CARDIOVASCULAR DISEASE IN MIDLIFE WOMEN: AN EDUCATIONAL MODULE TARGETING MODIFIABLE RISK FACTORS

by

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ABSTRACT

Cardiovascular disease (CVD) is the number one killer of midlife women in the United States. Many risk factors for CVD are modifiable and can significantly lower a woman’s risk for developing this disease. Sedentary lifestyle, smoking, high blood pressure, high cholesterol, and obesity are modifiable risk factors. An extensive review of literature shows insufficient programs to help lower the modifiable risks for midlife women. The following document proposes an educational intervention targeting modifiable risk factors for CVD in midlife women. The intervention is a computer-based program that would involve arriving thirty minutes prior to the scheduled office visit to complete the module. Then, the woman independently participates with the computer followed by an office visit with her primary care provider to allow for a thorough question and answer session. To ensure that information is conveyed there will be a pre-test and a post-test, and the woman will have printed handouts of the information that is pertinent to her risk factors.
Chapter 1

Introduction

The purpose of this project was to develop an educational module for midlife women intended to help them identify modifiable risk factors for cardiovascular disease (CVD). The long-term goal is to reduce morbidity and mortality from CVD among midlife women. The following chapter presents the problem, brief background, the purpose, and the significance of this project. Although the literature uses multiple names for CVD, such as heart disease, coronary artery disease, and atherosclerotic heart disease, the term CVD is used throughout this paper for simplification.

Problem Statement

CVD is the number one killer of midlife women. Although less is known about CVD in women than in men, known modifiable risk factors have been identified, and alerting midlife women to these may reduce future morbidity and mortality.

Purpose and Background

The purpose of this project is to develop an educational module that alerts midlife women to modifiable risk factors for CVD. CVD includes both heart disease and stroke. CVD claimed the lives of 863,298 people in 2001 (National Center for Health Statistics) making CVD the number one killer of American women (National Institute of Health (NIH), 2003). It is during ages 40-60 years that incidence of CVD begins to rise among women. Strategies to minimize CVD risk are controlling blood pressure and cholesterol, avoiding obesity, stopping smoking, and increasing physical activity (NIH, 2003). Among all women older than 35 years, there was a heart disease rate of 401 per 100,000
people (CDC, 2000). Every twenty-nine seconds, someone suffers a coronary event in the United States and every sixty seconds, someone dies from such an event (U.S. Department of Health and Human Services, 2003). CVD causes more than 39% of all deaths in the United States or 950,000 Americans every year and will cost the nation approximately $351 billion in 2003 (U.S. Department of Health and Human Services, 2003). It is the leading cause of death for older Americans, and it is the leading cause of death for all Americans age 35 and older (CDC, 2000). One of two women in the United States dies of heart disease or stroke, yet women are underdiagnosed and undertreated for these diseases and their risk factors (Mosca et al., 2002).

Decreasing CVD morbidity and mortality is dependent upon awareness of risk factors and knowledge of behaviors to prevent or detect it. Sparks and Frazier (2002) stressed the importance of family history in assessing CVD risk, as well as alerting individuals to changeable risk factors such as sedentary lifestyle, obesity, and smoking. Future research will build upon knowledge of risk factors, interventions that reduce risk and the potential for reduced health care costs as a result of successful interventions (Goetzel et al., 1998).

Significance

This project will focus on risk factors for CVD in midlife women (age 40-60 years) and identify modifiable risk factors. The underlying assumption of the project is that educating women about risk factors they can change is the first step toward reducing risk. The project also assumes that women are part of the health care team, that is a consumer of health care, and they are involved in their own health promotion.
Educating individuals about their health and ways to prevent disease is important to the nursing profession. Nurses and advanced practice nurses have contact with women in ambulatory care settings and are most often the professionals who provide health education. As well, health promotion and disease prevention are objectives of annual and periodic primary care visits provided by nurse practitioners. Since CVD is the leading cause of women's deaths, an educational module that targets midlife women can positively affect their health, reduce morbidity and mortality, and decrease health care costs.

Summary

This chapter introduced this project designed to educate midlife women about CVD and modifiable risk factors. It delineated the problem, background, purpose, and significance overall as well as the significance to nursing. The next chapter will focus on the theoretical framework and review of pertinent literature.
Chapter II

Introduction

In this chapter, the Health Promotion Model (HPM) will be discussed as the theoretical framework for the project. The HPM was created by Pender (1996) as a guide for increasing health-promoting behaviors. Friedman (1998) revised the HPM, and it is the revised version that will be utilized for this project. The HPM will serve as a framework for developing an educational module that targets women’s modifiable risk factors for CVD. Following a discussion of the HPM, relevant literature is reviewed and critiqued. Relevant literature includes CVD risk factors, sociocultural and ethnic factors, and perceptions of CVD risk.

Theoretical Framework

Nora J. Pender created the HPM in the 1980s to merge nursing and behavioral science perspectives about risk factors that have an impact on health promoting behaviors (Pender, 1996). Friedman’s Revised Health Promotion Model (1998) focuses on relationships among individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes.

