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HEALTH EDUCATION PROGRAM FOR PREVENTION OF CORONARY ARTERY DISEASE IN PRIMARY HEALTH CARE CENTERS IN SAUDI ARABIA

by
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AN ABSTRACT OF THE PROJECT OF

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Cardiovascular disease is a public health concern that is increasing globally; it is a main source of illness and deaths in countries of Africa and the Middle East. In particular ischemic or coronary artery diseases (CAD) cause globally high rates of mortality and morbidity in both genders. Although there is a movement towards a decrease in morbidity in developed countries, the incidence of cardiovascular diseases is likely to increase in developing countries.

One key aspect to reduce CAD mortality and morbidity is reduction in cardiovascular risk factors. Some preliminary work on cardiovascular primary prevention is being done, but is not comprehensive to have significant impact.

In spite of current advances in diagnostic and treatment modalities, cardiovascular diseases remain the leading causes of mortality worldwide. The most recent data about deaths related to coronary artery disease in Saudi Arabia showed that 23.98% of overall deaths are due to CVD; this percentage ranks Saudi Arabia as number 32 in the world.

The purpose of this project is to develop the material needed for health education targeting clients at primary health care centers and aiming to reduce their risk factors of cardiovascular disease.

The educational program target clients visiting primary health care centers as this population gets its first contact with the health system at the centers. The program includes assessment of cardiovascular risk and an educational component. The educational component involves using a video already available in Saudi Arabia that addresses heart disease and risk reduction. In addition, two educational sessions using power point presentations were developed. Moreover, a booklet providing information about risk factors of heart disease and measures to reduce them was produced. A plan for implementation and evaluation of the program is proposed.

In order for this program to succeed, it is recommended to increase the number of Bachelor prepared nurses in the centers and train them on the delivery of this program by advanced practice nurses.

CONTENTS

CHAPTER I

INTRODUCTION

Cardiovascular disease is a public health concern that is increasing globally (World Health Organization [WHO],2008); it is a main source of illness and deaths in countries of Africa and the Middle East, particularly ischemic or coronary artery diseases (CAD) that cause globally high rates of mortality and morbidity in both genders (WHO, 2011). Although there is a movement towards a decrease in developed countries, the incidence of cardiovascular diseases is likely to increase in developing countries. Eighty percent of global cardiovascular diseases (CVD) related deaths and 87% of CVD related disabilities occur in low and middle income countries (Callow, 2006, Gaziano, 2007). In spite of current advances in diagnostic and treatment modalities, cardiovascular diseases remain the leading causes of mortality worldwide. For instance, since 1984 heart disease was found to cause significant mortality rates among women, therefore more women had died of heart disease compared to men, where CVD is causing one in three women deaths (Ranimah et al., 2012). A main contributor to CVD mortality is the suboptimal management of risk factors, which lead to recurrent acute cardiac events, worsening the patients' prognosis.

A. Significance

In 2011, the most recent data of WHO about deaths related to coronary artery disease in Saudi Arabia showed that 23.98% of overall deaths are due to CVD; this percentage ranks Saudi Arabia as number 32 in the world. The Ministry of Health in Saudi Arabia released a report that showed 42% of total deaths from non-communicable

diseases to be due to CAD. According to that medical report, there was only minor improvement in the number of CAD deaths between 2008 and 2009. Moreover, the report noted that “unhealthy dieting, lack of physical activity and tobacco use are considered the leading risk factors for cardiovascular disease.” (Saudi Ministry of Health, 2011). In addition, there are many causes that lead to CVD such as obesity, diabetes, and hypertension (Rasooldeen, 2014).A review of the prevalence of the modifiable risk factors of CAD in Saudi Arabia is important as these impact CVD morbidity and mortality; the modifiable risk factors are obesity, hypercholesterolemia, diabetes mellitus, smoking, and hypertension.

Obesity is the presence of an excessive build -up of body fat and leads to many of chronic diseases such as gall bladder diseases, diabetes mellitus, hypertension and CVD (Kumosani et al., 2011). A recent study conducted in 2013 by Memish et al. reported the prevalence of obesity in Saudi Arabia to be 24.1% among men and 33.5% among women. The difference in prevalence between genders is related to many causes such as lack of physical activity among women, as well as changes in weight and mood states that accompany pregnancy and delivery (Memish et al., 2014).

Hypercholesterolemia is an excess of blood cholesterol, namely due to abnormally elevated levels of low-density lipoprotein (LDL). Unhealthy diet, genetic factors and lack of physical activity lead to increased amount of LDL. Many diseases are related to elevated cholesterol levels in the blood like CAD (Girard-Mauduit, 2010). A study done by Basulaiman et al. in 2013 showed that Hypercholesterolemia is present in one million of the Saudi population, with 65.1% of them are undiagnosed at the time of the study. Health education, awareness campaigns and screening are needed to avoid

progression of many diseases that are related to hypercholesterolemia (Basulaiman et al., 2013).

Diabetes mellitus is a major risk factor for CVD as clients with diabetes have two times a greater chance of having heart disease or stroke at an earlier age. Women usually are at a lower danger of having heart disease than men of the same age until menopause after which the risk becomes the same in both genders; however women with diabetes at any age have an increased danger of heart disease (National Diabetes Information Clearinghouse [NDIC], 2014). According to recent statistics of the International Diabetes Federation (IDF), 3.8 million Saudis had diabetes in 2014 (IDF, 2014).

Hypertension is a disorder that results from high blood pressure and is a risk factor for ischemic heart disease, heart failure, and left ventricular hypertrophy (Kumosani et al., 2011). According to a national survey done in 2013 in Saudi Arabia, 15.2% of the Saudi population is diagnosed with hypertension and 40.6% is borderline hypertensive (El Bcheraoui et al, 2013).

Smoking is the most important risk factor for CVD, because it puts the smokers at a higher risk to have many chronic diseases like chronic obstructive pulmonary disease and atherosclerosis compared to nonsmokers. Smoking increases the risk of CVD by increasing the pressure of the blood and the chance for blood clotting. Also smoking increases the frequency of heart diseases after surgeries (WHO, 2010). A median prevalence of tobacco smoking of 22.6% was reported in Saudi Arabia among adults, increasing to 25% among older adults (Bassiony, 2009).

Lifestyles that involve a lot of sitting also lead to obesity, hypertension, and hyperlipidemia. The American College of Cardiology (ACC), the American Heart Association (AHA) and the National Heart, Lung, and Blood Institute (NHLBI) recommended moderate intensity physical activity for 30 min, 5 times per a week as a minimum. Also, Activity levels should be monitored regularly (Eckel et al., 2013).There is no statistics on physical activity in Saudi Arabia.

Since the morbidity and mortality associated with CVD is significant, this disease must be prevented through strategies that are population based and that deliver cost-effective interventions. The prevention must be planned for both clients who are diagnosed with CVD and for people who have risk factors to develop the disease (Lopez et al., 2006, WHO, 2003). In fact, the WHO has reinforced its attempts to promote primary prevention through a framework for non-communicable diseases. The framework focused on tobacco control, healthy diet, and physical activity. These activities impact risk factors that are common in many diseases such as chronic respiratory disease, diabetes, and cancer (WHO, 2004).

