢުލޫމާތު ހޯދުމަށް ބޭނުން ކުރެވޭ މިއުސަރު [illegible] އަޅުގަނޑު ކުރަންވާނެ އެގޮތުން އެނގިފައެވެ. އަދި އެމަޢުލޫމާތު އެއްވެސް ފަރާތަކާއި ހިއްސާނުކުރެވޭނެކަން އެނގޭ ގޮތަށެވެ. ސާރވޭގެ ކޮންމެ ސުވާލަކަށް ޖަވާބުދިނުން އަޅުގަނޑު ދީ ފަހަރު މަޢުލޫމާތު ކެރިން އެންމެހާ ނުލައި ނުދޭ އިޚްތިޔާރު އަޅުގަނޑަށް ލިބިގެންވާ ކަމެވެ. މިގޮތަށް ނުދޭގޮތުގައި، އަޅުގަނޑު ދޫ ސަބަބެއް ބަޔާންކުރަން ނުޖެހޭނެއެވެ.

ތިރީގައިވާ ގޮތް ބަލާއިން ބޭނުންވާ ގޮތެއް މިފަދަ (✓) ޖަހާލާށެވެ.

އަޅުގަނޑު މިދިރާސާގައި ބައިވެރިވާން ބޭނުމެވެ. ☐

އަޅުގަނޑު މިދިރާސާގައި ބައިވެރިވާން ބޭނުމެއް ނުވެއެވެ. ☐

ބައިވެރިވާ ފަރާތުގެ ނަން:....................................

ބައިވެރިވާ ފަރާތުގެ ފޯނުނަންބަރު:...........................

ބައިވެރިވާ ފަރާތުގެ ސޮއި:....................................

ތިޔަބޭފުޅާގެ އެއްބާރުލުމަށްޓަކައި ޝުކުރިއްޔާ!

Appendix E: Questionnaire (English Version)

A CROSS-SECTIONAL ASSESSMENT OF KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS HEPATITIS B AMONG THE RESIDENTS IN DHAANDHOO ISLAND, MALDIVES

This questionnaire has been designed with the purpose of using the information to investigate knowledge, attitude and practice towards Hepatis B among the residents in Dhaandhoo Island, Maldives.

S. No: [Don't fill]

Instructions:

This questionnaire consists of four (IV) parts, Part I,Part II, Part III &Part IV. Kindly please attend all the questions included in four parts.

This question paper consist 29 questions and total 3 pages.

Please fill age and income in numerical number.

Tick (✓) the most appropriate box.

Part I. Demographic characteristics:

1. Age: ☐

2. Gender:
a).Female ☐
b).Male ☐

3. Marital status:
a).Married ☐
b).Single ☐
c).Divorce ☐
d).Widowed ☐

4. Occupation:
a).Unemployed ☐
b).Government employed ☐
c).Private employed ☐
d).Self employed ☐

5. Educational Level:
a).Basic education ☐
b).Primary ☐
c).Secondary ☐
d). Higher Secondary ☐
5. Graduate and above ☐

6. Income: ☐

Part II. Knowledge:

7. Do you have any information about Hepatitis B?

a). Yes ☐ b). No ☐

(If "NO" Please stop filling rest of the questions)

8. Where you get information about Hepatitis B?

a).TV, Radio & internet ☐ b).Health care workers ☐

c).News paper/Leaflets, brochures, poster etc. ☐ d).Others:.....................