The assumptions of the HPM stress that the individual has a large role in participating and maintaining health behaviors and in adapting the environmental surroundings for health-promoting behaviors (Pender, 1996). There are three basic features to the HPM. They are individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes. Interaction between the individual characteristics and experiences and the behavior-specific cognitions and affect
create the behavioral outcomes. The result is health-promoting behaviors. See figure 1 for a schematic view of this revised model.

This clinical project focuses on individual characteristics and experiences which may or may not affect a woman's willingness to change behavior. It is this behavior change that affects modifiable risk factors. For example, one modifiable risk factor for CVD is sedentary lifestyle. In order for a woman to change this risk factor by increasing physical activity, the HPM says that the woman's prior-related exercise or physical activity behavior and personal factors interact with behavior-specific cognitions and affect (her perception of the benefit to increased physical activity, her perception of barriers to increased physical activity, such as physical handicaps, too expensive, no time, her perception of self-efficacy, or if she thinks she can achieve increased physical activity, activity-related affect, interpersonal influences, and situational influences, such as ability to increase physical activity or access to facilities). Together these factors interact in ways that affect an actual increase in physical activity. The focus of this project is recognition of behavior-specific cognitions, whether biological, psychological, or sociocultural, that leads to the commitment to change behavior. By identifying modifiable risk factors for CVD in midlife women and motivating them to change, one step toward health promoting behavior is made. The intent of the module is to convince midlife women committing to a healthy, risk free lifestyle could and will decrease their CVD risk. The HPM will serve as a useful model for developing an educational module, and it will serve as an organizational framework.

To make Pender’s HPM applicable to the risk factor modification intervention a
Figure 1
Revised Health Promotion Model (Friedman, 1998)

Individual Characteristics & Experiences  Behavior-Specific Cognitions & Affect  Behavioral Outcome

Prior related behavior

Perceived benefits of action

Perceived barriers to action

Perceived self-efficacy

Activity-related

Immediate competing demands (low control) and preferences

Commitment to a plan of action

Health promoting behavior

Personal Factors:
Biological, Psychological, Sociocultural

Interpersonal Influences
(family, peers, providers);
norms, support, models

Situational Influences;
options demand characteristics aesthetics
revised HPM was created for the purpose of this project. The title changed to reflect the variables in the modifiable risk factor program was individual characteristics and experiences to identification of risk factors. See Figure 2.

Literature Review

Individual Characteristics and Experiences

Risk Factors

Goetzel and colleagues (1998) studied the impact of ten modifiable health risk behaviors and measures and their impact on health care expenditures, controlling for other measured risk and demographic factors. Employees from six large health care purchasers (n=46,026) were analyzed using retrospective two-stage multivariate analyses for up to three years after they completed an initial health risk appraisal.

The results indicated employees at high risk for poor health outcomes had higher expenditures than did subjects at lower risk. The seven risk categories were those who reported themselves as depressed (70% higher expenditures), at high stress (46%), overweight (21%), former (20%) or current (14%) tobacco users, with high blood pressure (12%), and with sedentary lifestyle (10%) (Goetzel et al., 1998). The employees with higher risk profiles had the following expenditures: heart disease (228% higher expenditures), psychosocial problems (147% greater expenditures), and stroke (85% greater expenditures) compared to those without higher risk profiles.

Sesso, Paffenbarger, and Tina (1999) studied the relationship between physical activity and CVD in midlife women. The study was an ongoing prospective cohort study, targeting alumni who attended the University of Pennsylvania between 1928 and
1940 in

Figure 2

Re-Revised Health Promotion Model (Friedman, 1998)

Identification of Risk Factors

Behavior-Specific Cognitions & Affect

Behavioral Outcome

Prior Related Behavior

Perceived benefits of action

Perceived barriers to action

Perceived self-efficacy

Activity-related

Immediate competing demands (low control) and preferences

Commitment to a plan of action

Health promoting behavior

Personal Factors: Biological, Psychological, Sociocultural

Interpersonal Influences (family, peers, providers; norms, support, models

Situational Influences; options demand characteristics aesthetics
undergraduate or graduate programs. In 1962 a cohort began when 4,302 women were mailed a questionnaire on physical activity, sociodemographic characteristics, personal medical history, and parental medical history; 2,608 responded (60.6%). Women with missing baseline data were excluded and the population became 2,363 alumnae aged 37-69 years. The women from the 1962 cohort were asked to report their activity levels at the current time (1993) and 1,564 women returned the follow-up questionnaires or were known to have died.

Of the 1,564 women BMI was calculated, coronary risk factors were evaluated, family history was collected, as well as flights of stairs climbed, blocks walked, and sports played. The mean age was 45.5 years, with a BMI of 22.4 kg/m² and a mean physical activity level of 1,082.9 kcal/week. During a total of 35,021 person-years of follow-up 181 CVD cases occurred. There was no association between physical exercise and lowering the risk for CVD in women. However, walking 10 blocks/day may be related to a 33% decreased risk of CVD. (Sesso et al., 1998).