Helping clients to decide about modifying certain behaviors that might influence disease risk depends on providing essential knowledge of the disease risk factors (Homko et al., 2008). A study by Eshar and his colleagues in (2010) showed that improving knowledge related to cardiac problems is the first preventive method against CAD. A study by Holiman in 2006 showed that getting knowledge of CAD risk factors improves adherence to advice on lifestyle modification and medication administration (Holiman, 2006). Lifestyle modification depends on the client's knowledge about predisposing risk factors of cardiovascular diseases since lack of such knowledge would cause lack of motivation to modify lifestyle. Therefore, knowing the individual's risky

behaviors leads to knowing which behaviors should be changed. Highlighting the risk factors might facilitate the creation of a plan for reducing them. Primary and secondary prevention measures are effective in combating the epidemic of CVD (Parker & Assaf, 2005).

B. Responsibility of Advanced Nursing Practice in CVD Prevention

The costs of the Coronary artery diseases all over the world are very large. So it is important to find new prevention ways that are cost-effective. Health care professionals (nurses, physicians, etc.) can help in the CVD prevention process, especially in the high risk cases. Using an advanced nursing practice program has the ability to change the prevention of CVD positively by increasing education and management of risk factors of CVD to improve client's outcomes. A study by Riley in 2003 showed a positive influence of nurse practitioners in CVD prevention. Advanced practice nurses must resort to effective screening strategies to reach people who have risk for CVD. Those strategies are started using efficient and rapid screening tools or algorithms while examining these clients in the healthcare setting. Risk reducing interventions will then be tailored to the individual client’s risk status (Riley, 2003).

Advanced practice nurses (APNs) have to encourage the public to know about the good dietary and healthy lifestyle habits. Knowing the social and cultural habits of clients can help the APN in instructing clients with suitable dietary and lifestyle changes that are culturally sensitive. By putting policies tailored to socioeconomic factors, suitable methods could be provided to the community by the APN. Those methods take in consideration healthy lifestyles within the cultural context. (Leininger & McFarland, 2006, Stanhope & Lancaster, 2004). Although local, regional and national trials publish

cardiovascular awareness in several communities, there is a clear lack of knowledge in CVD prevention still in many cultures, especially people who live in low-socioeconomic environments. Giving these people easy and quality healthcare is important in decreasing the incidence of coronary heart disease; telling them how they can change their lifestyles and help in the process of CAD prevention will motivate these people to take role in their health management.

In 1979, the Ministry of Health in Saudi Arabia established a program that offered health promotion activities through primary health care centers (PHCs) including fundamental health services for people in the community. The PHCs have complementary relationship with main hospitals and represent the first contact of the community with the health system. Since 1993, the Ministry of Health established guidelines for quality of care in PHCs. The guidelines address the major processes of PHCs, which include referrals, management of non-communicable and communicable diseases, child and maternal health care. Vaccination, programs of health education, lifestyles and nutrition are also included (Al-Mazrou, 2002). There is a lot of evidence in developed countries that reflect the effect of health education programs in preventing chronic diseases and enhancing healthy behaviors (Alwan et al., 2013). However, a study done in Saudi Arabia and the United Arab Emirates showed the level of awareness about risk factors of chronic diseases to be low (Aljoudi & Taha , 2009). The primary health care centers offer services to a large number of the population and would be ideal sites for implementation of educational programs regarding cardiovascular health promotion and risk reduction. The purpose of this project is to develop an educational program for prevention of CVD in primary health centers in Saudi Arabia.

The project attempts to achieve the following objectives:

- Inform clients who visit primary health centers about their risk of CVD.
- Help Saudi clients to lead healthier, easier, and more comfortable lives.
- Help the primary health care centers in promoting people's awareness and knowledge about CVD.

The program activities include: development of a cardiovascular risk assessment tool, lifestyle modification and educational interventions (diet, exercise, and smoking cessation) according to the risk level, in addition to a booklet that address CVD risk reduction.

CHAPTER II

LITERATURE REVIEW

This chapter reviews the literature regarding cardiovascular risk assessment and prevention guidelines, outcome studies on educational interventions for cardiovascular prevention and risk reduction. It also reviews educational programs done in primary health centers.

A. Cardiovascular Risk Assessment and Prevention Guidelines

A number of organizations proposed guidelines on CVD prevention in primary health centers. One such guideline in Australia addresses secondary prevention of coronary heart disease. This guideline describes the factors that lead to heart diseases, the risk associated with each factor and solutions to reduce them. The factors that are

presented in this guide are: smoking, alcohol, diabetes, blood pressure, lipids, nutrients, and body weight. (National Heart Foundation of Australia [NHFA], 2012).

Similarly, the national center for chronic diseases and prevention (CDC) published guidelines for the prevention of heart diseases and stroke. The guideline identifies the main strategies to prevent heart disease and strokes as follows: stopping the use of tobacco, eating healthy food, being physically active, and finally controlling cholesterol and blood pressure. The guideline discusses activities taken by the CDC to prevent heart diseases. The activities include the National Heart Disease and Stroke Prevention Program that aims to change people life style to a healthier life (CDC, 2011).

The American heart association (AHA) and the American college of cardiology (ACC) seek to reduce cardiovascular diseases through their guidelines about the assessment of cardiovascular risk. The guidelines help health care providers and patients with atherosclerotic cardiovascular disease (ASCVD) to estimate 10-year and lifetime risks to ASCVD. Estimating the risk is dependent on sex, age, race, systolic blood pressure, medications used to lower blood pressure, total cholesterol, high-density lipoprotein cholesterol (HDL) and whether one smokes or not. Estimates of 10 year ASCVD risk are provided for men and women between 40 and 79 years of age, and estimates of lifetime risk for ASCVD are applicable for adults between 20 and 59 years of age. If the patient already has ASCVD, then he\she must have a check on his/her blood cholesterol and obesity, and start in changing his/her life style as per the recommendation mentioned in the 2013 AHA/ACC secondary prevention Guideline. Also, if the patient is free from ASCVD and his age is between 20 and 79, then he must check the traditional risk factors every 4-6 years (Goff et al., 2014).

Another guideline by the AHA/ACC was published in order to help manage overweight and obesity. The recommendations of the guideline serve as guide for health care providers to evaluate and treat overweight and obese patients through different strategies. This guideline identifies patients who need to lose weight, matches treatment benefits with risk profile, prescribes diets for weight loss, and advises patients to change their lifestyle. It also helps with intervention and counseling and identifies patients eligible for bariatric surgical treatment for obesity (Jensen et al., 2013).

Another guideline was published on CVD prevention for reducing ASCVD risk by treatment of elevated blood cholesterol. This guideline recommends statin therapy as a means of treatment. There are four classes of people defined by their ASCVD risk status and recommended for moderate- or high-intensity statin therapy. The patients could be: 1) individuals with clinical ASCVD; 2) individuals with Low density lipoprotein cholesterol (LDL-C) ⩾190 mg/dL, and are 40 to 75 years old with diabetes but no clinical ASCVD; 3) individuals with LDL-C 70 to 189 mg/dL without clinical ASCVD; and 4) individuals without clinical ASCVD or diabetes who are 75 years of age or older and have LDL-C 70 to 189 mg/dL and an estimated 10-year ASCVD risk of ⩾7.5%. The placement of the patients into one of the above mentioned divisions requires a clinician-patient discussion (Stone et al., 2013).

The National Heart, Lung, and Blood Institute (NHLBI), the United States Department of Agriculture (USDA), and the United States Department of Health and Human Services (USDHHS) provided three diet programs to support the choices of a balanced dietary regimen with restricted sodium and decreased saturated fat.

These three programs involved:

1- The Therapeutic Lifestyle Change diet (TLC): this program teaches clients how to control fat consumption and helps in reducing low-density lipoprotein (LDL) then reducing the risk of cardiovascular diseases. Taking 25 g of soluble fibers per day is a suggested way to reduce LDL (Hunt et al., 2004).

