UNIVERSITI PUTRA MALAYSIA

A STUDY OF LIFESTYLE AND CHRONIC DISEASES (HIGH BLOOD PRESSURE) IN POLIKLINIK AL HILAL SETTING

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ABSTRACT

This study attempts of lifestyles patient of Poliklinik Al Hilal and chronic diseases *especially high blood pressure in Poliklinik Al Hilal setting. This research are identify* that symptoms of chronic diseases besides High Blood Pressure and some of this chronic disease may gives or symptoms of high blood pressure also conclude that cause of High Blood Pressure at Desa Pandan was influence by sex, nature of work, types of houses and types of transportation taking to work place.

In this investigation, a questionnaire will be developed and distributed personally. Generally according to secondary data the major causes is high blood pressure is known *but this research is to clarify the theory. The data was collected and analyse through* SPSS program.

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"As long as we're taught to believe we are victims to whatever health hazards come our way we won't have the necessary strength to change the conditions that gave us the trouble in the first place"

Margo Adair

INTRODUCTION

1.0 Background of Study

It is virtually impossible to go through life without encountering a medical problem. Therefore, good health is not just the absence of a major illness but it is a positive well being that brings a zest for living and makes each day a new adventure. It is the enjoyment of good food, with good digestion, proper utilization and adequate elimination. Good health is clear skin, fine muscle tone, maximum resistance to stress, infection and fatigue. It is living up to your fullest potential. In order to have healthy lives it involves exercises, having food and vegetables, and takes healthy meal.

Health problems go way beyond the good nutrition we do not put into our bodies. A major part of the problem is the bad stuff we do put it. Overweight makes a person far more likely to suffer from medical problem including heart attack, breast cancer, diabetes and blood pressure which the extra pound place on the heart and the joints.

Therefore, people need to change their life style by exercise, change their eating habits by taking more fruits and vegetables and follows healthy meal modules, gradually and permanently, to ensure they reach and maintain their proper weight... and a lifetime of better health.

1.1 Research Objectives

1.1.1 Primary objectives

The primary objective of this study is to determine the lifestyle patient of Poliklinik Al Hilal and chronic diseases especially high blood pressure in Poliklinik Al Hilal setting.

1.1.2 Supporting Objectives

A further objective of the study is to identify the symptoms of chronic diseases. Secondly, the study aims to identify the major causes of chronic diseases. Finally, the study attempts to find out to find the possible recommendations in order to reduce the probability to get high blood pressure

The research is expected to come with the major causes that affect High Blood Pressure, which are: -

- They did not exercise which means that they did not practising healthy lifestyles.
- They did not take balance nutritious according to food pyramid.
- They have the history of High Blood Pressure from their families.

1.2 HIGH BLOOD PRESSURE

Heart is a muscle that pumps blood throughout body. The right side of the heart pumps blood to the lungs, where blood receives oxygen. The oxygen – rich blood then travels back to the left side of the heart, where it is pumped to organs, limbs, brain and all the other parts of body. After the body has used up the oxygen in the blood, it sends the blood back to the right side of the heart and the process starts all over again.

High blood pressure is a treacherous disease. It is a silent killer progressing in body without symptoms until it's too late. Silently and relentlessly it is wearing out and aging the large and small arteries of your body. The heart begins to grow in size to try to push blood against the pressure. During the process the heart begins to tire out. Congestive heart failure is beginning, and kidneys are scaring and shrinking. However no one dies because of high blood pressure but they die because of other illness induced or made worse by high blood pressure, such as heart attack, stroke, heart failure and angina. High blood pressure also detracts from the quality of life. It can cause poor eyesight, depression, and morning headaches, fainting spells and ringing in the ears

1.2.1 The Pump

The heart is the central organ of the cardiovascular system. Its main function is to pump the blood throughout the body. It is an extremely busy organ, pumping about 70 times a minute, more than 100,000 times a day. This makes the heart the busiest organ in the body and undergoing the greatest mechanical stress. The heart is so special that it is made up of type of muscle found nowhere else in the body, cardiac muscle. This system is composed of not only the heart but millions of blood vessels and their billions of cells

whose proper function determines cardiovascular health. As the heart pumps, the vessels most affected by this action are the arteries. Pressure in the arteries is our "blood pressure".