Wasserman and colleagues (2000) studied 39,999 employees of six large companies to determine the gender-specific association between CVD and the prevalence of modifiable health risks and medical expenditures. Using the Health Enhancement Research Organization (HERO) database and the International Classification of Diseases, 9th Revision-Clinical Modification and Current Procedural Terminology codes, 2,452 employees with CVD were identified. Gender make-up of the sample was 66% male and 34% female.

Health risk data, a health risk appraisal, and biometric evaluation were gathered
from the voluntary participants (Wasserman et al., 2000). Tobacco use, hypertension, obesity, elevated cholesterol, high blood glucose, sedentary lifestyle, stress, depression, and excessive use of alcohol were evaluated health risks. The most consistent predictors of CVD among male and female groups were obesity (number one) and high stress. The majority of individuals with CVD were without a college degree, current or former tobacco smoker, living alone, obese, and had high stress, glucose, cholesterol, and blood pressure. The annual medical bills for individuals with CVD averaged $5,775 compared to $1,695 for the overall study group. The top four risk factors for men are former tobacco use, sedentary lifestyle, and high cholesterol. Whereas, the top four risk factors for women are sedentary lifestyle, high stress, former tobacco use, and obesity. This study suggests that within a group of employees with CVD, there are important similarities and differences between men and women with respect to the prevalence of risk factors and the association between health risks and medical expenditures.

Wong and Wong (1999) compared physical activity and estrogen therapy at reducing CVD risk. This was a meta-analysis of past research studies on this subject. No new research was conducted, but research already published on this topic was analyzed.

Results indicated estrogen use reduced cardiac risk by 50% (Wong & Wong, 1999). Until recently estrogen replacement therapy was proven to be beneficial. Health professionals should encourage menopausal women to maintain a high physical activity level, quit or continue not smoking, and to maintain an adequate weight. The latest results from the Women’s Health Initiative (Alving, 2004) declared that hormone replacement has no role in the prevention of CVD and that it actually causes an increased
risk for CVD. Also known is that exercise is an effective way to lose weight and decrease blood pressure. Exercise may reduce LDLc and raise HDLc in midlife women who enjoy the protection against CVD bestowed by estrogen. However, this may not be the case with menopausal women (Wong & Wong).

A cohort study of 5,689 adults aged 40 years or older enrolled in a Minnesota health plan and completed a 60-item questionnaire was completed by Pronk and colleagues in 1999. The goal was to examine the relationship between modifiable health risks to health care charges after controlling for age, sex, race, and chronic conditions. Resource use was measured by billed health care charges compared to health risk. Results indicated the mean annual per patient charge in the total study population was $3,570 (Pronk et al., 1999). Once age, race, sex, and chronic disease status were adjusted being physically active lowered health care charges by 4.7%, higher BMI equaled 1.9% charges, smoking increased charges by 18%, history of tobacco use increased charges 25.8%, and never before smokers had 49% lower charges than physically inactive smokers with a BMI of 27.5 kg/m2 (Pronk et al., 1999). This study concluded health plans should invest time and money into interventions that decrease health risks as a cost saving measure.

Wilson and colleagues (1998) studied the prediction of CVD using risk factor categories. Men (n=2,489) and women (n=2,856) ages 30 to 74 years old participated in a prospective (12 year), single-center study in the setting of a community-based cohort.

In the twelve year time frame 383 men and 227 women developed CVD. Developing CVD was associated with blood pressure, cholesterol, diabetes, and smoking.
Recommendation guidelines for the midlife white population from this study are blood pressure and cholesterol management.

According to Pender’s revised HPM identifying the individual characteristics and experiences is the first step. The modifiable risk factors have just been identified in the review of literature. These are all prior related behaviors.

Personal Factors: Biological, Sociocultural and Ethnic Factors

Appel, Harrel, and Deng (2002) examined disparities between 1,110 Southern rural African American and White women to determine if cardiovascular risk correlated with race, education, or income level. Body Mass Index (BMI) was controlled statistically and added to corresponding data. Data was collected by mailed questionnaire which posed questions about race, education, total family income, personal health history, personal health behaviors, height, and weight.

Appel and colleagues (2002) cited a need for an accessible, culturally tailored and community-based risk reduction programs focused on primary prevention of cardiovascular disease as a way to minimize cost for disadvantaged women. Harrell and Gore (1998) conducted a study in North Carolina comparing risk factors between Caucasian and African American women, and exploring whether or not those risk factors vary with income and education. A mailed survey was completed by 1,945 women aged 23-53 years. All participants were mothers of children taking part in the Cardiovascular Health in Children Study.

