REASON OF INCREASING NUMBER OF HTN CASES IN DH. KUDAHUVADHOO

FATHIMATH ZOONA

THE MALDIVES NATIONAL UNIVERSITY

November, 2016

REASON OF INCREASING NUMBER OF HTN CASES IN DH. KUDAHUVADHOO

FATHIMATH ZOONA

A Project submitted in partial fulfillment of the requirements for the degree of

Bachelors in Primary Health Care

Faculty of Health Sciences

The Maldives National University

November, 2016

DECLARATION

Name: Fathimath Zoona

Student Number: 000003117

I hereby declare that this Project is the result of my own work, except for quotations and summaries which have been duly acknowledged.

Signature: Date: 14/11/2016

REASON OF INCREASING NUMBER OF HTN CASES IN DH.KUDAHUVADHOO

FATHIMATH ZOONA

November, 2016

ABSTRACT

As Non communicable disease (NCD) has become a burden to medical practitioners to deal and is leading factor of mortality to world's most population. Hypertension (HTN) is the shocking NCD in the world which affect most of the adults. The main aim of this study is to identify the reasons for increasing Hypertension cases in Dh.Kudahuvadhoo. A cross sectional descriptive research design were used in this research. A questionnaire was used to collect data in this study. Statistical software, Statistical Package for Social Sciences (SPSS) was used to analyze data. Among the respondents 68 out of 90 participant they have family history of NCD. The main finding of the research was 44.4% of the respondents said that they have family history of Hypertension.

Key words: Hypertension, Non-Communicable Disease, Adults, Kudahuvadhoo

ACKNOWLEDGEMENTS

I would like to acknowledge the efforts, support, guidance and encouragement of various people who have made it possible for me to carry out this study.

I wish to express my heartfelt gratitude to my supervisor, Mr. Shaheeb Abdhl Azeez for his patience, guidance, encouragement and support in supervising the outlook of this dissertation. I would like to thank him for spending valuable time and providing valuable comments and ideas which helped to shape the focus and content of this study.

I am grateful to all lecturers for the support and encouragement throughout the studies. Kindly I would like to thank field officers who were given assistants for collecting filed data and all the respondents for answering my questions and allowing me to complete this study.

In addition, I must thank all the participants of this study. Whom, without their cooperation it would have been impossible to complete this research project.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

HTN: Hypertension

DHAH: Dh. Atoll Hospital

OPD: Out Patient Department

DALYS: disability adjusted life years

WHO: World Health Organization)

MOH: Ministry of Health

DASH: Dietary Approaches to Stop Hypertension

NCD: Non Communicable Disease

CHAPTER ONE: INTRODUCTION

1.1 Back ground of the study

Hypertension (HTN), also known as high or raised blood pressure is a condition in which the blood vessels have persistently raised pressure. Blood is carried from the heart to all parts of the body in the vessels. Each time the heart beats, it pumps blood into the vessels. Blood pressure is created by the force of blood pushing against the walls of blood vessels (arteries) as it is pumped by the heart. The higher the pressure the harder the heart has to pump (World Health Organization, 2013).

Normal adult blood pressure is defined as 120 millimeters of Mercury (mmHg) and Diastolic blood pressure of 80 mmHg. Worldwide, raised blood pressure is estimated to cause 7.5 million deaths, about 12.8% of the total of all deaths. This accounts for 57 million disability adjusted life years (DALYS) or 3.7% of total DALYS (World health organization, 2015). Global overall prevalence of raised blood pressure in adult age 25 and above was around 40% in 2008. Number of people with Hypertension (HTN) rise from 600 million to nearly 1 billion in 2008.this is because of increased population and increased aging population. (World health organization, 2015).

1.2 Problem Statement and justification

According to the World Health Organization (WHO), disease attributable to hypertension is the number 1 cause of mortality in the world. Hypertension is a major risk factor for cardiac disease and stroke, with an increase in risk for these ailments with progressively higher blood pressures. High blood pressure is the second-leading cause of end-stage renal disease, and its presence increases the rate

of progression of all kidney diseases (KO, 2010). Current hypertension statistics in Maldives indicate, 124.8% men and 123.1% women are suffering from HTN. Number of HTN cases in DH. Kudahuvadhoo is 200 from a total population of 2667. And number of cases is increasing year by year in Kudahuvadhoo. Last year the number of HTN cases is 150.

1.3 Purpose of the study

This study is an important study to identify the reason of increasing number of HTN cases in Kudahuvadhoo.

1.4 Objectives of the study

1.4.1 General objective

- ♥ To identify knowledge and attitude towards risky behaviors which leads to HTN among the target age group

1.4.2 Specific objectives

- ♦ To understand the risky behavior of HTN in Dh.Kudahuvadhoo
- ♦ To identify the knowledge among the target population of Dh.Kudahuvadhoo about HTN
- ♦ To identify the life style of the target age group in Kudahuvadhoo

1.5 Research questions

- ♦ How to change unhealthy life style of the target population to minimize the risk factors of HTN?
- ♦ What are the risk behaviors among the target group of Dh. Kudahuvadhoo that leads to HTN?
- ♦ How aware are the community of Dh. Kudahuvadhoo regarding HTN?

- Is the target population lifestyle in a manner that can lead to HTN

1.6 Significance

As the number of hypertension cases is increasing day by day in Dh.Kudahuvadhoo and to identify reasons is very important. It is to minimize the causes and to have a healthy population. By doing this study it will be helpful to those who are at risk of getting HTN and to change their risky behaviors. The results of this study will be an aid to policy makers, program implementers, and health sector, to deal with existing barriers of increasing HTN.

This study will also be helpful to Ministry of Health (MoH) to organize and arrange health awareness programs based on the findings of the study. This study will be helpful to Atoll hospital of kudahuvadhoo because they can conduct awareness programs in order to minimize the increasing the cases based on the result of this study.

This can be utilizing as a baseline survey for the future research on the same study area. Therefore, this will be an added knowledge for the academia.

1.7 Delimitations/Scope of the Study

Since this study will be carried out only in Dh.Kudahuvadhoo, this result will not show the whole picture of HTN in Maldives or in other islands.

CHAPTER TWO: LITRATURE REVIEW

2.1 Introduction

Chapter two is based on the literature reviews about hypertension. In the literature review I have looked into the factors in the conceptual framework. That is the independent and dependent variables of this research project. This includes what is hypertension, risk factors of hypertension and preventive measures to be taken to prevent HTN. At the end of this chapter is the theoretical framework of this study.

2.2 What is hypertension?

Hypertension is a condition in which blood through the vessels flows with higher pressure than normal. Blood pressure reading provides two measures. Systolic pressure and diastolic pressure. Systolic pressure measures the pressure in the arteries when the heart beats (when the heart muscle contracts). Diastolic pressure measures the pressure in the arteries between heartbeats (when the heart muscle is resting between beats and refilling with blood). When heart beats, it pushes blood through arteries to the rest of the body. When blood pushes harder against the wall of the arteries the blood pressure goes up (Moore, 2014).

Blood pressure of a person may vary in different time of the day. Blood pressure of a person is usually higher when he/she wakeup, after exercise or when he/she is under stress. If a person have higher blood pressure for a short period of time it is considered to be normal. However, if it last for a longer duration it can cause serious health problems (Moore, 2014). High blood pressure or hypertension is often called a “silent killer”, because it can go several years without knowing that the person is having hypertension. Eventually, leading to fatal heart attacks or strokes. When a

person is diagnosed with hypertension he has to follow the regular treatment. Otherwise, it can lead to other diseases like kidney failure, impaired vision, heart attacks or heart failure (Moore, 2014).

In some cases there is no known specific cause for hypertension. Genetic factors may play a role, and when hypertension develops in people below the age of 40 years it's important to exclude a secondary cause such as kidney disease, endocrine disease and malformations of blood vessels. Preeclampsia is hypertension that occurs in some women during pregnancy. It usually resolves after the birth but it can sometimes linger, and women who experience preeclampsia are more likely to have hypertension in later life. Occasionally, when blood pressure is measured it may be higher than it usually is. For some people, the anxiety of visiting a doctor may temporarily raise their blood pressure. Measuring blood pressure at home instead, using a machine to measure blood pressure several times a day or taking several measurements at the doctor's office, can reveal if this is the case (WHO, 2013).

2.3 Types of Hypertension

There are two types of hypertension. Primary hypertension and secondary hypertension (lliades, 2016).

Primary Hypertension — Hypertension of an unknown cause, which result of poor lifestyle choices and genetics. Lifestyle factors that may lead this condition include poor diet (high sodium, low fruit and vegetable intake), tobacco use, limited physical activity, stress, and overweight/obesity (Moore, 2014). This type is clinically diagnosed by the doctors during the patient visits. In general, if the patients are having high blood pressure during last three visits, then considered as primary hypertensive person. People with primary hypertension have no symptoms, sometimes the patient may experience frequent headache, lethargy and dizziness.

Even though the actual cause is unknown obesity, smoking, diet and family history plays an important role in primary hypertension (lliades, 2016).

Secondary Hypertension —Hypertension that arises as a result of another disease, most often associated with the endocrine system (the body's gland system, responsible for secreting hormones) (Moore, 2014). The most common cause of secondary hypertension is defect in arteries supplying blood to the kidney. Other causes include airway obstruction during sleep, diseases and tumors of the adrenal glands, hormone abnormalities, thyroid disease, and too much salt or alcohol in the diet (lliades, 2016).