1.2.2 Blood Pressure

Blood pressure is read as two numbers: systolic and diastolic (both from Greek words meaning contract and relax, respectively). Systolic pressure is generated when your heart muscle contracts and forcefully sends the blood through the arteries. The diastolic pressure is the remaining pressure in the arteries while the heart is refilling and getting ready to beat again. Blood pressure is expressed in millimeters of mercury. Until recently, instruments with a glass column of mercury were used in the measurement of blood pressure. These devices are currently accurate eventhough a bit cumbersome. If your systolic pressure is 120 and your diastolic is 80, it would be written as 120/80 or spoken as "one twenty over eighty".

1.2.3 The Measurement

A rubber cuff is attached to your upper arm. It is then being pumped up to above our systolic pressure. A valve on the pump allows the pressure to be released slowly while the technician listens to an artery in your arm. At first he hears nothing, but when more air is released from the cuff, a thump will be heard. This is the first heart sound and marks your systolic blood pressure. When it continue hear thumps as more air is

released; then the sound changes to a swishing noise. Pressure at this sound is the diastolic pressure.

Physicians used to talk about "borderline" or "mind" hypertension, defined as beginning around 140/90. But the language is false and misleading. Now the new terms classifying hypertension in stages. Table 1 below gives some guidelines:

TABLE 1: BLOOD PRESSURE IS INDICATION

CATEGORY	SYSTOLIC/DIASTOLIC	RECOMMENDATION
Normal	Less than 130/85	Recheck in two years
High Normal	130-139/85-89	Recheck in one year, begin lifestyle modification
HYPERTENSION		
Stage 1	140-159/90-99	Confirm in two months; begin lifestyle modifications
Stage 2	160-179/100-109	Medical evaluation; begin treatment within one month
Stage 3	180-209/110-119	Medical evaluation; begin treatment within one week
Stage 4	210/120 and over	Immediate medical evaluation and treatment

Reference: High Blood Pressure, Bruce Millers

1.2.4 Symptoms Of High Blood Pressure

Many people may not view high blood pressure as life threatening because it has few, if any, symptoms. However uncontrolled high blood pressure can increase risk for stroke, heart attack, heart failure and kidney failure. These symptoms listed may be very mild or start very slowly. Of course, some never get these symptoms at all, and no one gets all of them. If this symptom occurs, it is not bad to get blood pressure checked. Most common *symptoms are:* -

- ❖ Fainting spells
- ❖ Blurred vision
- ❖ Tension when there is no cause
- ❖ Flushing or redness of the face
- ❖ Spontaneous nosebleeds
- ❖ Morning headaches
- ❖ Ringing in the ears
- ❖ Depression without apparent cause
- ❖ Unexplained dizziness

There are all early signs and should be heeded by simply having your blood pressure checked. The biggest early warning signal of all is a Transcient Ischemic Attack (TIA) which occurs before one half of all strokes. A TIA is a brief "mini stroke" that temporarily reduces the blood supply to the brain. Often symptoms are so fleeting that they are dismissed, but a TIA is a very serious warning sign. A TIA is usually the result

of a small clot breaking loose in an artery that leads to the brain. The clot comes to an opening in the artery that is too small to get through, and the clot lodges properly. The situation resolves itself when the clot finally slips on through or the body's clot dissolving enzymes reopen the artery.

The most effective way to avoid symptoms of high blood pressure and TIAs is to control blood pressure in the first place. Even a reading of high normal (130-139/85-89) increases stroke risk by around 50 percent. Other conditions that can lead to uncontrolled high blood pressure exhibit the following symptoms:

- Excessive perspiration
- Muscle cramps
- Weakness
- Frequent urination
- Rapid or irregular heartbeat (palpitations)

1.2.5 Causes of High Blood Pressure

It is not always possible to determine blood pressure reaches higher levels in some people. *When a cause cannot be determined, high blood pressure is called hypertension* or primary hypertension. When the cause is determined, the term secondary hypertension applies. It means that the increased pressure results from another cause such as:

- Medications, include birth control pills, cold remedies, decongestants, over – the – counter pain relievers and some prescriptions drugs
- Kidney disease
- Adrenal disease