The study focused on major risk factors for CVD: elevated cholesterol levels, high blood pressure, smoking, and physical inactivity. African American women were
more obese than Caucasian women, and socioeconomic status was connected with an increased risk of CVD. The lower the income, the greater the risk factors for developing CVD. Lower socioeconomic status also correlated with increased smoking prevalence, obesity, sedentary lifestyle, and higher blood pressure and cholesterol levels. The study stimulated recommendations for programs focused on obesity risk, physical activity, and smoking education for women (Harrel & Gore, 1998). Programs should target the educational level of participants and be readily accessible. On the policy level, it was recommended that ways to explore the socioeconomic status of women be instituted. These changes should take into consideration culture, value systems, demographics, and possibly include children and adolescents because they need to learn healthy habits early in life (Harrell & Gore, 1998).

Results indicated that African American women had less education, less income, higher BMI, and a greater prevalence for hypertension, angina, and diabetes than Caucasian women. However, when all of these factors were adjusted for BMI, race was no longer significant. Women with the least education and income had the highest Cardiovascular Risk-Index regardless of race or BMI.

Winkleby and colleagues (1998) studied to determine whether differences in CVD risk factors by ethnicity could be attributed to differences in socioeconomic status (SES). The Third National Health and Nutrition Examination Survey was the design implemented between 1988 - 1994. African American (n=1,762), Mexican American (1,481), and Caucasian American women (2,023), aged 25 to 64 years were studied in eighty-nine mobile examination centers. These women completed both a home
questionnaire and medical examination. The outcomes measured were ethnicity, years of education, SES, systolic blood pressure, cigarette smoking, BMI, physical inactivity, non-high-density lipoprotein cholesterol, and non-insulin-dependent diabetes mellitus. The NHANES III was the method for analysis. NHANES III is the most comprehensive survey for determining risk for CVD among African American, Mexican American, and Caucasian American women.

Most CVD risk factors were higher among ethnic minority women than among Caucasian American women. CVD risk factors were higher among the African American and Mexican American women than the Caucasian American women. However, women of lower SES from each of the three ethnic groups had a significantly higher prevalence of smoking and physical inactivity and higher levels of BMI and non-HDL-C than women of higher SES (Winkleby et al., 1998).

Recommendations from this article include the need for reform in public health policies, health care systems, and intervention programs. Health care systems need to reach high-risk women and target them for screening programs and education. CVD is not curable, a fact that highlights the critical need for effective primary and secondary preventive efforts to lessen the substantial health disadvantages faced by ethnic minority women and women with low SES (Winkleby et al., 1999).

Personal biological and sociocultural factors are another element of individual characteristics and experiences. The review of literature highlights the ethnic and cultural factors that are barriers to the behavior outcome.
The next and last review of literature section covered is psychological perceptions of risk factors. This is the final area in Pender’s HPM regarding modifiable risk factors.

Personal Factors: Psychological Perceptions of Risk Factors

One thousand respondents 25 years or older participated in a telephone survey of US households (Mosca et al., 2000). African American and Hispanic women were oversampled to identify women’s knowledge of heart disease, stroke risks, symptoms, and preventative measures. Only 8% of participants knew heart disease and stroke were their greatest risk. Rather, 33% thought breast cancer was the greatest risk. Women 44 years of age and older had little knowledge of heart disease and stroke, and 90% said they would like to discuss heart disease or risk reduction with their physician. However, 70% reported that they had not done so.

Biswas and colleagues (2002) completed a study of 328 women aged 35 and older from the Durham Veterans’ Affairs Medical Center in North Carolina to determine if women worry about CVD. These women were mailed a questionnaire on their CVD risk factors. Respondents who worried about CVD were sent a second questionnaire. All surveys returned before November 1999 were included in this study. Items collected in the questionnaire were sociodemographic information, height and weight to calculate BMI and obesity, menopausal status, usage of hormone replacement therapy, physical activity, and family history of heart disease. All women were questioned how likely they are to get heart disease in their lifetime, compared to others in this age group.

Results indicated only 42% were concerned about heart disease. Fewer than 60% of women with any one risk factor worried about heart disease. Women who had many
risk factors present were more likely to worry. Older, married women were less worried about CVD than younger, single women, and 84% thought the average woman had a low lifetime risk of CVD. Despite evidence showing that the strongest risk factors for CVD in order are diabetes, smoking, and hypertension, participants with these risk factors were not worried.

A 2001 study by Riedinger and colleagues evaluated gender differences in quality of life in a large sample of age-matched and ejection fraction (EF) - matched patients with heart failure. The test took place at multi-center Studies of Left Ventricular Dysfunction trials. Equal men (n=691) and women (n=691) patients participated. The variables measured were global quality of life (QOL) and the QOL dimensions of physical function, emotional distress, social health, and general health. All of these were measured using the Ladder of Life, items from the Profile of Mood States Inventory, the Functional Status Questionnaire the B-blocker Heart Attack Trial instrument, and an item from the RAND Medical Outcomes Study instrument.

Women had significantly worse general life satisfaction, physical function, and social and general health scores than men (Reidinger et al., 2001). No differences persisted between gender groups for current life situation and emotional distress. Once the New York Heart Association classification was accounted for, women remained with worse ratings for intermediated activities of daily living and social activity.