2.4 Risk of HTN

Risk factors of HTN depend on a person's health conditions, life style and family history of a person. Some of the risk factors cannot be controlled, like; family history and aging. Whereas diet and other risk factors like smoking can be controlled (Center for Chronic Disease Prevention and Health Promotion, 2014).

Hypertension or high blood pressure is most common in adults, but children may be at risk because of poor lifestyles like taking unhealthy diet and lack of exercise which leads to obesity (Mayo Foundation for Medical Education and Research, 2016).

2.5 Lifestyle

Lifestyle change is non-pharmacological treatment for HTN. Lifestyle changes can help to control and prevent high blood pressure, even in a person who is on blood pressure treatment. Increased physical activity, a reduced salt intake, weight loss, increased potassium intake, and an overall healthy dietary pattern, is called the Dietary Approaches to Stop Hypertension (DASH) diet, which helps effectively to

lower BP. DASH diet includes fruits, vegetables and low fat dairy products which reduces the fat and cholesterol (LawrenceJ.Apple, 2003).

2.6 Variables:

2.6.1 Demographic and socio economic factors:

Age: The risk of HTN increases when the person gets older. After completing middle age, or about age 45, high blood pressure is more common in men. However, women are more likely to develop high blood pressure after the age 65 (Mayoclinic, 2014). As people get older the risk is higher to develop hypertension. This is due to lose of flexibility in blood vessels with age be able to contribute to increase pressure throughout the system. Some populations across the globe have minimal rise in blood pressure with aging. In some parts of Mexico, the South Pacific, and other parts of the world, people have very low salt intake. In these areas, the age-related high blood pressure cases are less compared to the U.S (WebMD, 2005 2016).

Family history: If the parents or close blood relatives have high blood pressure, then he/she has a chance of developing the condition too (American Heart Association, 2014). A cross-sectional survey conducted to describe the influence of family history on hypertension prevalence and associated metabolic risk factors in a large cohort of South Asian adults, from a nationally representative sample from Sri Lanka (among 5,000 Sri Lankan adults). From this study results show that the amount of hypertension was knowingly higher in those with a family history of hypertension. Family history of hypertension was also associated with the prevalence of obesity, central obesity and metabolic syndrome (Ranasinghe, Cooray, Jayawardena, & Katulanda, 2015).

2.6.2 Lifestyle and behavior:

***Physical inactivity*:**

Physical activity increases blood flow through all arteries of the body, this leads to release of natural hormones and cytokines that relax blood vessels, as a result lower a person's blood pressure. For the reason that, lack of physical activity increases blood pressure (UCSF Medical Center, n.d.). People who live a sedentary life style have tendency to have higher heart rates. When heart rate increase heart muscles need to work harder in each contraction which gives stronger force on arteries. As a result of physical inactivity, it increases the body weight of a person. Thus, leading to overweight and obesity (Mayo Foundation for Medical Education and Research, 2016).

Elevated blood pressure during childhood and adolescence increases the risk of hypertension in adulthood. Physical activity is a key component of the helpful lifestyle changes recommended for the prevention and treatment of hypertension in children and adolescents. Physical activity is associated with higher systolic BP, pulse pressure levels and lower heart rate in healthy young adolescents. Physical activity should be practiced at a moderate intensity level in everyday life. Physical activity is considered as a key component for the prevention and treatment of hypertension in children and adolescents (Tsioufis , Kyvelou, Tsiachri, & Tolis, 2010).

Being overweight or obese:

Being overweight or obese increases the risk of developing HTN, which means if the Body Mass Index is between 25 and 30 or above. Being overweight increases risks of developing high blood pressure. A body mass index between 25 and 30 is considered overweight. A body mass index over 30 is considered as obese. Excess

weight increases the stress on the heart, raises blood cholesterol and triglyceride levels, and lowers HDL (good) cholesterol levels (American Heart Association, 2016).

The fast increasing number of obesity worldwide represents a serious health problem. Obesity predisposes to increased risk for diabetes, hypertension, and renal failure. Hypertension can be considered the most important cardiovascular risk factor linking obesity to the development of cardiovascular disease. Obesity among children and adolescents has also reached widespread amounts in the developed world. Childhood obesity strongly predisposes to cardiovascular adult mortality. Recent reports documented a tracking of blood pressure from childhood to adulthood and obesity occurring in young age plays a crucial pathogenic role, fighting with overweight and obesity in the pediatric and adolescent age may prevent the occurrence of adults with hypertension and cardiovascular disease. The main strategies for prevention and treatment of overweight and obesity in childhood, which need to involve community, school and family, are the promotion of lifestyle interventions, including as a correct dietary approach, rich in fruit and vegetables and low-fat dairy products, and physical activity (Department of Internal Medicine, National Library of Medicine, 2009).

Using tobacco:

Chemicals in tobacco can damage the lining of the artery walls in the body. Using tobacco causes fast increase in blood pressure and heart rate that keep on more than 15 minutes after one cigarrete. Raised blood pressure and smoking are the two most important risk factor in the Asia-Pacific region. Among smokers myocardial infarction is 2–6 times higher and the risk of stroke is three times higher compared with non-smokers (Huang, 2008).

Smoking and exposure to secondhand smoke have many other effects on a person cardiovascular and overall health, these effects include fatty buildups in arteries, several types of cancer and chronic obstructive pulmonary disease (lung problems). Atherosclerosis (buildup of fatty substances in the arteries) is a chief contributor to the high number of deaths from smoking. Many studies detail the evidence that cigarette smoking is a major cause of coronary heart diseases, which leads to heart attacks (American Heart Assosiation, 2016).

There is great impact of chronic smoking on blood pressure. Cigarette smoking is a strong cardiovascular risk factor and smoking cessation is the single most effective lifestyle measure for the prevention of a large number of cardiovascular diseases. Cigarette smoking highly applies a hypertensive effect, mostly through the stimulation of the sympathetic nervous system (Department of Internal Medicine, 2010).

Too much salt in diet:

Too much salt or sodium in diet can cause body to retain fluid, and cause arteries to constrict. These both factors increase blood pressure (UCSF Medical Center, xxxx). Salt works on kidney to make body hold on more water. This extra water raises blood pressure and puts stresses on kidney arteries heart and brain. Kidney removes unwanted fluids in the body, kidney use osmosis to straw extra water out of the body. This process use a delicate balance of sodium and potassium to pull the water across a wall of cell from the bloodstream into collecting channel that leads pressure to the bladder. The result is higher blood pressure due to extra fluids and extra strain on the delicate blood vessels leading to kidney disease (Blood pressure UK). WHO recommends that adults should consume less than 2000 milligrams of sodium, or 5 g of salt per day. Sodium content is high in processed foods (WHO, 2013). To reduce

salt intake in population needs action at all level, including the government, food industries, health professionals and the public. Media also can play a huge role to reduce salt intake in the communities by sustaining the mass media campaigns which requires to encourage salt reduction in households and communities (WHO, 2013).

Stress:

High levels of stress can lead to a quick increase in blood pressure and relaxation and meditation techniques effectively lower blood pressure (UCSF Medical Center, n.d). Stress can cause hypertension through repeated raise blood pressure and stimulation of the nervous system to produce large amounts of vasoconstricting hormones that increase blood pressure. Factors affecting blood pressure through stress include, job strain, race, social environment, and emotional distress. Furthermore, when one risk factor is involved with other stress producing factors, the effect on blood pressure is increased. Using time management skills and listing out daily work helps to reduce stress (American Heart Association, 2014).

When a person is exposed to long periods of stress his or her body gives warning signs that something is wrong. These physical, mental, emotional and behavioural signs of stress should not be ignored. If a person continues to be stressed he or she must give a break to the body, to minimize the risk of developing health problems. Stress level of a person make worse the disease condition of that person. In 2014, scientists from Massachusetts General Hospital and Harvard Medical School investigating the link between stress and heart attacks reported that stress causes our bodies to make an excess of disease-fighting white blood cells. That in turn can increase inflammation in the arteries of people with a condition called atherosclerosis, where the artery walls are thickened by a build-up of plaque. The impact of stress on the development of hypertension is believed to involve a

sympathetic nervous system response, in which release of catecholamine leads to increase heart rate, cardiac output, and blood pressure (webMD, 2016).

Knowledge:

A research done by department of general practice in Zhongshan Hospital of Fudan University in China shows that people who are aware of high blood pressure related to salt intake' and are willing to receive regular health education are less likely to fail in hypertension control. Moreover, people who do regular checkups ~~as of~~ due to fear of complications were more likely to fail in hypertension control (Zhongshan Hospital of Fudan University, 2013). A cross sectional study conducted within four hospitals, (The Aga Khan University hospital, Ziauddin Hospital and Civil hospital, Karachi) shows that knowledge about hypertension in hypertensive patients is not adequate and threateningly poor in patients with uncontrolled hypertension. More importance needs to be made on target blood pressure and need for taking antihypertensive for life to patients by physician (Almas, Godil, Lalan, Samani, & Khan, 2012).