- ❖ Thyroid disease
- ❖ Abnormal blood vessels
- ❖ Preeclampsia, a significant increase in blood pressure during first three months of pregnancy
- ❖ Use of illegal drugs such as cocaine and amphetamines

1.2.6 Risk Factors

There are four major risk factors of high blood pressure that cannot be controlled. They are:-

- ➢ ***Age***. Risk of high blood pressure increases as one gets older
- ➢ ***Race.*** High blood pressure is more common in blacks than in whites.
- ➢ ***Gender.*** In young adulthood and early middle age, men have high blood pressure more than women. Men and women ages 55-64, rates are about equal. At ages 65 and older, rates for women surpass those for men. (***Mayo Clinic***)
- ➢ ***Family history.*** High blood pressure tends to run in families.

The risk factors that can be controlled or managed include: -

- ➢ ***Obesity.*** *The more body mass, the more blood need to supply oxygen and nutrients to* tissues. The volume of blood circulated through blood vessels increases, creating extra pressure force on artery walls.
- ➢ ***Inactivity.*** Lack of physical activity increases risk of high blood pressure by increasing risk of being overweight. Inactive people also tend to have higher heart rates. Their heart muscles have to work harder with contraction, increasing the force on arteries.

- ***Tobacco use.*** The chemicals in tobacco can damage the lining of artery walls, causing the arteries to accumulate plaques (fatty deposits that contain cholesterol). Nicotine also constricts blood vessels and forces heart to work harder.
- ***Sodium sensitivity.*** People who are sodium sensitive retain sodium more easily, leading to fluid retention and increased blood pressure.
- ***Low potassium.*** Potassium is a mineral that helps balance the amount of sodium in the cells.
- ***Excessive alcohol.*** Over time, heavy drinking can damage heart muscle.
- ***Stress.*** High levels of stress lead to a temporary but dramatic increase in blood pressure. Stress can also promote high blood pressure if you try to relax by eating more, using more nicotine or drinking more alcohol.

High blood pressure can be increased if the people have a chronic illness examples high cholesterol, diabetes, steep apnea and heart failure.

1.2.7 Complications

High blood pressure should be controlled to those who have it. Over time excessive force *on the artery walls can seriously damage many of body's vital organs. The higher the* blood pressure or the longer it goes uncontrolled, the greater the damage. High blood pressure can lead the following problems: -

- ***Damaged arteries***. This result of arteriosclerosis (hardening and thickening of the arteries), atherosclerosis (deposits of fat in the artery linings) and aneurysm (an enlarged, bulging blood vessel).

- ***Thickening of heart's main pumping chamber***. Being called left ventricular hypertrophy, which lead to heart failure. The heart muscle thickens in order to pump blood against the higher pressure in the vessels.
- ***A blocked or ruptured blood vessel in brain***. This lead to stroke. High blood pressure is the most important risk factor to stroke.
- ***Weakened and narrowed blood vessels in kidneys***. This prevents the organ from functioning.
- ***Thickened, narrowed or torn blood vessels in the eyes.*** This result in vision loss.

1.3 OTHERS CHRONIC DISEASES

1.3.1 DIABETES

The old textbooks used to call sugar diabetes. The name *diabetes mellitus* is from Greek. "Diabetes" is a term that means, "to go through". That is because frequent urination is a major symptom of these diseases. The word "mellitus" was added in the 17th century. It comes from the Latin word for honey. This refers to the sugar that shows up in the urine. *On the other words, diabetes is a disorder of the body's means of utilizing sugar*, or glucose, which is the body's basic fuel.

There are two types of diabetes. Type1 or "juvenile diabetes", which apparent in childhood or infancy, and is also called insulin dependent diabetes mellitus (IDDM) because the insulin dependent person must take daily injections of insulin to stay alive. Type 2 or "adult onset diabetes", occurs in middle age, which is called non-insulin

dependent diabetes mellitus (NIDDM) because it not necessarily a lack of insulin production, but rather the inability of the body to use it effectively.