After all of the controls were considered, women had worse QOL ratings. Reidinger and colleagues (2001) suggest focusing research on identifying why differences exist and developing measure to improve QOL in women with CVD.
A 2002 cardiovascular health management study of 1,099 employees was conducted by Guico-Pabia and colleagues. The study was prospective, pre- and post-evaluation of a worksite cardiovascular health program. The program for these employees consisted of employee education, measurement of cardiovascular risk factors, individual counseling for all participants, and follow-up screening for high risk candidates. High risk employees were identified using the Lucent Technologies cardiovascular health screening tools which were based on the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, National Cholesterol Education Program guidelines, and AHA guidelines for CVD.

Over half of the employees were classified as high risk (54.2%), 28% of the high risk employees completed the six month follow-up screening. During the high-risk, six month follow-up 64.7% increased their exercise, 71.3% improved their diet, 61.7% visited a physician, 16.8% began new cardiovascular medications, and 2.4% were diagnosed with diabetes (Guico-Pabia et al., 2002). Of the 909 participants, 99.7% who completed the satisfaction survey were satisfied or very satisfied with the program. Cardiovascular workplace screening can decrease the cost burden of medical cardiovascular interventions that resulted from cardiovascular injury or CVD.

The last area in the review of literature is the final piece of the individual characteristics and experiences. The personal psychological factors are equally as important as the personal biological and sociocultural factors, and prior related behaviors. The next step in Pender’s HMP is behavior-specific cognitions. It is during this part of the model that the woman needs to look at herself and her risks and decide where to go
from here.

Literature Review Synthesis

There are common and important themes in the literature review. CVD is number one for morbidity and mortality among women. Many of the risk factors for CVD are modifiable. Researchers consistently recommend educating women at a young age before their risks are too great. Risk factors can be lowered through change in behaviors. However, risk factor modification will not be possible until a woman realizes her risk for heart disease and its consequences (Biwas et al., 2002). This will lead us to chapter 3 where Pender’s behavior-specific cognitions will be analyzed.

Although the adoption of smoking cessation, cholesterol management, blood pressure control, and diabetes control programs is clearly warranted and can be cost-effective, these data suggest that stress management, treatment and prevention of depression, exercise, and weight reduction should also be given special priority (Wasserman et al., 2000). The challenge for public health professionals is to identify and understand groups of women with a high prevalence of risk factors and disease, and to design effective interventions at the individual societal levels to benefit these women (Winkleby et al., 1999). Socioeconomic status is a large risk factor for women since it is known that less education increases the risk for problems. Many articles say that changing behaviors reduces the risks for CVD. Healthy lifestyle behavior programs are needed that target young women for changing health behaviors to decrease CVD (Mosca et al., 2000).
Combining all of the literature reviewed, the following are the identified modifiable risk factors (or individual prior related behaviors) for CVD among middle-aged women: less income, less education, high cholesterol, high blood pressure, sedentary lifestyle, smoking, obesity, low QOL ratings, stress, depression, lack of access, alcohol, and lack of primary care provider education.

The review of literature verifies the need to find an appropriate educational module to help the low socioeconomic status target population. All of the literature stresses the need for education, but none the literature identifies an appropriate module. This leads to the need for this project.

Summary

The HPM was chosen to provide the theoretical framework for this project and relevant literature on CVD risk factors, cultural and ethnic factors, and perception of risk factors. According to Pender (1996) these are the prior related behaviors, and the biological and psychological personal factors. The critique of the literature reiterated the points made in the review of literature. There is no identified modifiable risk factor module for CVD. This leads to the next chapter which will identify the module chosen to reduce modifiable risk factors for midlife women with CVD.
Chapter III

Introduction

This chapter details the educational module developed for midlife women, which emphasizes modifiable risk factors. The module was informed by review of appropriate research studies and by protocol developed by the American Heart Association. To measure the impact of the module, participants complete a risk factor assessment, then a pre-test relevant to the woman’s risk factors, listen to the educational presentation, and then complete a post-test which will be the same as the pre-test. This provides evaluation of immediate learning. Long-term evaluation is beyond the scope of this project, but could include actual research of morbidity and mortality outcomes in this group compared to a comparison group that did not receive the educational presentation.

Procedure for Implementing the Educational Module

The procedure for implementing the education module will occur in a clinic office waiting area. Midlife women with medical appointments will be scheduled to come in 30 minutes before their appointment to complete a computerized CVD risk prevention screening. The program will target midlife women, introduce the topic, and administer the pretest. Once the woman has completed the risk factor assessment her knowledge of her risk factors will be evaluated through a pretest. Then, the computer will calculate the areas she is not knowledgeable with and deliver her the appropriate educational content. Information relevant to her will be printed to take home. After the content is delivered the posttest will be administered to evaluate learning. Following the 30 minute CVD risk prevention computer program, the woman will have her PCP appointment and the first 5
minutes will be focused on answering questions she may have regarding CVD.