2- Dietary Approaches to Stop Hypertension (DASH) diet: this program depends on controlling both sodium and saturated fat. This program is suitable for clients who are predisposed to or have hypertension. It gives the clients examples of high sodium foods and teaches them how to deal with product labels and how to adjust sodium in their diet (National Institutes of Health [NIH], 2006).

3- MyPyramid diet: this program is easy to be followed because it depends on eating more vegetables, fruits, grains, and meats without fat, while reducing saturated fats and farinaceous food that includes high starch content. It can be followed by everyone in the family to keep the habits of healthy eating and cardiovascular health for generations in the family (USDA, 2006).

Each one of these programs is a good dietary model for CAD prevention. The client's obesity and metabolic process are frequently assessed by one of these methods:

1- Client's body mass index (BMI): this method is done using height and weight to know the client risk level for coronary heart disease. BMI values are divided into three levels (Weber & Kelly, 2003):

• If BMI = 20-24.99 kg/m2, then it is a normal finding.

• If BMI = 25-29 kg/m2, then it is considered as overweight.

• If BMI ⩾30 kg/m2, it is considered obese.

2- Waist circumference: is the most effective method to determine if the client has abdominal obesity, which is a strong predictor of CVD events.

3- Waist-to-hip ratio: this method depends on dividing the value of the circumference of the client's waist -at the center of the umbilicus- by the circumference of the client's hip -between the iliac crest and greater trochanter-. If the waist-to-hip ratio in females is > 0.8, then she have 3-5 times greater chance of having heart disease. Regarding to males, if the waist-to-hip ratio > 1.0 then he have 2.75 times chance to have heart disease. These values are easy and accurate to determine the risk of cardiac diseases (Weber & Kelly, 2003).

B. Outcome studies on education interventions for cardiovascular prevention and risk reduction

Primary prevention of coronary artery diseases could be applied to patients who do not have the disease whereas secondary prevention deals with prevention of further progression of the disease like recurrent cardiac events (Tamam, 2013). A systemic review done in 2010 examined community programs for the prevention of cardiovascular disease; the programs were offered between 1970 and 2008. The review identified 36 studies where the interventions used in the programs constituted different combination of environmental changes, screening, education materials, counseling and media. Investigators showed reductions in total mortality rates in seven studies that were not statistically significant. In 22 studies there were positive changes in CVD risk factors scores, showing a trend towards positive outcomes of the programs. The average net effect size was 0.65% in reduction of 10- year CVD risk, or 9.08% reduction relative to baseline (Pennant et al., 2010).

A more recent systematic review and meta-analysis were done to test the effect of lifestyle modification programs on patients with CAD, using studies conducted between 1999 and 2009 (Janssen et al., 2012). The review included 23 trials on 11,085 randomized patients. The programs provided psycho-educational interventions, behavioral modification interventions addressing smoking cessation, diet, exercise, and stress management, counseling, group and individual interventions, pharmacologic lipid management, and home based rehabilitation. In addition, the programs developed dietary and exercise schedules and taught clients about feedback techniques, goal setting, planning, and self-monitoring. Follow up activities were done by phone or at home. The findings of these programs showed positive effect on risk factors and behaviors related to lifestyle modification. The authors reported significant impact on all-cause mortality (odd ratio [OR] 1.34, 95% confidence interval [CI] 1.10–1.64), cardiac mortality (OR 1.48, 95% CI 1.17–1.88) and cardiac readmissions and reinfections (OR 1.35, 95% CI 1.17–1.55), favoring the intervention programs (Janssen et al., 2012).

In rural Maine, investigators studied the impact of a health education program that was integrated with medical services offered in primary health care centers on mortality related to CVD. The baseline relative death rate from coronary disease before the study was 0.79 (95% CI 0.91 to 1.03), during the program it was 0.91(95% CI (0.85 to 0.97), and during 11 years of program growth it became 0.83 (95% CI 0.78 to 0.88). However during periods of decreased encounters with the community program, the death rate went up to1.0. The authors concluded that the program was effective in reducing CVD related mortality in a dose dependent manner (Record et al., 2000). A study was done by Record and his colleagues (2015), where the investigators developed

a CVD prevention program that targeted cholesterol, hypertension, smoking, physical activity and dietary patterns. In this study, Record et al. used the findings of their previous study as baseline for comparison. The findings showed that blood pressure control showed a significant absolute increase of 24.7% (95% CI 21.6%-27.7%). Regarding cholesterol control, the proportion of control increased from 0.4% to 28.5% (absolute increase of 28.5%, 95% CI 25.34%-31.6%), also smoking quit rates increased significantly from 48.5% to 69.5%, $p < 0.001$ (Record et al., 2015).

In the USA, a prospective cohort study was done in a sample of 423 women from 32 sites (Villablanca et al., 2009). The aim of the study was to provide an educational prevention program for CVD that was developed by a national community organization for high risk women. The total period of the program was seven months, and its implementation involved four phases. Phase I was planning and development, in which the instrument of data collection was developed and assessed. Phase II included counseling sessions, and the period of this phase was four months. Each session lasted 120 minutes. The sessions addressed risk factors of CVD, strategies of risk modification, manifestation of heart attack, and stress management. Through the counseling sessions many activities took place such as, knowledge test pre and post, medical screening, and presentations. Before the first session all participants were assessed for CVD risk factors and after completion, participants were reassessed by the same screening tool. Phase III included maintenance sessions for three months. This phase addressed additional counseling seminar and included personal and group sessions. The aim of this phase was to continue the health education and to encourage participants to maintain their physical activity. Phase IV was an evaluation of the program through feedback and self-monitoring. The results showed the effectiveness of

the educational program in risk reduction. Knowledge was increased significantly and a number of risk factors were modified significantly after the program ($p<0.05$). There was a 10% increase in control of blood pressure ($p < 0.05$) from baseline to the end of the maintenance phase.

However other clinical parameters, namely BMI, physical activity, total cholesterol and fasting blood sugar did not improve significantly following the program. A major limitation of the study was the high dropout rate (Villablanca et al., 2009).

A review for multiple risk factors interventions done in 2011 to examine the effectiveness of interventions for primary prevention of CAD was made (Ebrahim et al., 2011). The interventions used education materials and counseling sessions to reduce CAD mortality and morbidity and to modify CAD risk factors. The selection criteria included all randomized controlled trials between 1998 and 2006, duration of the intervention more than 6 months, and the aim of all trials was to reduce risk factors of CAD. The results for 55 trials were as follows: an odd ratios (ORs) of hypertension and confidence interval in 16 trials was 0.78) 95% CI 0.68 to 0.89), and ORs of diabetes in 5 trials is 0.71(95% CI 0.61 to 0.83). The mean change in systolic blood pressure was -2.71 mmHg (95% CI -3.49 to -1.93) in 53 trials, the mean change in diastolic blood pressure in 50 trials was -2.13 mmHg (95% CI -2.67 to -1.58), and mean change of blood cholesterol was -0.24 mmol (95% CI -0.32 to -0.16) . In 20 trials, the odd ratio of reduction in smoking prevalence was 0.87(95% CI 0.75 to 1.00). There was no effect on mortality. Thus the review showed small significant reduction in risk factors that included cholesterol, blood pressure and smoking but there was a lot of heterogeneity (>85%) and no impact of the program on the prevalence of mortality or morbidity of

CAD. The authors concluded that health promotion interventions have limited use in the general population (Ebrahim et al., 2011).