1.3.2 Signs and Symptoms

Persistent high levels glucose in blood cause almost all the symptoms that may alert to development of diabetes. This includes: -

- ***Frequent urination***. Blood sugar high, kidneys can't absorb excess glucose. The glucose leaks into urine, pulling water with it.
- ***Extreme thirst***. The process of dehydration.
- ***Blurry vision***. High blood sugar causes new vessels to form and damage old blood vessels on the retina at the back of the eyes.
- ***Fatigue***. When cells don not get enough glucose, primary fuel sources.
- ***Weight loss***. To make up the loss fuel, body burns fat reserves and who may loss weight.
- ***Hunger***. Burning fats reserves.

1.3.3 Lifestyle modification

There are five lifestyle modifications for both types of diabetes. There are: -

- ***Sugar Level***. This is of course the number one in the list. Maintain the quantity of sugar as close to normal as possibly can all of the time. Several massive studies have shown that those who maintain their sugar levels have fewer diabetic complications.

- ***Diet Modification***. It is very key element in diabetes. This includes appropriate use of food supplements. Diet modification can alter insulin insensitivity and help prevent the complications of diabetes.
- *Obesity*. Definitely associated with reduced insulin sensitivity. Fat in the body has direct effect on the insulin receptors. Many people can control type 2 by just losing some fat pounds.
- *Exercise*. It can help your sugar under control and actually lower insulin requirement

1.3.4 *SLEEP APNEA*

Sleep Apnea is a potentially serious disorder in which breathing stops and starts during sleep. There are two types of sleep apnea: obstructive and central. Obstructive sleep apnea is the more common of the two. The muscles in the walls of throat (pharynx) relax while sleep so that the walls collapse on themselves and obstruct the flow of air. After 10 to 30 seconds or more of no exchange of air, rouse to a lighter level sleep or brief wakefulness. The muscle then regain the normal tone (tenseness), the obstructive is relieved and breathe.

Central sleep apnea is the brain fails to send proper signals to the muscles that control breathing. When breathing is interrupted, the level of carbon dioxide in the blood rises, may cause to wake up. People with central sleep apnea remember waking up rather than people with obstructive sleep apnea. More than half of all cases of sleep apnea is diagnosed in people 40 years of age or older. The condition is more common in men than women and is a major contributor to daytime drowsiness (***Mayo clinic***).

1.3.4.1 .Signs and Symptoms

The most common signs of sleep apnea include: -

- ❖ Excessive daytime sleepiness
- ❖ Loud snoring (although sleep apnea can occur with no snoring)
- ❖ Observed episodes of breathing stoppage during sleep
- ❖ Morning headache

1.3.4.2 Complications

Sleep apnea is considered a serious medical condition because it sudden drops in blood oxygen levels that occur during apnea increases blood pressure and strain the cardiovascular system. People with sleep apnea almost always develop high blood pressure (hypertension), which raises the risk of stroke and heart failure.

1.4 **HEART FAILURE**

Heart failure means the heart is not pumping enough blood to meet the needs of the body.

In congestive heart failure, heart is still working. However it has become weakened and is not circulating enough blood to meet the needs of the body – thus causing short of breath and fatigued, and to retain fluid in legs, ankles and feet.

Congestive heart failure affects mainly older adults. It is usually the end result of long – standing heart disease. It can also be a complication of a heart attack and uncontrolled high blood pressure.

1.4.1.1 Signs and Symptoms

Congestive heart failure does not occur suddenly. It develops slowly, over time. The first and only symptoms may be shortness of breath. Others signs include: -

- Fatigue and weakness
- Shortness of breath during exertion
- Shortness of breath when lying down
- *Wheezing or coughing up pinkish phlegm, with shortness of breath*
- Swelling in legs, ankles or feet
- Swollen (distended) neck veins
- Rapid weight gain
- Dizzy spells

1.4.1.2 Causes

Many conditions can weaken the heart and cause congestive heart failure. The most common include: -

- ***Coronary artery disease***. Arteries that supply blood to heart muscle become narrowed from fatty deposits. Blood moves more slowly through narrowed arteries. As a result, some areas of heart muscle may be chronically deprived of oxygen-rich blood.