2.6.2 Hypertension world wide

Hypertension has reached widespread proportions worldwide and significantly contributes to the burden of heart disease, stroke, kidney failure, disability, and premature death. It is estimated that about 17 million deaths occur worldwide because of cardiovascular diseases (CVDs) every year, of which complications of hypertension alone account for 9.4 million deaths. The rate of hypertension is increasing in the developed countries such in the USA, the rate of increase is faster in many low and middle-income countries. Globally, nearly one billion people have high blood pressure out of these two thirds are from developing countries. As increasing the HTN cases in the world in 2025, an estimated 1.56 billion adults will

be living with HTN. Approximately one third of the adult population in South East Asia (SEA) region has high blood pressure (World Health Organization, 2011).

2.7 Theoretical Frame Work

As a theoretical framework to guide this study, Andersen behavioral model is used. This model allows researchers to choose independent variables related their hypothesis. Andersen's model 1968 was created to empirically test hypotheses about inequality of access to health services. This model contains three sets of analytical factors: predisposing, enabling and need factors (Willis, 2010).

2.7.1 Predisposing factors:

Predisposing factors are based on the arguments that the family's tendency to use health services. It includes gender, age, and level of education, family size, which indicates the position of the family in the society that could influence their lifestyle (Willis, 2010).

2.7.2 Enabling factors:

This factor is based on the argument that the family has susceptibility to use health services such as; medical resources, having health insurance and the availability of health services (Willis, 2010).

2.7.3 Need factor:

In this factor, there must first be a need to use that service. For that reason, need factors are included in the model and it contains illness variables and response variables. Though, it is also a must to respond appropriately in order to access health services when the family recognizes there is an illness (Willis.R, 2010). This means,

people's views and experiences on their own general health (Babitsch, Gohl & Lengerke, 2012).

CHAPTER THREE: METHODOLOGY

3.1 Introduction

In this chapter will be looking at the methodology of the study, sample design and the sample size. In addition to this the data collection method and the process use for the data analysis will be describe in this chapter.

3.2 Research Design

Cross sectional descriptive study design and quantitative method will be used in this study. Cross sectional design is carried out at one point over a short period of time. This design is used to estimate the prevalence of the outcome of interest for a given population and to provide informal information about a condition (NEDARC, 2012).

3.3 Study Area

South Nilandhe Atoll Kudahuvadhoo is capital Island of Dh. atoll. Total population of the island is 2998.

3.4 Target population

From 2998 population, Target population for this study is people age group between 25 to 65 aged people in the Island. According to the Island Council total population of this age group is 1574.female 784 Male 790. This age group is selected because this age group will help to know the reason of increasing HTN in the Island.

3.5 Sample Techniques

A simple random sampling technique will be used for sampling. Since the study will be carried out among the people age group of 25 to 65 years there maybe some of

people that cannot read or write. The people who cannot read and write will be excluded.

3.6 Sample size

Sample selected for this study is age group between 25 to 65 years. Sample size for this age group is 91, with confidential 95% and 10% error. To calculate the sample size for this study the online calculator in RAOSOFT (www.raosoft.com) was used.

3.7 Research Instrument

A self-administered -questionnaire was used to collect information. This questionnaire was distributed to the selected population. The questionnaire will be divided into 3 parts. Part A consists of demography, part B consists of knowledge and part c will assess the risk behaviors among the target group.

3.8 Pretesting

The questionnaire was given to staff of Dh. Atoll Hospital (DHAH) Out Patient Department (OPD). This is to do a pre-testing among the patients who are coming to the OPD from the target age group. After conducting pre- test adjustments were brought to the questionnaire accordingly.

3.9 Validity and Reliability

The questions in the questionnaire is based on the objectives of the study. In order to maintain the validity and reliability, a pre-testing of the research instruments was done. The researcher would discuss the questionnaires with health care professionals to make sure that there is no violation of patient's ethical rights and any needed changes to be brought to the questionnaire. The questionnaire will be distributed

after translating into Dhivehi language to make sure that the participants understood it well.

3.10 Data collecting Techniques

A self-administered questionnaire was distributed to the participants, which were divided in to three parts. In the process of data collection a research assistant would be involved. The research assistant was trained before conducting the survey.

3.11 Data Analysis

To analyses the collected data's of the research, statistical package for social science (SPSS) would be used. Final results will be shown in the form of tabulation and graphs.

3.12 Ethical Consideration

All the data collect from participants is only used for research purposes and there will be no physical or psychological harm to participants. An informed consent is provided by explaining rights of the participant before conducting the study. Participants will be free to ask any question to the researcher regarding the questionnaire or the research being conducted. A code will be given to each participant in the questionnaire to maintain the anonymity of the participants. Researcher contact number and email address was given to the participants. Data collected for this research will present in a numerical form and individual participants will not be identified in in this research.

3.13 Conceptual frame Work:

In the conceptual framework of this study, there are dependent and independent variables that interrelate each other. Independent variables of this study are used to

identify the causes of HTN and current status of HTN in the island. The figure (2.1) below is the conceptual framework of this study.

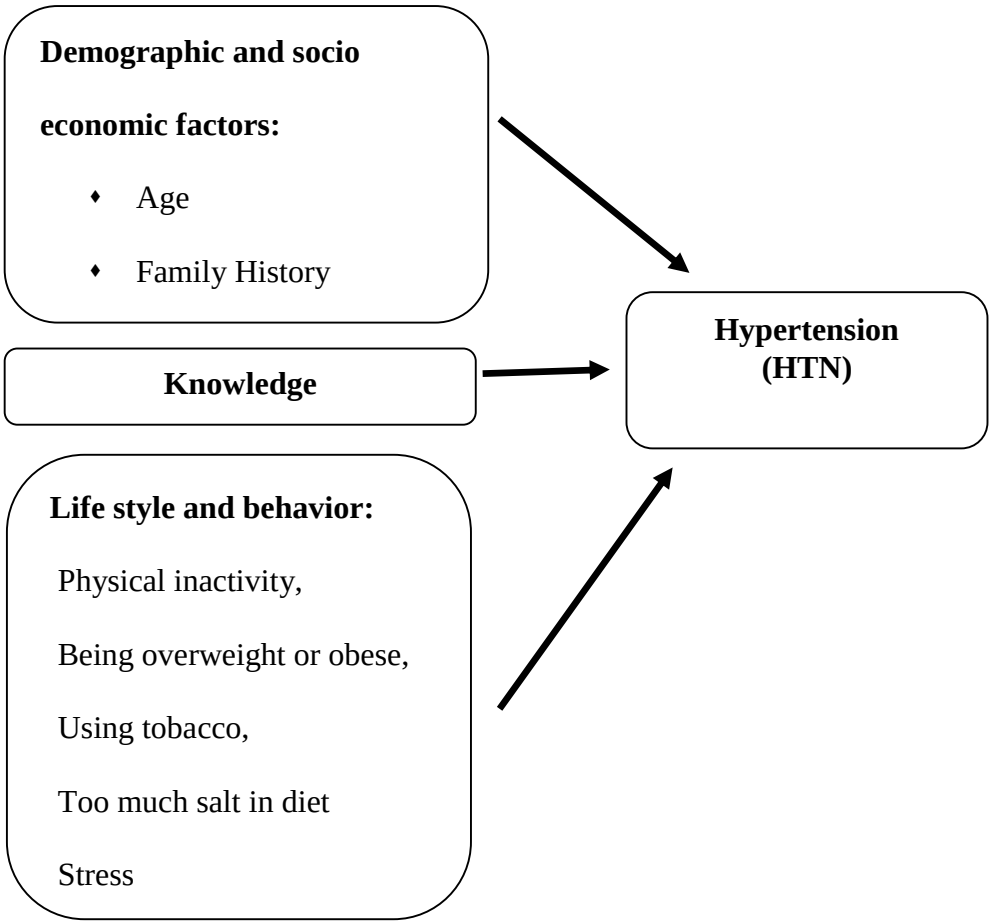

Figure 0.1: Conceptual framework of the study.

CHAPTER FOUR: RESULT AND ANALYSIS

This chapter covers the results of the study, which includes a short description of the results based on the information collected through the questionnaire. Results were represented in the form of tables and figures. Also a brief description of major findings of each question was analyzed. In this study 90 participants were participated, which includes 40 Males and 50 females.

The table 4.1 below shows the frequency percentage of the socio-demographic characteristic of the participants it includes age, gender, occupation and average income of the participants. While the table 4.2 below shows the frequency % of life style of the respondents and table 4.3 below shows the frequency % of the risk factors among the respondent.

4.1 Descriptive statistics

Table 4.1: Frequency percentage of socio-demographic characteristics

Characteristics	Frequency (n = 90)	Percent (%)
Age		
Between 25 to 34	49	54.4
Between 35 to 44	17	18.9
Between 45 to 54	9	10.0
Between 55 to 65	15	16.7
Gender		
Male	40	44.4
Female	50	55.6
Occupation (n= 87)		
None	32	35.6
Government	39	43.3
Private	12	13.3
House wife	4	4.4
Average income (n= 55)		
Less than 2000	5	5.6
3000 to 5000	12	13.3
5000 to 8000	9	10.0
more than 8000	29	32.2

There are 49 out of 90 participants, who represented the age group between 25 and 34 years, it is more than the half (54%) of the selected population. The age group between 35 and 44 (n=17) is 18.9% of total selected population. However, 10% of the study population is people of age between 44 to 54 years old (n=9). Moreover, 16.7% of the study population is people of the age group between 54 to 65 (n=15) years old. The male female participation ratio is 0.8, which 44% and 56% of the study population.