The "Effect 5-year community intervention hart slag Limburg on cardiovascular risk factors" is a study that examined the effect of cardiovascular disease prevention program (Hart slag Limburg) on cardiovascular risk factors after five years of intervention (Schuit et al, 2006). The results showed significant reduction in in risk factors adjusted for age, smoking and socioeconomic status ($p< 0.05$) as follows: -0.36 kg/m2 in men and -0.25 kg/m2 in women; waist circumference -2.9 cm in men and -2.1 cm in women; systolic blood pressure: -7.8 mm Hg in men and -5.5 mm Hg in women; total cholesterol 0.11 mmol/L in women and finally serum glucose _0.23 mmol/L in women. These results showed the effectiveness of the program in reducing BMI, blood pressure and waist circumference in both men and women, and non-fasting glucose concentration in women (Schuit et al., 2006).

Despite variation in study designs and intervention types, the literature reviewed suggests that educational and counseling programs have benefits in reducing CVD risk factors to some extent. Although mortality and morbidity were not significantly impacted by such interventions, CVD risk factors were reduced, the extent depending on the type and duration of the intervention, risk status of the sample studied and duration of follow up.

C. Review of educational programs in Saudi in primary health care centers

In 2013, the AHA reported guidelines including: goals, evidence-based recommendations, and strategies to prevent cardiovascular diseases and that targeted group communities to increase their level of awareness about CVD and stroke. The

recommended programs involve different components such as counseling, screening measures, and lifestyle modifications. Moreover, the recommendations inform all clients how to access CVD risk screening services and how they can use the referral services to reduce the risk factors for CVD and stroke (Goff, 2014).

The WHO defines health education as "a tool for health promotion"; the purpose of the tool is to spread knowledge about health education to become more understood. The programs of health education are activities that work to promote health in the school, work site, home, etc. These programs are considered as tools to reduce diseases in general and heart diseases in particular, so they play an active role in CAD prevention (WHO, 2012).

The optimal place to administer health education in Saudi Arabia is primary health care centers (PHC); there is a wide network of PHCs among cities that is responsible to provide basic health care to the clients, especially chronic cases as CVD (Al- Ahmadi & Roland, 2005). A recent experimental study was conducted in Al-Qassim, Kingdom of Saudi Arabia (KSA) in PHCs to train the staff of some centers on different educational approaches to improve their methods in education. The materials of the education program included booklets, brochures, and charts already available in the canters that were provided by the Ministry of Health. In each center the medical students conducted seminars to teach the staff about the program. The study evaluated the impact of the education program on the intake of unhealthy diet, physical activity and smoking among patients of PHC centers. While controlling for gender, age, education level, marital status, and presence of family history of diabetes and hypertension; the findings showed that consumption of rice and dates decreased,

whereas that of fish and vegetables increased after the educational program. Also males were more likely to engage in physical activity and less likely to smoke after the program compared to baseline data (Midhet & Sharaf 2011).

Another health education program based on community intervention was developed by the Ministry of Health in Saudi Arabia on a small group of patients diagnosed with non-communicable diseases (NCDs) (Memish et al, 2015). The aim of the program was to raise the level of awareness in the public about risk factors of NCDs. Investigators used a pre and post design. The program activities included: prevention program, administering health education, and distributing five brochures that contain information about nutrition, obesity, physical activity, and behavior changes. The prevention program included six health awareness campaigns at primary health care centers, five showings in different areas in the community, and fifteen workshops providing health awareness. The findings showed that the level of awareness was higher by 11 times after the program compared with pre survey data. Also there was an association between socio‑demographic status and level of knowledge. Therefore, low educated clients got more information from health education programs when attending the units and less from the brochures (Memish et al, 2015).

Investigators in Saudi Arabia (Al-Khaldi et al, 2005) evaluated the PHCs in Asser region to know the availability of health education programs of diabetes and hypertension. A questionnaire was used to know the number of patients who were hypertensive and diabetic and identify the education materials that were used to educate the patients about their diseases. The results showed that there is availability of education programs in 90% of PHCs (Al-Khaldi & Al-Sharif, 2005).

A study examined the availability of the resources of hypertension care at PHCs in Southwestern Saudi Arabia. One of the resources assessed in this study was health education materials at PHCs. The educational materials those were available and usable in the centers included drug refill cards, videotapes, booklets, pamphlets and posters (Al-Sharif & Al-Khaldi, 2003).

In 2000, a study was conducted in Al-Khobar in three of the primary health centers to examine the quality of 183 health education posters in three centers. Different criteria were used to assess the quality of the posters, including clarity of the message, simplicity of the content, presence of errors, acceptability of the content and cultural appropriateness, in addition to the color and size. The results showed that the posters were nearly satisfactory. The investigator recommended that the posters should be contained in the education programs of PHCs (Al-Sowielem, 2001).

Thus most programs targeting PHCs provide services that tend to reduce CVD risk. There are few initiatives in Saudi Arabia towards CVD risk reduction. However, a comprehensive program is needed that can cater to the population throughout the kingdom. Such a program is proposed in the following chapter.

CHAPTER III
PROPOSED EDUCATIONAL PROGRAM

This chapter reviews the cardiovascular risk assessment tools that are used to estimate the risk factors of CVD and identifies the one to be used in the proposed program. Also, the educational methods and materials of the proposed program are then described. The Plan for program implementation in Saudi Arabia is included too.

A. Cardiovascular risk assessment

Several cardiovascular risk scores were developed that estimate the likelihood of developing cardiovascular disease in primary prevention. The effective strategies for CVD prevention require valid and reliable tools to recognize clients who are at risk to acquire the disease (Mosca et al., 2007). Reviewing the risk scores of CVD is meaningful to develop program for CVD prevention. The most commonly used scores are the Framingham heart study (FSH) risk score and systematic coronary risk evaluation (SCORE) score. The Prospective Cardiovascular Münster (PROCAM) score, QRESEARCH cardiovascular risk (QRISK1 and QRISK2) algorithms, and Reynolds risk score are also included.

The FSH estimates the 10-Year risk of coronary artery disease in men and women. The target age range is 30-76 years. The Framingham risk factors include age, sex, systolic blood pressure (SBP) and medications that treat hypertension. The total blood cholesterol, high density- lipoprotein (HDL), and smoking are also included. The format of this tool includes simple scoring sheets. The SCORE score is the European model for CVD risk assessment; it estimates CVD 10- year risk of mortality and the age range is 40-65 years. The tool is based on age, gender, SBP, total cholesterol and smoking. This tool includes two charts, one for low CVD risk European regions and the other chart for high-risk regions.

The PROCAM risk score is derived from the FHS and includes additional information such as family history of CAD, presence of diabetes, triglycerides, and

LDL. The range of age in this tool is 20-70 years. The tool is based on two different charts that calculate 10- year risk for CVD events and cerebral ischemic stroke. QRISK1 and QRISK2 algorithms estimate the 10- year risk of cardiac events. The variables of QRISK1 are sex, age, family history, SBP, antihypertensive treatment, diabetes, total cholesterol to HDL cholesterol ratio, body mass index (BMI), and smoking status. The additional information in QRISK2 includes ethnicity and chronic diseases. The age range of this tool is 35–74 years. The Reynolds risk score estimates the 10- year risk of incident myocardial infraction (MI), coronary revascularization, stroke and CVD death. The age of range is 45–80 years and the risk estimation is based on age, gender, family history of premature MI, high-sensitivity C-reactive protein (hs-CRP), glycated hemoglobin (HbA1C) if diabetic, total cholesterol, and HDL cholesterol (Cooney et al., 2010)