- ***Heart attack***. A heart attack occurs when blood clot forms in a narrowed heart artery, blocking blood flow to a portion of heart muscle and damaging it. The damaged portion of the heart can no longer pump as well as it should.
- ***High blood pressure***. Blood pressure is the force of blood pumps by your heart through your blood vessels. If arteries are too stiff or narrowed from fatty deposits, the heart has to work harder than it should to circulate your blood through the blood vessels.
- ***Heart valve problems***. Four valves between the four chambers of the heart keep blood flowing in the right direction. If a valve to heart is damaged, heart has to work harder to keep blood flowing as it should. Over time this extra work can strain heart.
- ***Cardiomyopathy***. The heart muscle is damaged by a cause other than blood flow problems. Most cases of cardiomyopathy have no known cause, although some cases run in families. Damage to the heart in cardiomyopathy can lead to congestive heart failure.
- ***Abnormal heart rhythms (arrhythmias)***. Abnormal heart rhythms may cause heart to beat too fast. This creates extra work for the heart. Over time, this may weaken the heart and lead to heart failure.

1.4.1.3 Risk Factors

High blood pressure if not controlled has high risk for heart failure. Long standing heart disease (coronary artery disease or valvular heart disease) also increases risk for congestive heart failure. Diabetes also increases the risk for congestive heart failure. Over time uncontrolled diabetes is hard on the heart because its association with

hardening of the arteries. Kidney conditions also contribute to heart failure because lead to high blood pressure and fluid retention. More fluid in the body means more fluid for heart to circulate along with blood, which strain the heart.

1.5 NUTRITION GUIDE

There is more and more evidence showing that diet is a factor in avoiding disease and maintaining wellbeing. Moderation, variety and balance are the keywords (Healthy *Guide, 1999)*

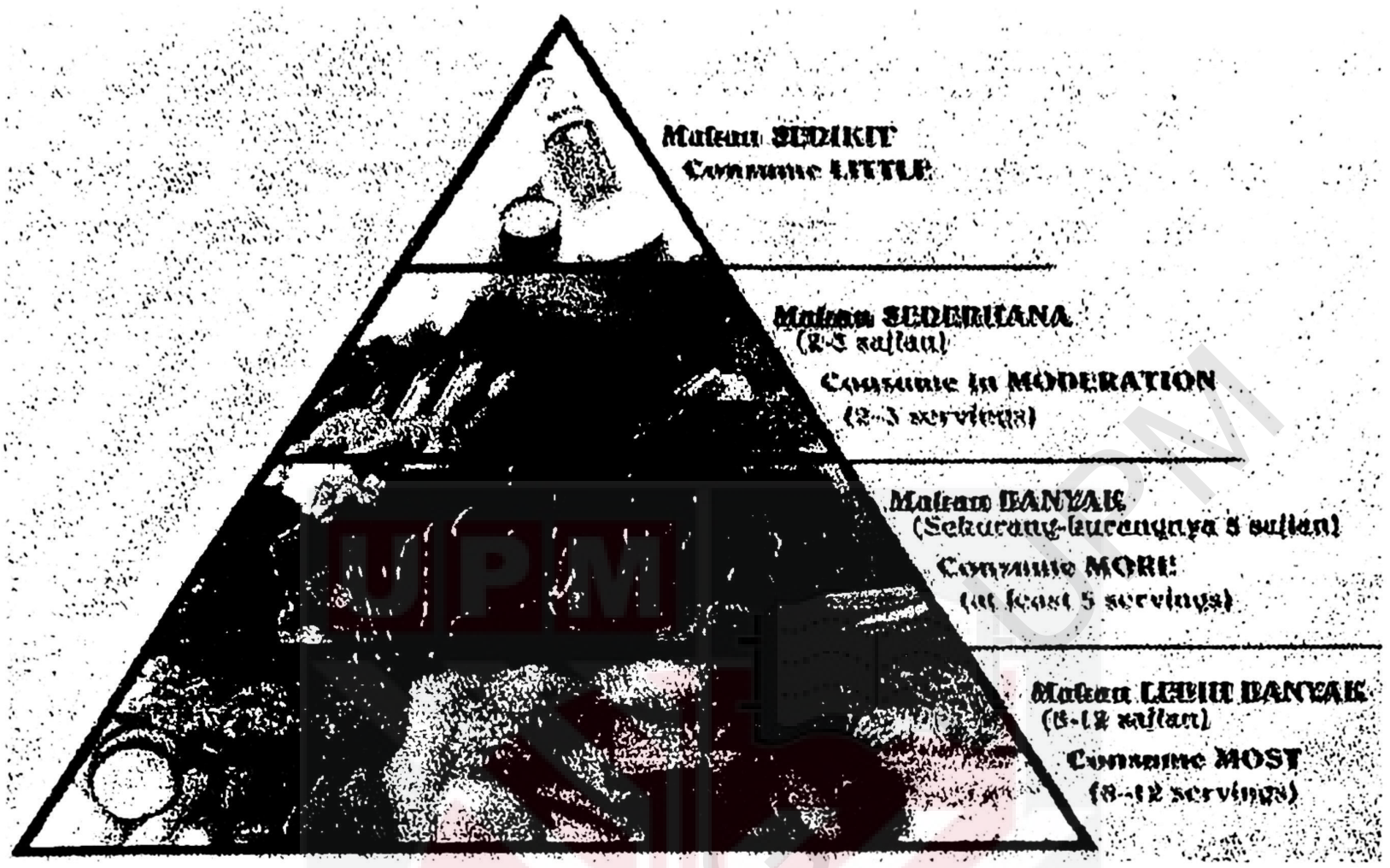
- Moderation means not eating too much of a particular food.
- Variety means eating as wide a selection as possible from each of the five basic food groups.
- Balance refers to the harmony achieved by following moderation and variety and ensuring the calories consumed equal the calories expended.