Most of the people are working in the government sector. They were asked regarding their employment of work condition; 39 out of 90 participants (43.3%) said they were working at government offices, 13.3% of them said private offices, 4.4% were house wives and 35% of the respondents said they do not do any work. percentage of not working is 35%, 32 out of 90 respondents, it is almost 1/3rd of the study population.

To identify their income status respondents were separately asked about their average monthly income. 32.2% of the respondents said that they get more than 8000 Rufiyaa per month, 13.3% of the respondents said that they get between 3000 to 5000 Rufiyaa per month, 10% of the respondents said that they get between 5000 to 8000 Rufiyaa per month and the remaining, 5.6% of the respondents get less than 2000 Rufiyaa in a month. Therefore all the participants are getting some short of income varies between MRF 2000 to MRF 8000 per month.

Table 4.1: Frequency percentage of lifestyle of the respondents

Variables	Frequency n = 90	Percent %
Working hours(n=83)		
Not working at all	31	34.4
2 to 5 hours	4	4.4
5 to 8 hours	16	17.8
More than 8 hours	32	35.6
Visit to physician		
once in a month	7	7.8
Once in a week	9	10.0
Rarely	35	38.9
Never	39	43.3
Fruits and vegetable Intake		
Everyday	33	36.7
Twice in a week	7	7.8
Once in a week	10	11.1
Rarely	39	43.3
Never	1	1.1
How often they exercise(n=89)		
Everyday	50	55.6
Once in a week	7	7.8
2 times a day	6	6.7
Never	26	28.9
Reason for not exercising (n=49)		
Don't have time	22	24.4
Don't like	11	12.2
No one is there to go with them	8	8.9
Don't want	8	8.9
Sleeping hours		
8 hours	53	58.9
12 hours per day	9	10.0
2 to 3 hours per day	3	3.3
Don't know	25	27.8
Last visit to physician(n=88)		
Last week	17	18.9
yesterday	27	30.0
A month ago	15	16.7
Never	29	32.2

Table 4.2 shows the frequency percentage of lifestyle of the respondents, which includes their working hours, visit to the doctors, intake of fruits and vegetables, exercising, hours of sleep and when they had their last visit to the doctors. It was clearly seen more than half of the study population (53.4%) works more than 5 hours including 35.6% of the respondents who work for more than 8 hours per day.

Working hours among the respondents, 35.6% of the respondent works more than 8 hours. In addition, 1/3rd of the study population mentioned they did not do any work.

However, to identify frequency of visiting to the physician, it shows the study population did not visit physician often. Because 43.3% mentioned that they rarely visit to the physician while 38.9% agreed that they never visit physician. This can be justified, because in islands mostly medical officers do consultation for non-communicable diseases (NCDs) clinics. If they find patient is needed to be referred for the expert opinions then they refer the patient for the physician for better review.

Moreover, fruits and vegetables are needed to a human being to be in good health and to repair and development of the body cells. It is also important to keep well-balanced diet for a healthy living. Fruits and vegetables contain lots of vitamins and minerals which help for the well-being of the vital organs; such as heart, kidney, brain etc. when the study population were asked about their fruits and vegetables intake more than 36.7% agreed they have fruits and vegetables everyday while 43.3% mentioned that they rarely takes fruits and vegetables and 1.1% mentioned did not use fruits and vegetables in their daily meals.

To identify the behaviour related to exercise of the participants, 55.6% of the respondents said they do regular exercise daily while 28.9% of the respondents mentioned that they did not exercise daily. For the justification among who did not exercised mentioned they do not have enough time (24.4% of the respondents) and 12.2% of the respondents mentioned that they didn't like to do exercise. In addition, 8.9% of participants agreed there is no one accompany with them to go for exercise. This can be a reason why NCDs are prone among the target population.

However, it is important to have enough sleep for a healthy living and a healthy life. To identify the sleeping pattern of the participants they were asked separately about their sleeping pattern; almost 60% out of 90 respondents said they sleep 8 hours per day. While 3.3% agreed that they sleep for 2 to 3 hours per day and 27.8% did not have enough time to sleep. But 10% of the study population even mentioned they sleep 12 hours per day for sleeping.

Participants were asked when they had their last visit to the physician. 32.2 agreed they never visit while 30% said they visited physician a day before the interview/data collection. 18.9% agreed they visited physician last week and 16.7% mentioned they visited physician last month.

Table 4.2: Frequency percentage of knowledge of the respondents

Variables	Frequency n = 90	Percent
What is Hypertension		
Elevated blood pressure	80	88.9
Increased blood in the body	5	5.6
Hemophilia	3	3.3
None of the above	2	2.2
Risk factors of Hypertension		
Family history	33	36.7
Eating too much salt	27	30.0
Stress	22	24.4
Don't know	8	8.9
Normal level of blood pressure		
60/100 mmhg	2	2.2
100/120mmhg	34	37.8
135/160mmhg	8	8.9
120/80mmhg	46	51.1
Major cause of Hypertension		
Lack of exercise	42	46.7
Family history	15	16.7
Stress and high salt in diet	28	31.1
Don't know	5	5.6
Symptoms of Hypertension		
Headache	43	47.8
Nausea vomiting	19	21.1
Shortness of breath	16	17.8
Don't know	11	12.2
Checking blood pressure level is important		
Important	40	44.4
It is important, but difficult to do	42	46.7
I don't think it is important for those who are healthy	3	3.3
Don't know	5	5.6
Regular exercise is important for healthy life		
yes	86	95.6
No	1	1.1
Sometimes	2	2.2
May be	1	1.1

Table 4.3 above, illustrates the frequency percentage of knowledge bout Hypertension among the respondents. The knowledge about Hypertension among study population; 88.9% of the respondents says that Hypertension is elevated blood pressure, 5.6% of the respondents says that Hypertension is increased blood in the body, 3.3% says that Hypertension is Hemophilia and 2.2% doesn't know what is Hypertension. The result shows that most of the respondents have knowledge about hypertension.

Knowledge about normal level of blood pressure, 51.1% of the participants says that 120/80mmhg is normal blood pressure, 37.8% of the participants says that 100/120mmhg is normal blood pressure level, 8.9%of the participants says that 135/160mmhg is normal level of blood pressure and 2.2% of the respondents says that 60/100mmhg is normal level of blood pressure.

Knowledge about major cause of Hypertension among the participants shows that, 46.7% of the participants believes that lack of exercise is the major cause of Hypertension, 31.1% believes that stress and high salt in diet is the major cause of Hypertension, 16.7% believes that family history is the major cause of Hypertension and 5.6% says they don't know the major cause of Hypertension.

Symptoms of blood pressure among the participants, 47.8% of the participants say that headache is the symptom of Hypertension, 21.1% of the participants says that nausea vomiting is the symptom of Hypertension, 17.8% of the participants says that shortness of breath is the symptom of Hypertension and 12.2% of the participant says that they don't know the symptom of Hypertension.

According to the respondents of the study; 44.4% of the participants believes that checking blood pressure level is important, 46.6% of the participants says that checking blood pressure level is important but for them it is difficult to do, 3.3% of the participants says that they don't believe that it is important for those who are healthy and 5.6% of the participants says that they don't know checking blood pressure is important or not.

As regular exercise is important for a healthy life, 95.6% of the respondents believes that regular exercise is important for healthy life, 1.1 % among the respondents says that they don't believe regular exercise is important for healthy life, 2.2% says that sometimes exercise is important for healthy life and 1.1% of the respondents says may be exercise ids important for healthy life.

Table 0.3: Frequency percentage of risk factors among the respondents

Characteristics	Frequency n = 90	Percent
Family history of (n=68)		
Hypertension	40	44.4
Kidney disease	4	4.4
Heart disease	10	11.1
Diabetes	12	13.3
1,3,&4	2	2.2
Blood pressure checked last		
Last week	19	21.1
Yesterday	9	10.0
A month ago	37	41.1
Never	25	27.8
Smoking		
Yes	43	47.8
No	47	52.2
History of Hypertension		
Yes	22	24.4
No	68	75.6

Table 4.4 shows the frequency percentage of risk factors among the respondents. Number of participant's answers for the family history of illness 68 out 0f 90 (76%). Among them 44.4% of the respondents says that they have family history of

Hypertension. 4.4% of the respondents says that they have family history of kidney diseases, 11.1% of the respondents says that they have family history of Heart disease, 13.3% of the respondents says that they have family history of Diabetes and 2.2% of the respondents says that they have family history of Hypertension, kidney disease, Heart disease and diabetes.

Among the respondents were asked when they checked their blood pressure; 41.4% of the respondents mentioned that a month before they checked their blood pressure last time while 27.8% said they never checked. But among them there are people who has regular check-ups; one a week, once a month or regular to the NCD clinic.

According to the participants; 47.8% are smokers and 52.2% of them are non-smokers. Furthermore 24.4% of the respondents suffer from Hypertension and 75.6% of the respondents say that they don't have history of Hypertension.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

5.1 Discussion

This research was conducted to understand the reason(s) for increasing hypertension in Dh.Kudahuvadhoo. A cross-sectional descriptive study design and the target population was the age group between 25 to 65 years in both sexes n the Dh. Kudahuvadhooo. Total population of this age group is 1574, female 784 Male 790, a simple random sampling technique was used to accumulate statistics in this study and the total population of the island was 2998 individuals including both male and female. The sample size was calculated by using a software called Raosoft from the website “www.raosoft.com. The total sample size of this study was 1574 individuals and 50% of sample size (90 individuals) was chosen for this study. A questionnaire was used as a research instrument in the study. The distributed questionnaire was translated to Dhivehi to make the participants to answer the question well.