Friedman’s Revised HPM model guides this method of knowledge assessment and learning. The modifiable risk factor assessment follows the individual characteristics and experiences of the woman. The behavior-specific cognitions and affect are evaluated through the educational module. Each woman will have the knowledge she possesses to go on to the next step. The next step is wanting and making the health promoting behavior change. By having the face-to-face time with the PCP she will have the motivating factor she needs. The PCP will supply provider support. The woman will receive everything she can from this method besides convincing herself she can change. Once this is accomplished she can reach her desired behavior outcome or reverse her unhealthy behaviors. The following information contains all the details of the module in the order which they fall.

Modifiable Risk Factor Assessment

1. Cardiovascular disease is the #1 killer among midlife women in America.
   a. True
   b. False

2. Is your total cholesterol greater than 200 mg/dL?
   a. Yes
   b. No

3. Are you currently on medications to control your blood pressure?
   a. Yes
   b. No
4. Do you smoke?
   a. Yes
   b. No

5. Do you exercise greater than 120 minutes a week?
   a. Yes
   b. No

6. Do you feel stressed?
   a. Yes
   b. No

7. Are you overweight?
   a. Yes
   b. No


Answers to Modifiable Risk Factor Assessment

1. a

2– 7. Differ for each individual. Ideal, risk free answers listed below.

2. b
3. b
4. b
5. b
6. b
7. b
Pre-test

Now that the modifiable risk factors are assessed, knowledge on these risk factors will be assessed through the pre-test. If the woman answers the pre-test questions incorrectly, she will receive the appropriate education for her individualized computer module. The rationale for completing the pre-test in addition to the modifiable risk factor screening is to evaluate what the woman already knows. For example, if she knows smoking cessation can reduce her risk for CVD she does not need to read it again on the computer module. She will only receive information on areas which she needs further education.

1. Cardiovascular disease is the #1 killer among midlife women in America.
   a. True
   b. False

2. Cholesterol can be lowered by eating healthful foods, losing weight if you need to, and exercising.
   a. True
   b. False

3. To lower my cholesterol I should choose foods with high-saturated-fat and high cholesterol.
   a. True
   b. False

4. I can lower my blood pressure by:
a. Losing weight if overweight
b. Eating a healthy diet low in saturated fat, cholesterol, and salt
c. Being more physically active
d. Taking blood pressure medication
e. All of the above

5. Even though I have smoked in the past I can reduce my risk for CVD if I stop.
   a. True
   b. False

6. Being physically active will lower my risk for CVD and also:
   a. Keep me awake at night
   b. Help control weight and blood pressure
   c. Make me look stressed
   d. Cause me to have a heart attack.

7. All stress is bad.
   a. True
   b. False

8. If I am overweight losing weight can raise my blood pressure and cause diabetes.
   a. True
   b. False

Educational Module

If a woman answers yes to two or more questions between numbers 2-7 they qualify for risk factor modification to decrease their risk for CVD. This will lead them to the pre-test. The pre-test will evaluate what the woman already knows about her risks for a particular area (smoking, sedentary lifestyle, etc.). If she answers a pre-test question wrong she will receive an introduction to CVD from the computer program, plus information and education on the incorrect pretest questions. See below for more details.

Question 1

Question number one on both the modifiable risk factor assessment and the pre-test asks the woman if CVD is the largest cause of morbidity and mortality among women in the United States. The correct answer is yes. Regardless of what she answered, this will be the introduction to CVD and appear on the computer screen:

CVD claimed the lives of 863,298 people in 2001 (National Center for Health Statistics) making CVD the number one killer of American women (NIH, 2003). It is
during ages 40-60 years that incidence of CVD begins to rise. Strategies to minimize CVD risk are controlling blood pressure and cholesterol, avoiding obesity, stopping smoking, increasing physical activity, and intervening promptly to heart attack signs and symptoms (NIH, 2003). Among all women >35 years, there was a heart disease rate of 401 per 100,000 people (CDC, 2000). Every twenty-nine seconds, someone suffers a coronary event in the United States and every sixty seconds, someone dies from such an event (U.S. Department of Health and Human Services, 2003). CVD causes more than 39% of all deaths in the United States or 950,000 Americans every year and will cost the nation approximately $351 billion in 2003 (U.S. Department of Health and Human Services, 2003). It is the leading cause of death for older Americans, and it is the leading cause of death for all Americans age 35 and older (CDC, 2000). One of two women in the United States dies of heart disease or stroke, yet women are underdiagnosed and undertreated for these diseases and their risk factors (Mosca et al., 2002).

Question 2 & 3

If the woman answered that her total cholesterol is greater than 200 mg/dL and answered either question 2 or 3 wrong on the pre-test the following information should be conveyed to the patient:

- What should I eat?
- What should I limit?
- What are some cooking tips for me?

Also, a printout of the information in Appendix A will be delivered. The information
was retrieved from


Question 4

If the answer to question 3 on the risk screening and got question 4 on the pre-test incorrect, education will appear as the following:

- Lose weight if you’re overweight.
- Eat a healthy diet low in saturated fat, cholesterol and salt.
- Be more physically active.
- Limit alcohol to no more than one drink per day for women or two drinks a day for men.
- Take medicine the way your doctor tells you.
- Know what your blood pressure should be and work to keep it at that level.