9.Does Hepatitis B caused by a virus?

a). Yes ☐ b).No ☐ c). Don't know ☐

10. What are the methods of HBV transmissionv? (Please tick as many as you know)

a).Contaminated blood or blood products ☐

b).Sharing needles and syringes ☐

c).Shaking hands ☐

d).Sharing used blades of the barber or ear and nose piercing products ☐

e).Coughing/Sneezing ☐

f).Sharing food with an infected person ☐

g). Mother to baby ☐

h).Unsafe sex ☐

i).Water drinking ☐

j).Don't know ☐

11. What are the sign and symptoms of Heapatitis B? (Please tick as many as you know)

a).Excessive hunger ☐ b).Sweating ☐

c).Vomiting ☐ d).Abdomina pain ☐

e).Excessive talk ☐ f).Nausea ☐

g).Jaundice ☐ h).Loss of appetite ☐

i).Don't know ☐

12. Does Hepatitis B cause liver cancer?

a). Yes ☐ b).No ☐ c). Don't know ☐

13. Dose Heaptitis B is curable disease?

a). Yes ☐ b).No ☐ c). Don't know ☐

14. Is a vaccine found for Hepatitis B?

a). Yes ☐ b).No ☐ c). Don't know ☐

15. If a person confirmed as Hepatitis B but do not present any signs and symptoms, do you think from that person Hepatitis B will transmit?

a). Yes ☐ b).No ☐ c). Don't know ☐

16.Does Sharing eating and drinking utensils would transmit Hepatitis B?

a). Yes ☐ b).No ☐ c). Don't know ☐

Part. III Attitude:				
Statements	**Strongly disagree**	**Disagree**	**Agree**	**Strongly agree**
17.I am not at risk for getting HBV				
18.If a person positive for hepatitis B, he /she may face isolation in the community				
19.If I would have developed Hepatitis B's sign and symptoms I would prefer to consult medical officers instead of traditional healer				
20.In my point of view, it's better to seek treatment for Hepatitis B before it gets worse than waiting for own treatment result				
21.Treatment and screening program of Hepatitis B is quite expensive than affordable				
22.Hepatitis B vaccine helps to prevent from getting Hepatitis B				
23. In a married couple if one person positve for HBV also, another person will not get HBV				
24. Spreading HBV in the community/family is not a concern				

Part.IV Practice:

25. Do you ever under gone for Hepatitis B screening program?

a). Yes ☐ b).No ☐ c). Don't know ☐

26. Have you received vaccine against Hepatitis B?

a). Yes ☐ b).No ☐ c). Don't know ☐

27. Do you share toiletries (towels, blades nail cutter and sicsors etc.) with Hepatitis B infected persons?

a). Yes ☐ b).No ☐

28.Do you ask barber to change blade or do you share sharp need/equipment for ear and nose piercing?

a). Yes ☐ b).No ☐

29. Have you ever attended any information session on Hepatitis B?

a). Yes ☐ b).No ☐

YOUR ANSWERS WILL BE TREATED AS STRICTLY CONFIDENTIAL

THANK YOU FOR YOUR CO-OPERATION

Appendix F: Questionnaire (Dhivehi Version)

[illegible]:

[illegible] 40-20 [illegible]

[illegible]:

1. [illegible] (4) [illegible]
2. [illegible] (✓) [illegible]
3. [illegible]

1. [illegible]:

1. [illegible]
2. [illegible]
   - [illegible]
   - [illegible]
3. [illegible]:
   1. [illegible]
   2. [illegible]
   3. [illegible]
   4. [illegible]
4. [illegible]:
   1. [illegible]
   2. [illegible]
   3. [illegible]
   4. [illegible]
5. [illegible]:
   1. [illegible]
   2. [illegible]
   3. [illegible]
   4. [illegible]
   5. [illegible] / [illegible]
   6. [illegible]
7. [illegible] / [illegible]؟
   1. [illegible]
   2. [illegible]
   3. [illegible]
   4. [illegible]
   5. [illegible]:..

2. [illegible]

8. [illegible]

1. [illegible]　2. [illegible] [illegible]

9. [illegible]

1. [illegible]　2. [illegible]

10. [illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]

11. [illegible]

[illegible]

1. [illegible]　2. [illegible]
3. [illegible]　4. [illegible]
5. [illegible]　6. [illegible]
7. [illegible]　8. [illegible]

12. [illegible]

1. [illegible]　2. [illegible]

13. [illegible]

1. [illegible]　2. [illegible]

14. [illegible]

1. [illegible]　2. [illegible]

15. [illegible]
[illegible]?