The study was conducted to the age group of 25 to 65 years. The majority of the study is female (55.6%) while male participation was 44.4%. Among the participants; 43.4% of them are working in the government and 13.3 % of them works in private. Most of the participants get more than 8000mrf as a salary. As 32.2% of the participants gets more than MRF 8000 justifying that most of them who works in the government and private jobs they earn a good amount of money as their average income per month.

A study done in Jamaica has shown that the social economic status is related to Hypertension. In this study the wealthiest women have higher of getting Hypertension. Furthermore, it shows that prevelance rate in Hypertension is higher in women (Mendez, Cooper, Wilks, Luke, & Forrester, 2002).

A finding of another study suggested that number of working hours of the people spent in their working environment has direct inpact to their health condition. As they have menthioned that spending more hours which leads to more stress. Spending more hours in works which leads to chronic job stress. The mostly used model of occupational stress is the job strain model of Karasek et al which focuses on two characteristics of the work environment: job demands, or workload, or the degree of control an employee has in performing his or her work. High job strain has been associated with increased BP at work, at home, and during sleep, as well as increased left ventricular mass, consistent with the anticipated effects of sustained BP elevation (Spruil, 2013). Therefore, a person's life style directly incorporated with his health status. If a person has a sedentary life style he/she is more prone to get chronic health problems. Even in this study it was identified 35.6% works equal or more than equal to 8 hours of work per day. This may lead them to the risk of hypertension.

According to a research conducted in Australia dietary and other lifestyle issues play a key role in the prevalence of hypertension (LJ, 1999). Another study conducted in Nigeria concluded that with association between higher prevalence of overweight and obesity among the civil servants and their sedentary lifestyle (Oladimeji, Fawole, Nguku, & Nsubuga, 2014).

This study shows that most of the respondents (43.3%) never visit physician. They will never get the actual condition of their health status unless they visit physician. Additionally there are many things that can lead to HTN and precaution is better than the disease - diagnosing is important. Furthermore, diagnosis for HTN is mostly ended up with two or more visits that gives readings that exceeds normal range of blood pressure level (American Heart Association, 2014). Therefore it is important visit doctors for a healthy life. According to Canadian Medical Association they says that there have been many studies that says that generally medical checkups will not help a person to stay health, because sometimes the false result or the false diagnosis is a widow for other diseases like anxiety (Canadian Medical Association, 2014).

This study also shows that most of the respondents (36.7%) they use fruits and vegetables every day in their meals. Using fruits and vegetables keep the person healthy. According to (Gregor, 2007) if there is increase of intake of fruits and vegetables it reduces the risk of non-communicable diseases. Fruits and vegetables plays vital role to keep the person healthy. Reduced fruit and vegetable consumption is linked to poor health and increased risk of non- communicable diseases (NCDs). An estimated 6.7 million deaths worldwide were recognized due to inadequate fruit and vegetable consumption in 2010 (WHO, 2014).

This study has shown that most of the participants (55.6%) of the respondents do exercise daily while 28.9% of the participants never exercise; they don't have time to go for exercising. However, increased blood pressure boosts the chances of heart attacks or strokes. In America more than 75 million are with high blood pressure.

Some people they even don't know whether they have HTN or not because symptoms of HTN are few. Death rates from heart attacks and strokes in the United States have decreased by 40-60 percent over the last 30 years (American College of Sports Medicine, 2011). Regular physical activity has also been shown to be effective in reducing the relative risk of developing hypertension by 19 to 30 percent. Likewise, a low cardio-respiratory fitness in middle age is associated with a 50% greater risk of developing hypertension. Results shown were similar in both men and women (Roy , 2001). Therefore, it is important to do regular exercise for a healthy living and life.

Sleeping is an important factor for a healthy life. This study shows most of the participants (58.9%) they spent 8 hours in sleeping while 27.8% of the participants don't know the enough time for sleep, 10.0% of them sleep for 12 hours and 3.3% of them spent 2 to 3 hours in sleeping. In a study American Heart Association evaluated that short sleep duration would increase the risk for hypertension incidence. Sleep durations of ≤5 hours per night were associated with a significantly increased risk of hypertension. As a result of this sleep duration could be a major risk factor for hypertension (Kuo, Allbritton, Gil, & McAlpin, 2006).

In this study the knowledge about Hypertension among the participants is 88.9% while 2.2% of the participants do not have any knowledge on the study subject. Therefore, it indicates majority of the participants have enough knowledge on the study subject. The large number of hypertension-related disease outcomes in the nation highlights need for aggressive BP control. While the study found that patients were generally aware of basic concepts related to hypertension, their knowledge of personal BP goals and current status of control has a great effect in controlling high

blood pressure. Furthermore, based on the result of this study it is important to aware the community in order to control blood pressure (Alexander, Gordon, Pharm, & Chen, 2007).

Knowledge about major cause of Hypertension among the participants shows that 46.7% of the participants believes that lack of exercise is the major cause of Hypertension, 31.1% believes that stress and high salt in diet is the major cause of Hypertension, 16.7% believes that family history is the major cause of Hypertension and 5.6% says they don't know the major cause of Hypertension. People with a family history of hypertension had a higher diastolic BP and BMI and an increased risk of obesity. Those with a family history of obesity had a higher BMI and were at increased risk of obesity. Obesity is a cause of Hypertension (Sande, Walraven, & Milligan, 2001). A Study carried out among Greek adolescents shows that exercises have higher relationship in blood pressure. Exercise is a key component of the lifestyle changes needed for the prevention and treatment of hypertension in children and adolescents (Allebeck, 2010).

In this study most of the participants justified symptoms of HTN as; headache (47.8%), nausea and vomiting (21.1%), shortness of breath (17.8) and 12.2% of them said they don't know the symptom of hypertension. Therefore, it seems majority has some knowledge. Based on the recommendation of the Seventh Report of the joint National Committee shows Hypertension may develop as a result environmental and genetic cause (Madhur & Maron, 2014). Mostly Hypertension caused by increasing emotional tension, anxiety and stress all this causes headache. According to the international classification of headache disorders that headache can cause due to sever Hypertension. Uncontrolled hypertension can increase the frequent migraine attacks, In a survey conducted Norwegian adult shows individuals with systolic

blood pressure greater than 150mmHg had 30% lower risk of non-migrainous headache compare to those with systolic blood pressure less than 140mmHg (Yeung, 2006). So this shows that high blood pressure causes headache.

However, this study revealed that 68 participants have family history of illness such as; Hypertension (44.4%), kidney disease (4.4%), Heart disease (11.1%) and diabetes (13.3%). Hypertension is a major known risk factor for chronic conditions such as cardiovascular disease, hemorrhagic stroke, and renal failure (Yusuf, et al., 2004). According to the WHO Global Health Observatory, 46 % of deaths in lover middle income country (LMIC) are attributable to cardiovascular disease (CVD) (WHO, 2012).

It is important to check the blood pressure regularly. The result shows that almost a half of the participants checked their blood pressure a month ago and 27.8% never checked their Blood pressure. It seems that they have regular check-up. In addition, 47.8% of participants were smokers and 52.2% of them were non-smokers. Cigarette smoking increases blood pressure and is an exogenous risk factor for pre-hypertension and other cardiovascular diseases (Kabore & Lazar, 2016). Study concurs with recent studies' findings, which concluded that cigarette smoking damages the arterial wall and increases the BP in adults, resulting in pre-hypertension (Leone, 2012). Other studies found that passive non-smoking female SBP and DBP were significantly influenced by the carbon monoxide and nicotine from smokers (Yarlioglues, et al., 2010). In a cohort study found that 30.2% of women became hypertensive over 10 years, a rate similar to that among 379 men followed for 11 years where 32.7% developed hypertension (Niskanen, et al., 2004).

Since the present study indicated 24.4% of the respondents suffer from Hypertension and 75.6% of the respondents says that they don't have history of Hypertension. A

study done by WHO shown the rate of awareness about hypertension among the hypertensives, approximately 50%, corresponds with that observed among the elderly living in other developing countries (WHO, 2001).

5.2 Limitation

Some of the participants did not complete all the tasks and also for some question they have not given relevant answer. Some of the participants have just answered the questions for the sake of filling the questionnaire. As there is no published study done on HTN for Dh. Kudahuvadhoo it will be a big challenge to compare any result of this research.

5.3 Conclusion

The existing study provides a clear picture of the current situation of hypertension and the reason for increasing hypertension in Dh.Kudahuvadhoo. The age group of this study includes between 25 to 65 years of both sexes counting 44.4% men and 55.6% females. As the result shows, participants have positive attitude with good knowledge towards hypertension in this island. However, lack of appropriate physical behavior and practices such as regular exercises and dietary habit of some people puts them at risk of developing this condition. This study supports the need to encourage a healthy lifestyle, healthy dietary habits, and daily routing of physically active life, among participants to overcome hypertension and disease related complications in the island. For the reason that, appropriate resources should be engaged to increase awareness of the disease and providing education with a prominence on encouraging health behaviors which are protective and discouraging behaviors which put them at risk of developing the disease condition. Likewise, it is

important to implement health education programs and screening programs related to hypertension for early detection and control of the disease.