The estimation of risk factors in this project will use the World health organization (WHO) and International society of hypertension (ISH) risk scores charts. The WHO and ISH produced risk prediction charts for 14 epidemiological sub-regions. These charts estimate the 10-year risk of cardiovascular diseases, regardless if they are fatal or nonfatal diseases. The prediction depends on sex, age, smoking status, blood cholesterol, blood pressure, and diabetes for the sub-regions. The charts are divided into two groups; the first one is for the cases where blood cholesterol is measured and the second for the cases of where blood cholesterol measures are not available. Every chart is designated for one region, for example the charts of Eastern Mediterranean EMR B can only be used in the regions of Bahrain, Iran, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, United Arab Emirates. Instructions are provided by WHO and ISH and should be followed. Being

sure that the suitable chart has been selected and in the case of immeasurable blood cholesterol, charts without total cholesterol should be used. Also, information should be known before applying the chart such as: sex, age, smoking status, diabetes status, blood cholesterol, and blood pressure. Then the estimation of 10-years cardiovascular risk can be achieved by the following steps. First, the suitable chart for the diabetes status is selected and then the suitable table for the gender is picked up. Also, the suitable box for the smoking status and age group is noted. Finally the nearest blood pressure and blood cholesterol level within the box are selected, and the 10-year cardiovascular risk can be predicted by using the color of the cell as follows: A green block means the risk is < 10%, the yellow block means the risk is 10% to < 20%, the orange block means 20% to <30%, the red block mean 30% to <40% and the deep red block means that the CVD risk is ≥ 40%.

Since the target region is Saudi Arabia, therefore Eastern Mediterranean charts B will be used. There are two charts and each chart contains four figures. The first chart includes the cholesterol measurements with and without diabetes mellitus. In the second chart, blood cholesterol is not included, with and without diabetes mellitus. In the first chart, each figure has two columns; one is for males and the other for females, and both columns show the smoking status. Regarding the age, every column has eight boxes divided into small colorful squares and each box reflects a specific age range. The order of the square indicates blood pressure level in mm Hg. In the second chart, blood cholesterol is not included and the chart is divided into sections with and without diabetes mellitus (WHO, 2012). See appendix I for the CVD risk charts that will be used in this project.

B. Educational Methods and Material

The educational materials used in this program include a video about CVD and a pamphlet that shows modifiable and non-modifiable risk factors of CVD and tips for lifestyle modification. In addition, two group educational sessions that address CVD risk factors and reduction strategies are provided in the primary health care centers. The material for this program is based on the literature and it adjusted to be suitable to the culture of Saudi Arabia. The learning outcomes for this educational program are:

1- To describe the main symptoms of coronary heart disease

2- To differentiate between modifiable and non-modifiable CVD risk factors

3- To identify own risk factors

4- To recognize desirable values of blood pressure, blood sugar, blood cholesterol and body weight

5- To identify dietary sources of high salt, high calories and high fat

6- To list the dangers of smoking

7- To determine the adequate level of physical activity for cardiovascular health

8- To discuss ways to monitor own cardiovascular health status

1. Video

The video includes sections of the video that was developed in 2012 by King Abdullah Bin Abdul-Aziz Arabic Health Encyclopedia (KAAHE) and is available on the following website

http://www.kaahe.org/health/ar/555-%D8%A3%D9%85%D8%B1%D8%A7%D8%B6-%D8%A7%D9%84%D9%82%D9%84%D8%A8/555-7-D8%A3%D9%85%D8%B1%D8%A7%D8%B6-

%D8%A7%D9%84%D9%82%D9%84%D8%A8-%D8%AA%D9%82%D9%84%D9%8A%D9%84-%D8%A7%D9%84%D9%85%D8%AE%D8%A7%D8%B7%D8%B1.html.

The video provides a brief explanation about cardiovascular disease, starting with an introduction that address the structure and function of the heart, symptoms of heart disease, then described coronary artery disease, valvular disease and heart failure. The last section addresses CVD risk factors with tips on their prevention. The video uses simple language and there is multiple questions test on the website to evaluate the clients who attend the show. All components of the video are presented in Arabic. Permission will be secured to use the following sections of the video: introduction about the heart, symptoms of CAD, CVD risk factors and ways to reduce them.

2. Booklet

The booklet provides an overview about CVD facts and death rate from cardiovascular diseases in Saudi Arabia; also it includes the major modifiable and non-modifiable risk factors. The cover page includes the title of the program. The first page includes the definition of cardiovascular disease. The non -modifiable risk factors are presented in the second page. In the remaining pages, the modifiable risk factors are explained in details, with tips to reduce each risk factor. The material is prepared at a 5th grade reading level and is in Arabic. See appendix II for a copy of the booklet.

3. Educational Sessions

These sessions are used to reinforce the information provided in the video and booklet. The teaching plan stresses the importance of CVD prevention through

modification of risk factors that contribute to the development of the disease. The plan is an educational program created to help client without CVD who at risk to get the disease reduce their risk. The target audience of this lesson plan is adults (both genders) between 30 and 70 years of age. The education includes a combination of PowerPoint presentations, handouts and group discussion. The Plan would include 2 day classes, 1-2 hours each day, including presentations and group discussion. Appendix III shows the power point presentations that will be used.

The sessions will be conducted according to the plan below.

a. The nurse provider gives introduction to start the session. The main goal, objectives and activities are presented.

b. Before starting the video, the nurse provider shall evaluate the participant's' background knowledge about cardiovascular disease. The title of this activity is "talk about it", each participant will share his/ her information about CVD. Through this activity, the nurse provider will know the level of awareness among the participants and she/he compares the result with that of the final evaluation following the program.

c. Then the modified video will be presented, after which the provider discusses with the participants the video components and answers the participants' questions.

d. After discussion about the video, the provider explains in details the booklet by simple way and use the board to write the major components of each page. Then, the nurse projects the power point presentation to help explain about CVD risk factors and ways to reduce them.

e. Moreover, additional handouts will be given that portray foods to be avoided and those to be consumed, examples of physical activity and tips to quit smoking.

f. The tips on reducing each risk factor are given through different pictures that show the way to modify and controlled it.

g. The nurse provider asks frequent questions after each factor to keep the participants on the right track.

h. After completing all the materials, the provider summarizes all risk factors with the tips for modifying them.

i. The nurse provider follows the same way to present all risk factors. In last day, the responsibility of the provider is to summarize the information through reviewing the presentation and repeating the important items in the booklet.

Evaluation of knowledge gained in the program involves two parts:

Part one:

The evaluation form contains three questions about risk factors.

i. What is the difference between modifiable and non- modifiable risk factors?

ii. Define the risk factors that can be modified?

iii. Identify the modification tips of hypertension? (For example)

Part two:

The nurse provider divides the participants into two groups. The first group asks questions and the second group answers it. Then, the groups switch roles.

C. Plan for program implementation in Saudi Arabia

Approval for implementation of the program will be secured from the authorities. All clients will be assessed for their risk factors before joining the education sessions using the form shown in Appendix A. The assessment depends on the WHO/ISH chart. The main goal of this plan is to help clients make suitable lifestyle

actions and change behaviors to promote their cardiovascular health. Each client needs to recognize the risk factors of cardiovascular disease that cannot be modified. In addition, the client would recognize the risk factors of cardiovascular disease that can be modified and identify some tips that reduce them. The video can be run continuously in the primary health care centers in the waiting area while patients wait for their appointments. The patients will be approached in groups of 8-12 and invited to the educational sessions. The sessions will be planned on 2 days one week apart. A roster of attendees with their contact information will be collected for follow up. The plan is to implement this program initially in PHCs in the area of Jeddah as a pilot phase. Then it will be extended to the rest of the kingdom.