The five basic food groups are, as in the food pyramid: -

1. Bread, cereal, pasta and rice - Carbohydrates
2. Vegetables
3. *Fruits* } *Fiber*
4. Milk, yogurt and cheese - fat

5. Meat, poultry, fish, dry beans, eggs and nuts- protein

Figure 1:Food Pyramid



Source: Helthy Guide(1999)

A sixth group (fats, oils and sweets) consists mainly of items that are pleasing to the palate, but high in fat and / or calories. These should be eaten in moderation.

Table 2: Guideline for Balance Diet

1 SERVING IS EQUAL TO
1 Slice of bread or ½ bowl of rice or ½ bowl noodles or 2 small chapatis
1 cup raw leafy greens or ½ cup other vegetables, cooked or raw; or ¾ cup vegetables juice
1 medium apple, bananas, orange or ½ cup fruit – fresh, cooked or canned; or ¾ cup fruit juice
1 cup milk or 240g yogurt or 45g natural cheese or 60g processed cheese

Source: Healthy Guide, 1999

By referring to the food pyramid, it gives us the easier way to choose what to eat each day and the above table shows guideline for 1 serving meal as follows the food pyramid.

❖ *Fats, Oils and Sweet* should be used sparingly. This group contains many calories and little else nutritionally. The exceptions are vegetable oil, which contain varying amounts of Vitamin E, such as sunflower, safflower, cotton seed, corn and palm oils. Other oils contain vitamin K; these are soybean and canola oils and to a lesser extent olive oil.

❖ *Milk, yogurt, cheese* are richest source of calcium, protein and vitamin B_{12}. Choose low fat varieties to keep cholesterol and fat at a minimum.

❖ *Meat, poultry, Fish, Deans, Eggs, Nuts* are an excellent source of protein, iron, zinc and B vitamins, as are dried beans, legumes, pulses, nuts, and seeds. Tofu, if processed with calcium sulfate and fish with edible bones also supply

In order to keep fit and healthy body, we should notice about the energy contents in the food that we order or make. Here is the guideline of the energy content of some local food. Balance diet can achieve by following the food pyramid and the guideline of balance diet. It contains all the food pyramid segments.

1.6 EXERCISE AND FITNESS

Exercise is an important component of a healthy lifestyle. Cardiovascular fitness, referred to endurance or stamina, denotes fitness of the heart and circulatory system. The popular term to describe cardiovascular fitness is aerobic fitness. Aerobic means in the presence of oxygen, is an activity that uses large muscle groups. Regular exercise can do wonders to body, mind and overall wellbeing. Benefits of exercise include: -

- ✓ Strengthens heart and lungs
- ✓ Lowers the risk of heart disease, high blood pressure and diabetes
- ✓ Increases the good cholesterol in blood
- ✓ Burns fat and helps maintain a healthy weight
- ✓ Strengthens bones, reducing osteoporosis
- ✓ Increases strength and flexibility
- ✓ Boosts vitality, making more alert with better concentration
- ✓ Relax and sleep better
- ✓ Is a great way to deal with stress
- ✓ Improves resistance to clods and flu
- ✓ Contributes to more positive self-image and greater self confidence