5.4 Recommendation

Keeping this as a baseline – I recommend to conduct a further research to identify the situation in more comprehensive way.

Need to have enough time to carry out further study, because it consumes lots of time and good monitoring and supervision.

REFERENCES

American College of Sports Medicine. (2011). Retrieved from American College of Sports Medicine Web Site: http://www.acsm.org/docs/brochures/exercising-your-way-to-lower-blood-pressure.pdf

Canadian Medical Association. (2014). Choosing Wisely Canada. Health checkups .

Kuo, D., Allbritton, S., Gil, R., & McAlpin, G. (2006). Short Sleep Duration as a Risk Factor for Hypertension. American Heart Association.

Mendez, M., Cooper, R., Wilks, R., Luke, A., & Forrester, T. (2002). International journal of epidemiology. Income, education, and blood pressure in adults in Jamaica, a middle-income developing country.

Tsioufis , C., Kyvelou, S., Tsiachri, D., & Tolis, P. (2010). Relation between physical activity and blood pressure levels in young Greek adolescents. Europeanjournal of Public Health.

A.Leone. (2012). How and why chemicals from tobacco smoke can induce a rise in blood pressure. World J Pharmacol, 9: 10-20.

Alexander, M., Gordon, N., Pharm, C. D., & Chen, R. (2007). Patient Knowledge and Awareness of Hypertension. The Journal of Clinical Hypertension.

Allebeck, P. (2010). Relation between physical activity and blood pressure levels in young Greek adolescents: The Leontio Lyceum Study. European Public Health Association.

American Heart Association. (2014, April 8). American Heart Association. Retrieved from American Heart Association Web site: http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Stress-and-Blood-Pressure_UCM_301883_Article.jsp#.V7plWZh9600

American Heart Association. (2014). Understanding and Managing High Blood Pressure. American Heart Association.

American Heart Association. (2016). Retrieved from American Heart Association Web Site: http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/UnderstandYourRiskforHighBloodPressure/Understand-Your-Risk-for-High-Blood-Pressure_UCM_002052_Article.jsp#.V7nCy5h97IV

American Heart Assosiation. (2016). Retrieved from American Heart Assosiation Web site: http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Tobacco-and-Blood-Pressure_UCM_301886_Article.jsp#.V8O0a5h97IU

Blood pressure UK. (n.d.). Retrieved from Blood pressure UK Web Site: http://www.bloodpressureuk.org/microsites/salt/Home/Whysaltisbad/Saltseffects

Department of Internal Medicine, U. o. (2009). National Library of Medicine. Retrieved from National Library of Medicine Web Sye: http://www.ncbi.nlm.nih.gov/pubmed/19355948

Department of Internal Medicine, U. o. (2010). Cigarette smoking and hypertension. PUBMED.

Gregor, M. (2007). Increased consumption of fruit and vegetables is related to a reduced risk of coronary heart disease: meta-analysis of cohort studies. Journal of Human Hypertension.

Huang, N. (2008, December). Lifestyle management of hypertension. Retrieved from heartfoundation Web Site: https://www.heartfoundation.org.au/images/uploads/publications/A-Hypert-Article-AustPres-LifestyleManagement-Dec2008.pdf

L.Niskanen, DE.Laaksonen, k.Nyyssönen, k.Punnonen, VP.Valkonen, R.Fuentes, . . . Salonen, R. a. (2004). Inflammation, Abdominal Obesity, and Smoking as Predictors of Hypertension. Hypertension, 859-865.

LawrenceJ.Apple. (2003, july 01). Lifestyle Modification as a Means to Prevent and Treat High Blood Pressure. Journal of the American Society of Naphrology, vol. 14 no. suppl 2 S99-S102.

lliades, C. (2016). everydayhealth. Retrieved from everydayhealth web site: http://www.everydayhealth.com/hypertension/understanding/types-of-hypertension.aspx

M.Yarlioglues, MG.Kaya, I.Ardic, B.Calapkorur, O.Dogdu, M.Akpek, . . . A, A. O. (2010). Acute effects of passive smoking on blood pressure and heart rate in healthy females. PubMED, 15: 251-256.

Madhur, M., & Maron, D. (2014, September 30). The Heart Organization Medscape. Retrieved from The Heart Organization Medscape web site: http://emedicine.medscape.com/article/241381-overview?pa=wF4ZGmJ8Z9gpeTBl1aWsF5eBOigl%2B4S1S5CRP8THCwJdtRtGAhzvz5pkQT9B1U6uoIZK44D%2F4%2BoOfD35Hvbwn1aycSibeA0Q%2FJsWK%2BpGHzs%3D

Mayo Foundation for Medical Education and Research. (2016). mayoclinic. Retrieved from mayoclinic web site: http://www.mayoclinic.org/diseases-conditions/high-blood-pressure/basics/risk-factors/con-20019580

Moore, L. B. (2014, August 05). Colorado State University Extension. Retrieved May 10, 2015, from Colorado State University Extension website: http://www.ext.colostate.edu/pubs/foodnut/09318.html

Roy , B. (2001). American Council on Exercise. Retrieved from American Council on Exercise Web site: http://bellinghamfitness.com/downloads/itemid_110.pdf

S.Yusuf, S.Hawken, S.Ounpuu, T.Dans, A.Avezum, F.Lanas, . . . Investigators, I. S. (2004). Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. PubMed, 11-17.

Sande, M. V., Walraven, G., & Milligan, P. (2001). Family history: an opportunity for early interventions and improved control of interventions and improved control of. Bulletin of the World Health Organization.

Spruil, T. (2013). Chronic Psychosocial Stress and Hypertension.

T.Kabore, & J.Lazar, &. (2016). Prevalence and Risk Factors for Pre-Hypertension Among Adults in Burkina Faso, West Africa. Journal of Community & Public Health Nursing, 10.4172/2471-9846.1000130.

UCSF Medical Center. (n.d). UCSF MEDICAL CENTER. Retrieved from UCSF MEDICAL CENTER Web Site: https://www.ucsfhealth.org/education/risk_factors_for_high_blood_pressure/index.html

WebMD. (2005 2016). Retrieved from WebMD Web Site: http://www.webmd.com/hypertension-high-blood-pressure/guide/prehypertension-are-you-at-risk

webMD. (2016). Retrieved from webmd web site: http://www.webmd.boots.com/hypertension-high-blood-pressure/guide/bp-stress

WHO. (2012). WHO Global Health Observatory: Noncommunicable diseases (NCD). Retrieved from World Health Organization: http://www.who.int/gho/ncd/en/

WHO. (2013). A global brief on Hypertension. Switzerland: World Health Organization.

WHO technical staff. (2014, September 14). World Health Organization. Retrieved from World Health Organization Web site: http://www.who.int/elena/titles/bbc/fruit_vegetables_ncds/en/

Willis.R, G. P. (2010, July). British Society of Gerontology. Retrieved May 12, 2015, from www.britishgerontology.org: http://www.britishgerontology.org/DB/gr-editions-2/generations-review/applying-the-andersen-behavioural-model-to-informa.html

World Health Organization. (2011, September). Hypertension . Hypertension fact sheet.

Yeung, A. (2006). What is the conection between Hypertension, Headache and Migrain. Hypertension.

Zhongshan Hospital of Fudan University, S. C. (2013). Hypertension knowledge, awareness, and self-management behaviors affect hypertension control.

APPENDICES

Appendix: 1
Informed consent

Reason for increasing of Hypertension cases in Dh.Kudahuvadhoo among the age group of 25 to 65 years.

My name is Fathimath Zoona from Maldives National University, Faculty of Health Sciences, doing bachelor of Primary Health care. This research is a part of my course identifying the reasons for increasing Hypertension cases in Dh.Kudahuvadhoo.

Your participation in this survey will help me in identifying the reasons for increasing Hypertensive cases in the Island. The data collected from participants will be used only for research purposes and all the answers you gave will be kept confidential. The results of this study will be presented as numerical form and individual participants will not be identified in presentations and publications.

Your participation in this survey is autonomous. Also participant has rights to withdraw his/her participation at any time during the research. Furthermore, participating in this research does not cause any harm to the respondents and there will be nothing that the respondents must be responsible.

I received full information regarding this study. As well as, agree to participate in this study voluntarily and agree to give information for purposes of this study.