CHAPTER IV

PROGRAM EVALUATION AND RECOMMENDATIONS

This chapter shows the processes that are used to evaluate the program. Also, it presents the recommendations of the proposed program. Outcomes evaluation of the program can be done through assessment of the knowledge of CVD risk prevention prior to administering the program. Then, the assessment will be repeated at the end of the sessions. Moreover, the documentation of the CVD risk factors will be collected before the program and then three months later through a scheduled appointment. This documentation includes follow up on adherence with prescribed medications as

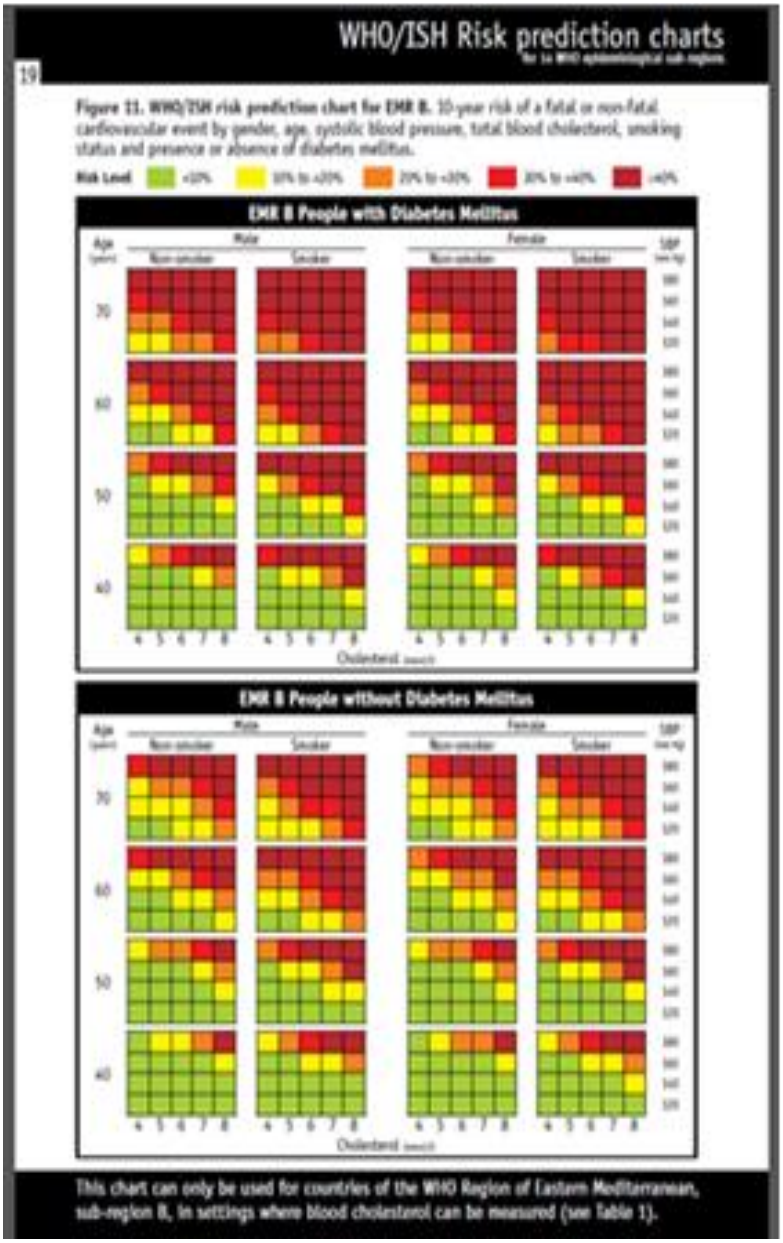
applicable, diet, physical activity and smoking status. Follow up of blood pressures readings, blood sugar records, and cholesterol measurements are also included. The process evaluation is reflected in the rate of attendance of the two educational sessions and follows up appointment.

The success of this program depends on the availability of human and material resources. According to the requirements of the program, the recommendations would be to increase the number of bachelor science prepared nurses in primary health care centers and educate them on CVD prevention so they can take over implementation of the program and teach the patients. The education would be through sessions provided by an advanced practice nurse responsible for the program that will explain the program in details and provide the nurses with documentations sheets and materials.

In conclusion, this project developed the material needed for health education targeting clients at primary health care centers and aiming to reduce their risk factors of cardiovascular disease. It is hoped that the program gets implemented to reduce the risk factors that lead to CVD.

APPENDIX I

WHO AND ISH RISK SCORE CHARTS



22

WHO/ISH Risk prediction charts

Figure 14. WHO/ISH risk prediction chart for EMR D. 10-year risk of a fatal or non-fatal cardiovascular event by gender, age, systolic blood pressure, smoking status and presence or absence of diabetes mellitus.

This chart can only be used for countries of the WHO Region of Eastern Mediterranean, sub-region D, in settings where blood cholesterol CANNOT be measured (see Table 1).

APPENDIX II

BOOKLET

عزيزي القارىء...

هذة لمحة سريعة عن أمراض القلب الوعائية وبعض الحقائق العلمية المتعلقة به

امراض القلب الوعائية :

هي مجموعة من الامراض التي يتأثر بها القلب والأوعية الدموية؛ ومنها مايلي

- **ارتفاع ضغط الدم**
- **امراض القلب التاجية**
- **فشل القلب**
- **أمراض الأوعية الدموية المحيطية**

أن امراض القلب والأوعية الدموية السبب الرئيسي للوفيات في العالم عموما وفي السعودية خصوصا.

وجود هذة النسب العالية من الوفيات بسبب هذة اللأمراض يدفعنا للحد منها عن طريق تقليل عوامل الخطورة التي تؤدي اليها.

ماهي عوامل الخطورة ؟

هناك عوامل لا يستطيع الشخص الحد منها و أخرى يستطيع منعها عن طريق تغيير نمط الحياة.

ماهي العوامل التي لاتستطيع الحد منها ؟

الجنس\ الذكر [Text]	التاريخ العائلي للمرض	العمر أكثر من 45 سنة للرجال و 50 سنة للنساء [Text]

ماهي العوامل التي تستطيع منعها

السمنة و زيادة الوزن

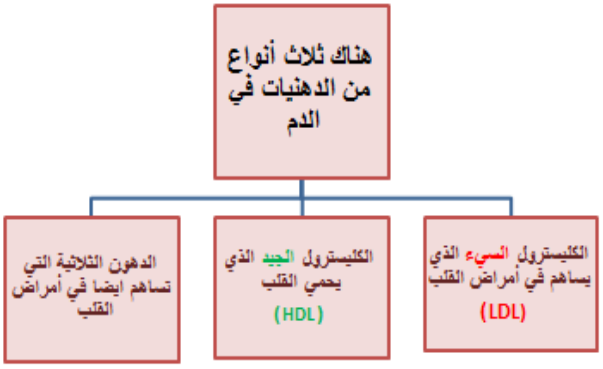
إرتفاع ضغط الدم

إرتفاع نسب الكوليسترول

السكري

التدخين

3. التحكم في نسب الكليسترول في الدم:



أنت قادر على حماية قلبك ..... كيف ؟

يجب اتباع نمط صحي في الأكل وخصوصا تخفيف الدهون المشبعة

القيام بالتمارين الرياضية

تناول الأدوية التى تخفض من مستويات الكوليسترول في الدم التي ينصح بها طبيبك

2. التحكم في ارتفاع ضغط الدم

يساعد إرتفاع ضغط الدم في عملية تصلب الشرايين وتطور أمراض القلب الأخرى

هل تعلم ؟ إن ارتفاع ضغط الدم لايحدث اي أعراض على المريض لكنه قادر على إحداث أزمة قلبية مفاجئة أو إحداث سكتة دماغية . ويسمى القاتل الصامت