Also, a printout of the education found in Appendix B which was retrieved from

http://www.americanheart.org/downloadable/heart/1030375553786Reduce%20HBP.pdf

will be administered.

Question 5

If the patient answered they smoked on risk assessment question 4 and incorrectly answered question 5 on the pre-test, a lesson regarding smoking cessation needs to be completed. The information will cover the following guidelines:

- Why should I quit smoking?
- How do I quit?
- What if I smoke after quitting?
• What happens after I quit?

Also, the patient will receive and be educated on the handout in Appendix C which was retrieved from


Question 6

If the patient answered that they do not exercise greater than 120 minutes a week on risk assessment question 5 and answered pre-test question 6 wrong, they are at an increased risk for CVD. The program will educate them on the following:

• What else can physical activity do for me?
• What kind of activities should I do?
• How often should I exercise?

This education will be taught by using the attachment found in Appendix D or retrieved from


Question 7

If the woman answered yes to stress on risk assessment question 6 and answered pre-test question 7 wrong, the computer will educate on the following:

• What is stress?
• How does stress make you feel?
• How can I cope with it?
• How can I live a more relaxed life?

Education on this information will be administered by using Appendix E which was found at


Question 8

If the woman answered that she is overweight on risk assessment question 7 and incorrectly answered pre-test question 8, modifiable risk factor teaching covering the following steps will be completed:

• How can I lose weight?
• How should I change my eating habits?
• How can exercise help?

See Appendix F for the handout that was retrieved at


This completes the computer program educational session for modifiable risk factors for CVD in midlife women.

Post-test

To evaluate the effectiveness of this strategy, all of the women will receive a post-test immediately after completing the computerized educational module. It is exactly the same as the pre-test, and will be as follows:
1. Cardiovascular disease is the #1 killer among midlife women in America.
   a. True
   b. False

2. Cholesterol can be lowered by eating healthful foods, losing weight if you need to, and exercising.
   a. True
   b. False

3. To lower my cholesterol I should choose foods with high-saturated-fat and high cholesterol.
   a. True
   b. False

4. I can lower my blood pressure by:
   a. Losing weight if overweight
   b. Eating a healthy diet low in saturated fat, cholesterol, and salt
   c. Being more physically active
   d. Taking blood pressure medication
   e. All of the above

5. Even though I have smoked in the past I can reduce my risk for CVD if I stop.
   a. True
   b. False

6. Being physically active will lower my risk for CVD and also:
   a. Keep me awake at night
b. Help control weight and blood pressure

c. Make me look stressed

d. Cause me to have a heart attack.

7. All stress is bad.

   a. True

   b. False

8. If I am overweight losing weight can raise my blood pressure and cause diabetes.

   a. True

   b. False


Answers to Post-Test

1. a

2. a

3. b

4. e

5. a

6. b

7. b

8. b
Summary

Chapter 3 provided the format for educating women with a high risk for CVD. The risk was calculated by the modifiable risk factor assessment and knowledge was assessed through the pre-test. If the woman had answers that indicated she was at a high risk for CVD and had no knowledge about CVD, all of the education in the appendices relevant to her answers are printed and appear before her. Once she has received the information, she will complete the computerized post-test. The post-test will determine if the computerized educational module on CVD risk factor modification is an effective tool to help lower risk for CVD.
Chapter IV

Introduction

Chapter 4 will focus on discussion of the project, the strengths and limitations, the relevance to nursing, and suggestions for future projects and research. Also, Pender’s HPM will be incorporated into the discussion. The need to further investigate CVD in women has been established through an extensive review of literature and various national boards. An intervention consisting of a computer module that focuses on educating women has been developed as well as a method to test if this method is effective.

Discussion of Project

The computerized CVD risk prevention module proposed with this project was based on Pender’s HPM. The HPM provides the basic structure of the project. (See Figures 1 & 2.) Friedman’s Revised HPM (1998) highlights each woman’s individual characteristics and experiences along with her behavior-specific cognitions and affect to create a behavioral outcome. In the context of this project the modifiable risk factors for CVD are the target individual characteristics. To change these, the woman needs to discover her own barriers and influences and overcome them before committing to a plan of action to yield health promoting behaviors. From this foundation, a CVD risk prevention module was born. It was developed to individualize education to target each woman’s specific risk. Women can privately disclose information and receive guidelines and advice to aid in changing unhealthy (or CVD risk factor) behaviors. While the woman is pondering her own risk factors she thinks about the barriers and influences that
need to change in order to reduce risk. This makes the program her program. It is a strength of the project.

Women can complete this module at their own pace. Thirty minutes will be allotted before the office visit, but if a woman needs more time she can take home and read the handouts at her desired speed. The ongoing revisions of the module are facilitated by results of the posttest.

Limitations

Limitations include computer or reading illiteracy, lack of learning from a computer versus a person, inability to accurately judge learning from the posttest, and PCPs and women who are unwilling to participate in the program.