1. [illegible] ☐ 2. [illegible] ☐

16. [illegible]?

1. [illegible] ☐ 2. [illegible] ☐

3. [illegible] ([illegible]):

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17. [illegible]					
18. [illegible]					
19. [illegible]					
20. [illegible]					
21. [illegible]					
22. [illegible]					
23. [illegible]					
24. [illegible]					

4. [illegible]):

25. [illegible]?

1. [illegible] ☐ 2. [illegible] ☐

26. [illegible]?

1. [illegible] ☐ 2. [illegible] ☐

27. [illegible]?

1. [illegible] ☐ 2. [illegible] ☐

28. [illegible] / [illegible]?

1. [illegible] ☐ 2. [illegible] ☐

29. [illegible]?

1. [illegible] ☐ 2. [illegible] ☐

[illegible]!

Appendix G: Dhaandhoo Island Map

* Goathi dhinumah- 17 block (40' x 40') - Total 100 Goathi
* Mosque - 1 block (120' x 120')
* Dhaandhoo majistrate court - 1 block (150' x 100')
* Council idhaara (office) - 1 block (150' x 100')
* Dhaandhoo Police - 1 block (200'x 100')
* Play ground - 1 block (140' x 80')
* Park zone -8 block
* kuni koshi - 1 block
* Wiyafaari bin -3 blocks (No- 1 (45'x120') No- 2 (45'x69') No- 3 (45'x211)
* Job Traning Center - 1 Block (80'x80')
* Ferry terminal - 1 block (40' x 135')
* Wiyafaari bin - 9 blocks - (25' x 50')
* Odiharuge bin - 3 blocks - (50' x 100')

2014 vana aharu bimuge budget gai himenumah edhey bin thah

X 31 Bin:

BLOCK 26: (1-9)
BLOCK 27: (10-18)
BLOCK 28: (19-21)
BLOCK 29: (22-23)
BLOCK 30: (24-25)
BLOCK 31: (26-28)

Appendix H: Time line

No.	Activity (s)	Year: 2015						Responsible person
		September			October			
		1st week	2st week	3st week	1st week	2st week	3st week	
1	Pre-testing questionnaire							Raoof Kamal
2	Revising questionnaire after pre-test							Raoof Kamal
3	Training field officers							Raoof Kamal
4	Collecting filed data							Field officers
5	Analyzing data							Raoof Kamal
6	Preparing draft of study							Raoof Kamal
7	Expected date of final study							Raoof Kamal
8	Submission of final study							Raoof Kamal
9	Presenting Dissertation							Raoof Kamal

Appendix I: Budget

Qty	Description	Rate (MVR)	Amount (MVR)
	Human resources (salary)		
1	Field coordinator	1,750.00	1,750.00
5	Field officers	1,400.00	7,000.00
	Training sessions		
	Hiring place to conduct training session	1,500.00	1,500.00
	Equipment		
2	Laptop	8,000.00	16,000.00
1	Printer	3,500.00	3,500.00
1	Multimedia projector (Hiring)	500.00	500.00
	Stationaries		
20	Pen	2.00	40.00
20	Pencil	7.00	140.00
20	Paper file	10.00	200.00
1	Papa clip (box)	10.00	10.00
10	Ruler	5.00	50.00
10	A4 Ream	150.00	1,500.00
10	Note pad	10.00	100.00
	Expenses for duplication		
	Printing questionnaire & other documents		2,000.00
1	Printing final study	150.00	150.00
	Food		
5	Field officers	420.00	2,100.00
1	Field coordinator	420.00	420.00
	Accommodation		
1	Field coordinator	1,750.00	1,750.00
	Transportation		
2	Flight ticket	3,000.00	6,000.00
2	Launch ticket	500.00	1,000.00
Total: (Forty five thousand seven hundred & ten rufiyaa)			**45,710.00**