أنت تستطيع التحكم في ضغط الدم...كيف؟

يجب عليك الحفاظ على وزن صحي وذلك بتناول الغذاء الصحي

ممارسة الأنشطة البدنية مثل المشي لمدة نصف ساعة 4-5 مرات في الأسبوع

الحد من تناول الملح

اتبع نصيحة طبيبك في تناول الأدوية التي تتحكم في ارتفاع ضغط الدم

4. التحكم في مرض السكري

هل تعلم ؟ أن المرضى الذين يعانون من مرض السكري هم أكثر عرضة مرتين للإصابة بأمراض القلب الوعائية

أنت قادر على وقاية نفسك من مرض السكري... كيف ؟

المراقبة الدقيقة لمستويات السكر في الدم

النظام الغذائي السليم

ممارسة التمارين الرياضية بانتظام

تناول الأدوية للمساعدة في الحفاظ على مستوى السكر في الدم بعد إستشارة طبيبك

5. التدخين

التدخين هو عامل خطر رئيسي لأمراض السرطان والقلب

هل تعلم ؟ أن خطر الإصابة بالأزمة القلبية يقل فور التوقف عن التدخين وبعد مضي عام عن التوقف عن التدخين يمكن أن يقل خطر الأصابة بالأمراض بنسبة تصل إلى النصف .

اذا كنت تدخن، لم يفت الاوان بعد للأقلاع عن التدخين. الأمتناع عن التدخين يمكن أن يكون صعبا في البداية، ولكن كل ما يتطلبه الأمر هو التخطيط والممارسة.

- تحديد موعد للإقلاع عن التدخين والبدء في تغيير بعض العادات
- لا تيأس وحدد الأسباب التي تحفزك لترك التدخين مثلا (أريد أن أكون قدوة لعائلتي)
- إستخدام منتجات إستبدال النيكوتين مثل : العلكة واللصقات والأدوية
- أطلب المساعدة من الأخرين مثل أصدقائك ليدعموك
- حدد الأوقات التي ترغب حينها في تناول السيجارة وأستبدلها بنشاطات تحبها
- إنضم الى أحد البرامج المقدمة للأمتناع عن التدخين

معلومات تهمك..

	المعدل الطبيعي
الكليسترول السيء (LDL)	أقل من 100 mg\dl
الكليسترول الجيد (HDL)	60 mg/dL
الدهون الثلاثية	أقل من 150 mg/dL
ضغط الدم	80\120 mm Hg
الجلوكوز في الدم	80-120 mg\dl

محتوى الصوديوم (الملح) في بعض الأطعمة	
نوع الطعام	كمية 100MG الملح
خبز أبيض	554
خبز إفرنجي	337
معكرونة	21
رز أبيض	6
شمام	12
ملفوف	69
فرنبيط مقلي	15
سلق	553
ورق عنب	55
سبانخ	145
سمك	67
جبنة بيضاء	320
لبنة	356

الأطعمة	النسبة المئوية للدهون الكلية	النسبة المئوية للدهون المشبعة	الكوليسترول
السمن البلدي	99.8	66	280
الزبدة	81.7	54	230
الدهن البقري الغير مطهي	66.9	28.6	88
جبن الشدار	34.4	21.7	100
الفاصولين المطبوخ	26.9	9.8	75
الدجاج الغير مطهي	17.7	5.9	99
بيف برجر مقلي	17.3	8	81
بيض الدجاج الغير مطهي	10.8	3.1	388
لحم البقر والخاروف الغير مطهي	7.8	2.9	270
اللبن كامل الدسم	3.9	2.4	14
كلى البقر والخاروف الغير مطهي	3.6	1.1	400

الأن: إسأل نفسك

ماهي عوامل الخطورة التي لا يمكن التحكم بها؟

أذكر اهم عوامل الخطورة التي يمكن التحكم بها عن طريق اتباع قواعد سليمة وصحيحة؟

ماهي النصائح التي ستقدمها لأفراد عائلتك بعد الأستفادة من هذا الكتيب؟

للمزيد من المعلومات:

http://www.kaahe.org/health/ar/555-

حافظ على صحة قلبك..

وأضف الى سنوات عمرك سنوات بإتباع نظام صحي..

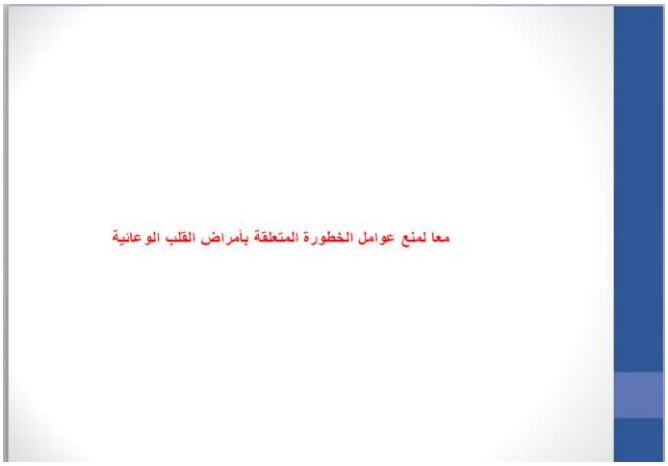
مارس الرياضة بشكل يومي..

أمتع جسمك بالأكل الطازج الطبيعي..

حدد يوم سنوي للكشف الشامل وعمل التحاليل..

تذكر.. التدخين يسيء لصحتك وصحة من حولك..

APPENDIX III
POWER POINT PRESENTATION



عوامل الخطورة تنقسم الى قسمين:

- عوامل لا يمكن التحكم بها
- عوامل نستطيع الحد منها

عوامل لا يمكن التحكم بها

- الجنس\ الذكر
- التاريخ العائلي للمرض
- العمر أكثر من 40 سنة للرجال وأكثر من 50 سنة للنساء

عوامل نستطيع السيطرة عليها

- مرض إرتفاع ضغط الدم
- السمنة
- التدخين
- مرض السكري
- إرتفاع نسب الكوليسترول

التحكم في مرض السكري

هناك نوعان من داء السكري

- النوع الأول المعتمد في علاجه على الأنسولين
- النوع الثاني: الغيرمعتمد على الأنسولين وعادة ما يصيب البالغين

❖ أن المرضى الذين يعانون من مرض السكري هم أكثر عرضة بمرتين للإصابة بأمراض القلب الوعائية

كيفية الوقاية

اذا كنت تعاني من مرض السكري:

- ✓ فيجب عليك التحكم بالمرض عن طريق المراقبة الدقيقة لمستويات السكر في الدم.
- ✓ النظام الغذائي السليم، الحفاظ على وزن صحي.
- ✓ ممارسة التمارين الرياضية بانتظام، مثل المشي السريع مدة نصف ساعة 5 مرات في الأسبوع.
- ✓ إذا كان لديك مرض السكري النوع الثاني قد تحتاج الى الأدوية للمساعدة في الحفاظ على مستوى السكر في الدم. أحرص على تناول الأدوية بانتظام.