Date: _____ Signature: _____

Appendix: 2

Questionnaire

Socio demographic

Age:	**Sex:**	**Occupation:**

1. How many hours did you spend on your work?

☐ a. Not working at all

☐ b. 2 to 5 hours

☐ c. 5 to 8 hours

☐ d. More than 8 hours

2. Average income:

☐ a. Less than 2000 b. 3000 to 5000

☐ c. 5000 to 8000

☐ d. more than 8000

3. What is hypertension?

☐ a. Elevated blood pressure

☐ b. Increased blood in the body

☐ c. hemophilia

☐ d. None of the above

4. What are the Risk factors of Hypertension?

☐ a. Family history

☐ b. Eating too much salt

☐ c. Stress

☐ d. Don’t know

5. What are the complications of hypertension?

☐ a. Heart attacks

☐ b. Herat failure

☐ c. Stroke

☐ d. Diabetes

6. What is the normal level of blood pressure?

☐ a. 60/100mmhg

☐ b. 100/120mmhg

☐ c. 135/160 mmhg

☐ d. 80/120mmhg

7. What are the major cause of hypertension?

☐ a. lack of exercise

☐ b. family history

☐ c. Stress and high salt diets

☐ d. don’t know

8. What are the symptoms of hypertension?

- [ ] a. Headache
- [ ] b. Nausea vomiting
- [ ] c. shortness of breath
- [ ] d. I don't know

9. Do you think regular checking of your blood pressure level is important?

- [ ] a. Important.
- [ ] b. It is important, but difficult to do
- [ ] c. I don't think it is important for those who are healthy
- [ ] d. Don't know

10. How often do you visit physician?

- [ ] a. once week
- [ ] b. I don't think it is important
- [ ] c. once in a month
- [ ] d. Never

11. How often do you use to take fruits and vegetables?

- [ ] a. Everyday
- [ ] b. Twice in a week
- [ ] c. Once in a week
- [ ] d. Rarely
- [ ] e. Never

12. Do you think regular exercise is important for healthy life?

- [ ] a. Yes
- [ ] b. No
- [ ] c. Sometimes
- [ ] d. may be

13.If yes to question 12 How often do you exercise?

- [ ] a. Everyday
- [ ] b. Once in a week
- [ ] c. 2 time a day
- [ ] d. Never

14. If u are not exercising why not?

- [ ] a. Don’t have time
- [ ] b. Don’t like
- [ ] c. No one is there to go with you
- [ ] d. Don’t want

15. Do you have any family member who is suffering from?

- [ ] a. Hypertension
- [ ] b. Kidney disease
- [ ] c. Herat disease
- [ ] d. Diabetes

16. How many hours do you usually sleep?

☐ a. 8 hours per day

☐ b. 12 hours per day c. 2 to 3 hour

☐ d. Don't know

17. When was your blood pressure checked last?

☐ a. last week

☐ b. yesterday

☐ c. a month ago

☐ d. Never

18. When was your last visit with your physician?

☐ a. last week

☐ b. 1 year back

☐ c. a month ago

☐ d. Never

19. When did you have gone for exercise last?

☐ a. last week

☐ b. yesterday

☐ c. a month ago

☐ d. Never

20. When did you done your last medical checkup?

- ☐ a. last week
- ☐ b. yesterday
- ☐ c. a month ago
- ☐ d. Never

21. Are you a smoker?

- ☐ a. Yes
- ☐ b. No

22. Are you suffering from Hypertension?

- ☐ a. yes
- ☐ b. No

Appendix 3

އިޢުތިރާޒެއް ނެތްކަމުގެ ލިޔުން

ދިރާސާ ކުރިއަށްގެންދާ ފަރާތް

އަޅުގަނޑު ފާތިމަތު ޒޫނާ، އަކީ ދިވެހިރާއްޖޭގެ ޤައުމީ ޔުނިވަރސިޓީގެ ފެކަލްޓީ އޮފް ހެލްތު ސައިންސަސްގައި ބެޗެލަރ އޮފް ނަރސިންގ ކޯސް ކުއަރ ކިޔަވަމުންދާ ދަރިވަރެކެވެ. މި ކޯހުގެ ފުރަ އަހަރުގެ މާސްޓަރސްގެ ގޮތުގައި ހިމެނޭ ރިސާޗް ޕްރޮޖެކްޓް ފުރިހަމަ ކުރުމަށްޓަކައި، ހަމަ ދިރާސާއެއް ކުރިއަށް ގެންދިޔުމަށް ތިޔަބޭފުޅާގެ އެހީތެރިކަން ބޭނުންވެއެވެ. އަޅުގަނޑުގެ ދިރާސާ ހާއްސަ ކުރެވިފައިވަނީ ދ.ކުޑަހުވަދޫ ހޮސްޕިޓަލްގައި ބަލި އިތުރުވަމުންދާ ސަބަބު ދެނެގަތުމެވެ. އެހެންކަމުން މިކަމަށް ތިޔަބޭފުޅާގެ ފުރިހަމަ އެއްބާރުލުން ލިބިދޭނެކަމަށް އުންމީދުކުރަމެވެ.

ދިރާސާގެ ބައިވެރިން

މި ދިރާސާގައި ބައިވެރިވުމާއި ނުވުމުގެ ފުރިހަމަ އިޚްތިޔާރު ތިޔަބޭފުޅާއަށް ލިބިގެންވެއެވެ. މިކަމުގައި ބައިވެރިވި ކަމުގައި ވިޔަސް ކޮންމެ ވަގުތަކުވެސް އެއްވެސް ސަބަބެއްދެއްކުމަކާނުލައި މި ދިރާސާއިން ވަކިވުމުގެ ފުރިހަމަ އިޚްތިޔާރު ތިޔަ ބޭފުޅާއަށް ލިބިގެންވެއެވެ. މި ދިރާސާގެ އެއްވެސް ސުވާލަކަށް ޖަވާބު ނުދިނުމުގެ ފުރިހަމަ އިޚްތިޔާރު ލިބިގެންވެއެވެ. އަދި ހަމަ އެހެންމެ، ދެން މި ދިރާސާއިން ވަކިވުމުގެ ފުރިހަމަ އިޚްތިޔާރު ދިރާސާގެ ކޮންމެ ހިސާބަކުންވެސް ލިބިގެން ވެއެވެ. ހަމަ އެއާއެކު، ތިޔަބޭފުޅާ އެދިއްޖެނަމަ ދިރާސާ ކުރާ ފަރާތުން ތިޔަބޭފުޅާގެ އެއްވެސް މައުލޫމާތެއް ބޭނުން ނުކުރުމަށް އެދުމުގެ ފުރިހަމަ އިޚްތިޔާރުވެސް ލިބިގެންވެއެވެ. މި ސުވާލު ކަރުދާހަށް ތިޔަ ބޭފުޅާ ދެއްވާ މައުލޫމާތުތަކުގެ ފުރިހަމަ ސިއްރު ހިފެހެއްޓޭނެއެވެ. އަދި މި މައުލޫމާތުތައް ބޭނުން ކުރާނީ ހަމައެކަނި ދިރާސާފުރިހަމަކުރުމަށްޓަކައެވެ. ސުވާލު ކަރުދާހުގައިވާ މައުލޫމާތަކީ ތިޔަބޭފުޅާގެ އަމިއްލަ މައުލޫމާތުކަން އެނގޭނެ ގޮތަކަށް އެއްވެސް މައުލޫމާތެއް ބޭނުމެއް ނުކުރާނަމެވެ.

މި ދިރާސާއާއި ބެހޭގޮތުން ސުވާލުކުރުމާއި އެ ސުވާލުތަކަށް އަޅުގަނޑުގެ ފަރާތުން ޖަވާބު ހޯދުމުގެ އިޚްތިޔާރު މި ދިރާސާގެ ކުރިންނާއި ދުރުވެރިކަން އަދި ފަހުންވެސް ލިބިގެންވެއެވެ. މި ދިރާސާއާއި ބެހޭގޮތުން އިތުރު އެއްވެސް ސުވާލެއް ވާނަމަ މި ނަންބަރާ އިމެއިލް އެޑްރެސް މެދުވެރިކޮށް ކޮންމެ ވަގުތަކުވެސް އަޅުގަނޑަށް އެކަން އަންގަވާދެވިދާނެއެވެ. fxooona@hotmail.com

ދިރާސާގައި ބައިވެރިވާ ފަރާތުގެ ނިންމުން:

އަޅުގަނޑު، މަތީގައިވާ "އިޢުތިރާޒެއް ނެތްކަމުގެ ލިޔުން" ކިޔައި މި ދިރާސާގައި ބައިވެރިވުމަށް އެއްބަސްވަމެވެ. މި ދިރާސާގެ މަޤްޞަދު އަޅުގަނޑަށް ވަނީ އޮޅުންފިލުވައިދީފައެވެ. މި ދިރާސާގައި ބައިވެރިވުމަށް ނިންމުމަކީ މުޅިން އިޚްތިޔާރީ ކަމެއްކަމާއި އަޅުގަނޑުގެ ނަން މި ދިރާސާއިން އުނިކުރުމުގެ އިޚްތިޔާރު ކޮންމެ ވަގުތެއްގައި ލިބިގެންވާނެކަން އަޅުގަނޑަށް އެނގެއެވެ. އަޅުގަނޑު މި ދިރާސާއަށް ދޭ މައުލޫމާތުތަކަކީ ސިއްރު ހިފެހެއްޓޭނެ މައުލޫމާތުތަކެއް ކަމުގައި ފުރިހަމަ ޔަޤީންކަން އަޅުގަނޑަށް އެބައޮތެވެ.

ތާރީޚް:..................................

ބައިވެރިވާ ފަރާތުގެ ފޯނު ނަންބަރު: ....

ސޮއި:...

Appendix 4

ސުވާލު ކަރުދާސް

ސުވާލު ކަރުދާހުގައިވާ ބައެއް ސުވާލުތަކުގައި އެއްޗަކަށް ވުރެއް ގިނައިން ފާހަގަ ލެވިދާނެއެވެ.