When exercising, has to follow FITT formula such as: -

- ✓ *Frequency*. 3/5 times per week (evenly spaced out)
- ✓ *Intensity*. Exercise until perspire and breathe deeply.
- ✓ *Type*. Combination of aerobic and callisthenic exercise.
- ✓ *Time*. Each exercise session has 3 parts:- warm up (5-10 min), Aerobic exercise (20-60 min), Cool down (5-10 min)

1.7 **STRESS**

Stress is something all people experience in coping with continually changing environment. It physically and emotional effects and can create positive or negative feelings. As a positive influence, stress can compel to act, resulting in anew awareness and perspective of surroundings. As a negative influence, it can result in feelings and

distrust, rejection, anger and depression and lead to health problems such as headaches, upset stomach, rashes, insomnia, ulcers, high blood pressure, heart disease and stroke.

1.7.1 Signs and symptoms of stress

- ☹ Increased heart rate
- ☹ Tense muscles, especially around the neck and shoulders
- ☹ Headaches, stomachaches and diarrhea
- ☹ Feeling of tiredness and having trouble concentrating
- ☹ Changes in appetite, either overeating or loss of appetite
- ☹ Insomnia
- ☹ Feeling anti-social
- ☹ Being anxious or bad tempered and impatient all the time

5.1.2 STRESS MANAGEMENT

Stress can be a great motivator and should manage it and use it positively. For physical, exercise three to four times a week (moderate, prolonged rhythmic exercise such as walking, swimming, cycling or jogging). After that do slow and deep breathing which brings the heart rate to the normal respiration. Other that that, eat balanced nutrition meals, avoid caffeine, nicotine, alcohol and sugar. Mix leisure time with work, so that it feel not too stress, take a break for a while until everything become calm, get enough sleep and lastly once a week have a massage to relax the muscle. When have a problem, *find a person to talk with to reduce the tension.*

5.1.3 HEALTH SCREENING

Health screening is important for the high blood pressure patient and also for those who do not have the disease. The purpose of health screening is early detection of disease. If age above 40 years old, regular check up is need every one or two years. For the patient, regular check up is good in order to maintain or control the blood pressure.

5.1.4 OTHERS

- ✓ *Government should play an important role to provide the citizens with the volume of* knowledge about the good nutrition and good life. Government especially the Ministry of Health should advertise about the balance nutrition's at the prime time on the television, radio and others media electronic.
- ✓ Daily or 3 time per week prime newspaper promotion of healthy life style and good nutrition in big page coverage.

- ✓ The good citizen with the good health care can be obtain by giving education's of good of taking balance nutrition's at the early year especially the primary should and it should be add into the education subject especially in science or "kemahiran hidup".
- ✓ Prevent junk food in the local markets whether it's locally made or imported.
- ✓ Private company should play the role by provide the food which contain the balance diet and promote it to the citizen by doing a road shows, sample from house to house and putting banner at strategic place. Therefore not only the government and the private company plays the role to gain the good and healthy citizen, but the citizen itself should have the intensive to up grade themselves to gain the healthy body.
- ✓ All supermarkets must provide a place or special corner for healthy food with special signboard.
- ✓ All food; locally or imported must be labeled with its nutritional facts.
- ✓ All promotion must be throughout the year.

5.1.4 EFFECT OF THE INCREASE IN CHRONIC DISEASES

a) *Economic effected*

Increase in amount of chronic patient, less people will able to work and it will reduce the country gross product.

b) Bad perspective from others country

Malaysia is a beautiful country and one of our country incomes is from tourism sector. If many people get chronic diseases, foreign people will afraid to come to Malaysia. They will think that Malaysia people are not healthy. This will also reduce our economic.

c) Lack of capable people to administer the country

For not taking a healthy diet nutrition, many people will gets chronic diseases and therefore less of capable people to administer the country and lack of high educated and healthy citizen.

d) Social effect

When those people gets chronic diseases, they will jobless and in order to manage their life, they might becomes a thief or steeling money from other to get food.

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