إرتفاع ضغط الدم

- يساعد إرتفاع ضغط الدم في عملية تصلب الشرايين وتطور أمراض القلب الأخرى
- لذلك يجب عليك قياس ضغط الدم بطريقة دورية ومستمرة
- إن ارتفاع ضغط الدم لايحدث اي أعراض على المريض لكنه قادر على إحداث أزمة قلبية مفاجئة

كيفية الوقاية

- الحد من تناول الملح

(التقليل من كمية الملح في الطعام عن طريق الأبتعاد عن الأغذية المعلبة والمكسرات المملحة، تناول الخضروات والفواكة ، وإستخدام التوابل بدل من الملح لتحسين نكهة الطعام)

الكمية الموصى بها يوميا (2300 مليغرام صوديوم= ملعقة صغيرة من الملح)

- يجب عليك الحفاظ على وزن صحي
- ممارسة النشاط البدني مثل المشي السريع مدة نصف ساعة 5 مرات في الأسبوع.
- اتبع نصيحة طبيبك في تناول الأدوية المطلوبة التي تتحكم في ارتفاع ضغط الدم ولا توقفها حتى إذا لم تختبر أي أعراض

إرتفاع نسب الكوليسترول في الدم

- هناك نوعان رئيسيان من الكولسترول في الدم: البروتين الدهني منخفض الكثافة (LDL)، ويسمى أيضا "الكوليسترول السيئ" لأنه يزيد من خطر الإصابة بأمراض القلب. والبروتين الدهني العالي الكثافة (HDL)ويسمى ايضا "الكولسترول الجيد" لأنه يساعد على الحماية ضد أمراض القلب.
- الدهون الثلاثية هي نوع آخر من الدهون في الدم التي يمكن أن تزيد من خطر الإصابة بأمراض القلب.

كيفية الوقاية

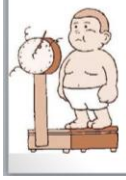
- يجب اتباع نمط صحي في الأكل بحيث يحتوي على أدنى مستوى من الدهون المشبعة
- تناول الأدوية التى تخفض من مستويات الكوليسترول في الدم التي ينصح بها طبيبك

ملاحظات

- كمية الدهون الموصى بها: 30 غرام يوميا
- هناك نوعان من الدهون:
- دهون مشبعة ودهون غير مشبعة
- الدهون المشبعة: هي التي تحتوي على كميات كبيرة من الكوليسترول وتؤدي الى الأصابة بأمراض القلب مثل (اللحوم،السمن،الكريمة، الزبدة وغيرها)
- الدهون الغير مشبعة: هي التي تساعد على خفض مستويات الكوليسترول في الدم وتوجد في الأسماك، المكسرات،و زيت الزيتون، زيت دوار الشمس)

السمنة

- تعني ببساطة الكثير من الدهون في الجسم ،وخصوصا حول الخصر، و يمكن أن تسبب الكثير من الأمراض القلبية.



كيفية الوقاية

- القيام بالتمارين الرياضية المنتظمة
- والتعود على نظام غذئي متوازن يساعد على التخلص من الوزن الزائد
- أهم وأنجح طريقة للتخلص من السمنة هي إتباع نظام غذائي صحي وذلك بالتقليل من الأطعمة الغنية بالدهون ومشتقاتها مثل اللحوم الحمراء
- الإنتباة لكميات الدهون التي تتوفر في الحصص اليومية كما ذكرنا سابقا
- مراجعة أخصائية التغذية في حال زيادة الوزن عن الوزن الطبيعي

التدخين

- عامل خطر رئيسي لأمراض القلب لأنه يزيد من مخاطر الاصابة بالنوبات القلبية والسكتة الدماغية. وايضا يؤثر على الشرايين التي تغذي القلب بالدم وأجزاء أخرى من الجسم التدخين يقلل أيضا من كمية الأوكسجين في الدم.
- أن خطر الإصابة بالأزمة القلبية يقل فور التوقف عن التدخين وبعد مضي عام عن التوقف عن التدخين يمكن أن يقل خطر الأصابة بالأمراض بنسبة تصل إلى النصف .

كيفية الوقاية

- اذا كنت تدخن، لم يفت الاوان بعد للاقلاع عن التدخين. الأمتناع عن التدخين يمكن أن يكون صعبا في البداية، ولكن كل ما يتطلبه الأمر هو التخطيط والممارسة.
- تحديد موعد للإقلاع عن التدخين والبدء في تغيير بعض العادات
- لا تيأس وحدد الأسباب التي تحفزك لترك التدخين مثلا (أريد أن أكون قدوة لعائلتي)
- إستخدام منتجات إستبدال النيكوتين مثل : العلكة واللصقات والأدوية
- أطلب المساعدة من الأخرين مثل أصدقائك ليدعموك
- حدد الأوقات التي ترغب حينها في تناول السيجارة وأستبدلها بنشاطات أخرى تحبها
- إنضم الى أحد البرامج المقدمة للأمتناع عن التدخين

بعض النصائح التي تمكن الفرد من تجنب خطر هذه العوامل

- ✓ إن الالتزام بنظام غذائي صحي أمرٌ مهم من أجل الوقاية من أمراض القلب. وهذا ما يشتمل على:
- تناول الأطعمة الفقيرة بالكولستيرول.
- زيادة كمية اللحوم البيضاء ولحوم الأسماك بدلاً من اللحوم الحمراء والقواقع البحرية.
- تناول الكثير من الخضار والفاكهة
- تناول البقوليات مثل الحمص والعدس
- التقليل من كمية الملح في الطعام عن طريق الإبتعاد عن الأغذية المعلبة والمكسرات المملحة، تناول الخضروات والفواكة ، إستخدام التوابل بدل من الملح لتحسين نكهة الطعام.
- تناول المكسرات غير المملحة
- التقليل من الألبان والأجبان كاملة الدسم وإستبدالها بألبان وأجبان قليلة أو خالية الدسم
- شرب كميات مناسبة من الماء يوميا
- التقليل من الدهون المشبعة والمتحولة والتي توجد في بعض أنواع الأطعمة مثل اللحوم ،الزبدة ،الكريمة ،زيت النخيل وزيت جوز الهند
- استخدام الدهون الغير مشبعة مثل زيت الزيتون، زيت الذرة،و زيت دوار الشمس.

تابع

- ✓ ترك التدخين يقلل من خطر الاصابة بأمراض القلب، وان كان صعبا فهناك العديد من البرامج المساعدة في المستشفيات الرئيسية.
- ✓ ممارسة الانشطة البدنية بشكل منتظم، مثل المشي السريع لمدة نصف ساعة 5 مرات في الأسبوع
- ✓ التحكم بالانفعالات العصبية يقلل من خطر الإصابة بالأمراض القلبية
- ✓ إستخدام الأدوية الموصي بها الطبيب مثل: أدوية الضغط والسكري بشكل منتظم.

معلومات تهمك

	المعدل الطبيعي
الكليسترول السيء (LDL)	أقل من 100 mg\dl
الكليسترول الجيد (HDL)	60 mg/dL
الدهون الثلاثية	أقل من 150 mg/dL
ضغط الدم	80\120 mm Hg
الجلوكوز في الدم	80-120 mg\dl

محتوى الصوديوم (الملح) في بعض الأطعمة	
كمية الملح MG 100	نوع الطعام
554	خبز أبيض
337	خبز إفرنجي
21	معكرونة
6	رز أبيض
12	شمام
69	ملفوف
15	فرنبيط مطهي
553	مطق
55	ورق عنب
145	سبانخ
67	سمك
320	جبنة بيضاء
356	لبنة

الأن: إسال نفسك

1.ماهي عوامل الخطورة التي لا يمكن التحكم بها؟

2. أذكر اهم عوامل الخطورة التي يمكن التحكم بها عن طريق اتباع قواعد سليمة وصحيحة؟

3. ماهي النصائح التي ستقدمها لأفراد عائلتك بعد الأستفادة من هذا العرض؟

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