- ދިރާސާގެ ބައިވެރިންގެ އާންމު މައުލޫމާތު

އުމުރު:	ޖިންސް:	އަދާކުރާ ވަޒީފާ:

1. ވަޒީފާގައި ހޭދަކުރީ ކިތައް ގަޑިއިރު؟
   ހ. ވަޒީފާ އަދާނުކުރަން
   ށ. 2 ގަޑިއިރާއި 5 ގަޑިއިރާއި ދެމެދު
   ނ. 5 ގަޑިއިރާއި 8 ގަޑިއިރާއި ދެމެދު
   ރ. 8 ގަޑިއިރަށްވުރެ އިތުރަށް

2. އާއްމު ގޮތެއްގައި ލިބޭ އާމްދަނީ:
   ހ. 2000 ރ. އިން ދަށް
   ށ. 2000ރ – 5000ރ އާއި ދެމެދު
   ނ. 5000ރ – 8000ރ އާއި ދެމެދު
   ރ. 8000 ރ އިން މަތި

3. ތީ މަސައްކަތް ދިޔުމަކީ ކޮބައިތޯ؟
   ހ. ތީގެ ފުރުސަތު މަދުވުން
   ށ. ހަރަކާތްތަކާ ތީ އިތުރުވުން
   ރ. ތީ ދިއާރުވުން
   ބ. މަސްގައި ބާރުން ކުރިމަތިވާ އެއްވެސް ކަމެއް ނޫން

4. ތީ މަސައްކަތް ދިޔުމުން މަގުފަހި ކުރުވާ ކަންތައްތަކަކީ ކޮބާ؟
   ހ. އާއިލާގެ/ރަށުގެ ބާރުވެރި ތީ މަސައްކަތް ދިރުން
   ށ. މާ ގިނައިން ކާބަފައިންގެ ތަރުބިއްޔާ ބަދަލުން ކުރުން
   ނ. ހާސްވެ ކަންބޮޑުވުން
   ރ. ނޭނގެ

5. ތީ މަސައްކަތް ދިޔުމުގެ ސަބަބުން ދިމާވެދާނެ ނުރައްކަލަކީ ކޮބާ؟
   ހ. ހާޓް އެޓޭކް
   ށ. ހާޓް ފެއިލިއަރ
   ރ. ސްޓްރޯކް
   ބ. ހުރިހާ ބައި

6. އާއްމު ގޮތެއްގައި ތީގެ ބްލަޑްޕްރެޝަރު ހުންނަން ޖެހޭނީ ކިހާމިންވަރަކަށްގައި؟
   ހ. 60/100mmhg
   ށ. 100/120mmhg
   ނ. 135/160 mmhg

ނ. 80/120mmhg

7. ﷺ ފަތްތަކުގެ ތެރެއިން ގުޅިގެންވާ ފަދައިން ކަނޑަ ކަށި ހުއްޓެވެ؟

ހ. ކަނޑަ ކަށި ހުއްޓެވެ

ށ. ތާއީދުގެ/ތިލާގެ ﷺ ފަތްތަކުން ތެރެއިން

ނ. ﷺ ފަތްތަކުގެ ކަނޑާ ދުރުން ހުއްޓެވެ/ފާސްވެ ކަށި ހުއްޓެވެ

ރ. ހުއްޓެވެ

8. ﷺ ފަތްތަކުގެ ތެރެއިން ތަދުވެގެންވާ ކަށި ހުއްޓެވެ؟

ހ. ﷺ ކަނޑަށް ކެރިގެން

ށ. ﷺ ކަނޑާ ދުރުން ފެނުމުން

ނ. ﷺ ކައިވެ ގެންނަ

ރ. ﷺ ހުއްޓެވެ

9. ކަލާތުގައި ﷺ ކުދިންނަށް ބޮޑުކަން ދެއްކުމަށް ކަށި ހުއްޓެވެ؟

ހ. ދުނިޔެކަށް

ށ. ދުނިޔެކަށް ތަދުވުން ފާފަކުރުން ތެދުވެގެންވާ

ނ. ފާތިހަ ތަނަކުން ލިބުން ގެނައުން ﷺ

ރ. ﷺ ހުއްޓެވެ

10. ތުންބަނަހިލަ ބައިތާ ގުޅިގެންވާ ގޮތަށް ތަކެއްޗާ ހަވާލުކުރަންވާ؟

ހ. ﷺ ދިވެހި

ށ. 2 ގެ ކުރިން 1 ގެ

ނ. ގެ 1ގައި

ރ. ވަކި ގޮތެއް

ބ. ތުންބަނަހިލަ ބައިތާ ﷺ

11. ﷺ ކަނޑައެޅި ގޮތަށް ﷺ ދިވެހި

ހ. ﷺ ދިވެހި

ށ. ގެ 2 ގައި

ނ. ގެ 1 ގައި

ރ. ވަކި ގޮތެއް

ބ. ތުންބަނަހިލަ ﷺ ﷺ

12. ކަލާތުގައި ގަނޑުގައި ﷺ ދުވަހުގެ ތެރެއިން ﷺ ދުނިޔެ ﷺ

ހ. ﷺ

ށ. ﷺ

ނ. ﷺ ﷺ

ރ. ﷺ

13. ގަނޑުގައި ﷺ ﷺ، ﷺ ﷺ ﷺ ﷺ ﷺ

ހ. ﷺ ﷺ

ށ. ﷺ 1 ﷺ

ނ. ދުވަހުގެ 2 ފަހަރު
ރ. ތާއީދުކުރާ ބައެއް

14. ތިޔަފަދަ ހަލާކުތަކާ ބެހޭގޮތުން، ހަލާކުތަކުގެ ބަލައިގަތުމުގައި ކޮންފަދަ ކަންތައްތަކެއް ކުރަންވާނެ؟
ހ. ވަގުތުން ބަލައިގަތުން
ށ. ގޯތިތަކުގެ ބަލައިގަތުން
ނ. ތާއީދުކުރާ ބައެއް ދިނުން
ރ. ބަލައިގަތުން ދަށްކުރުން

15. ފާރިތަކުގެ ތަރުތީބު ދަށުގެ ގޮތުގައި ކިހިނެއްތޯ؛
ހ. ކުރު ދަރަޖަށް ދިއުން
ށ. ކައުންސިލް ތަރުތީބު ކުރުން
ނ. ހިލޭ ތަރުތީބު ކުރުން
ރ. ހަރުދަނާ ގޮތަށް ބަލައިގަތުން

16. ފާތިހުވެދާނެ ކަންކަމުގެ ދަށުން ކަނޑައަޅާފައި ހުންނަ ދަށްކުރުން ކިތައް ދުވަހަކަށް ހުންނާނެ؟
ހ. 8 ދުވަހަށް
ށ. 12 ދުވަހަށް
ނ. 3-2 ދުވަހަށް
ރ. ނިންމާފައި

17. ތަންތަނުގައި ކުރަންޖެހޭ ބަދަލުތައް ކުރުމަށް ކިހާ ވަގުތެއް ދެވޭނެ؟
ހ. ދެދުވަހުގެ ތެރޭގައި
ށ. ތަންތަނުގައި ބަދަލުކުރާ ދުވަހު
ނ. 1 ހަފްތާ ބަދަލުކުރާ ދުވަހު
ރ. ނިންމާފައި

18. ތަކެތި ގެންދާ ގޮތުގެ ގޮތުން ހަލާކުތަކުގެ ތަރުތީބު ކިހިނެއްތޯ؟
ހ. ދެދުވަހުގެ ތެރޭގައި
ށ. 1 ތަނަވަސް ބަދަލުކުރާ ދުވަހު
ނ. 1 ހަފްތާ ބަދަލުކުރާ ދުވަހު
ރ. ތަކެތި ގެންދާ ގޮތުގެ ގޮތުން

19. ތަންތަނުގައި ހަލާކުތަކުގެ ބަދަލުކުރާ ދުވަހު ކިހިނެއްތޯ؟
ހ. ދެދުވަހުގެ ތެރޭގައި
ށ. ތަންތަނުގައި ބަދަލުކުރާ ދުވަހު
ނ. 1 ހަފްތާ ބަދަލުކުރާ ދުވަހު
ރ. ނިންމާފައި

20. ތަންތަނުގައި ދެއްކެވުނު ކަންތައްތަކުގެ ބަދަލު ކިހިނެއްތޯ؟
ހ. ދެދުވަހުގެ ތެރޭގައި
ށ. ތަންތަނުގައި ބަދަލުކުރާ ދުވަހު
ނ. 1 ހަފްތާ ބަދަލުކުރާ ދުވަހު

ب. ﯝﯞﯟﯠﯡﯢﯣ

ت. ﯤﯥﯦﯧﯨﯩﯪﯫ ﯬﯭﯮﯯﯰﯱﯲﯳ ﯴﯵﯶﯷ ﯸﯹﯺﯻﯼﯽ ﯾﯿﰀﰁ

21. ﰂﰃﰄﰅﰆ ﰇﰈ ﰉﰊﰋﰌﰍ ﰎﰏﰐﰑﰒﰓ؟

ر.ﯓﯔﯕﯖﯗ

س. ﯘﯙﯚﯛﯜ

22. ﯝﯞ ﯟﯠﯡﯢﯣ ﯤﯥ ﯦﯧﯨ ﯩﯪﯫ؟

ر.ﯓﯔﯕﯖﯗ

س. ﯘﯙﯚﯛﯜ