Strengths

A strength of this computerized module is its cost-efficiency. The only financial cost is the computer and software. The module affords cost efficiency as well because it does not require undivided time with the clinicians whose time is valuable and expensive.

Once the woman is finished with the module, her appointment follows and she is given five minutes of her office visit to have her questions answered by her provider. During this time, the PCP can provide resources to help her achieve positive results by eliminating barriers, perceived self-efficacy, activity-related affect (feelings regarding completing a desired activity), interpersonal influences, and situational influences (Friedman, 1998). This is also time-efficient for her NP/physician since the majority of the education was done via the computer.

Ultimately, this project needs to be the woman’s project. She needs to have the
drive and the desire to change her modifiable risk factors. Two studies were reviewed that guide in understanding the importance of keeping this project individual. The first study is by Nies and Kershaw (2001). Their goal was to create a structural equation model to discover how to increase exercise in women with a sedentary lifestyle. Variables included thirteen predictors (perceived benefits to exercise, self-efficacy, goal setting, restructuring plans, relapse prevention, social support, work hassles, community hassles, family hassles, age, race, income, and education), two mediator variables assessing physical activity (performance, physical activity level), and three health outcome variables (body size, vigor, and fatigue). This model worked well. Self-efficacy, age, race, and income correlated with physical performance, and restructuring plans, relapse prevention, and age related to physical activity level. Performance was inversely correlated with body size, and physical activity level was directly related to perceived vigor. The conclusion of this study indicate that psychosocial determinants are important factors in understanding physical activity and psychophysiological health, and should be incorporated into intervention programs focused on increasing physical activity and improving health outcomes in women. This project does indeed follow the advice from Nies and Kershaw (2001) being that psychosocial determinants are considered through Pender’s HPM and the goal is to decrease modifiable risk factors and improve the health outcomes in women. The reason for reviewing this article was to reiterate the importance of psychosocial determinants. In other words, giving the woman the knowledge she needs to change her modifiable risk factors will not change her risk factors. She needs to find that decision and conclusion herself. A PCP can guide her
decision, but cannot make it for her.

The second study reviewed is by Song and Lee (2001). They studied the effects of a 12-week cardiac rehabilitation exercise program on motivation and health-promoting lifestyle. The study included fifty-seven participants in a cardiac rehabilitation exercise program and fifty-seven controls who recently had a heart attack or underwent cardiac-related procedures. The data measured was motivation and health-promoting lifestyle. The intervention consisted of a 12-week cardiac rehabilitation exercise program for small groups of participants. The program provided arm and leg exercises 3 times a week for 30 to 60 minutes per session at an intensity of 60% to 90% of the maximum heart rate. The results showed that after controlling for education, income, and pretest scores, the exercise group scored significantly higher than the comparison group in most motivation-related variables. Regarding lifestyle both groups showed positive changes during the 12-week period, but no significant difference was found between the two groups in overall lifestyle. In conclusion the findings of the study confirmed that motivational variables were modifiable. Thus, when developing health promotion programs for initiating and maintaining a healthy lifestyle, the relative importance of different motivational variables should be considered. Regarding the CVD risk prevention computerized module for women, Friedman’s Revised HPM enables consideration of motivational factors to change lifestyle. This article is important to the study because as providers we can only provide knowledge and education. The decision to change behavior is dependent upon the individual woman. These are being considered and now validated by Song and Lee (2001). These two research articles verify the need to make
CVD risk factor modification unique and individual to every woman.

Originally, when the concept of the CVD risk factor modification program for midlife woman was fashioned it was going to be a face-to-face interview with one to six women. Brainstorming this idea created all sorts of problems such as time, money, privacy, and degree of learning.

Modifiable risk factor screening, pre and posttests were added to determine effectiveness of the module. If the women are unable to answer posttest questions with accuracy, the module will be revised accordingly. The questions chosen for the posttest were picked from the American Heart Association website. The questions will demonstrate basic knowledge of CVD as conveyed by the educational module.

The strongest feature of this project is its individual approach to risk assessment and teaching. As well, the module allows for open questions and answers with the client and PCP. This occurs at a time when concepts are still fresh in the client’s mind. Cost-efficiency for both the patient and the clinic is considered with this teaching approach as is individual paced learning. Take home materials reinforce learning.

Relevance to Nursing

According to Healthy People 2010, there are many leading health indicators. This program will focus on several of the major trends identified by Healthy People 2010. They are physical activity, obesity, tobacco use, and access to health care. Interventions that will be done to help the Healthy People 2010 initiative are education on importance of physical activity to prevent obesity which will lower the risk for CVD. Educating on the benefits of not using tobacco may lower risk for CVD. Teaching health promoting
and disease prevention strategies supports the Healthy People 2010 initiative and purpose.

According to Parsons (1999) the challenge to PCPs is to create the future of health care through complete physical, mental, and social well being, and not just the absence of disease or infirmity. Following the 2010 guidelines and this project will allow the patient to feel physically, mentally, and socially healthy as well as reducing their risk for disease.

Now is the right time for this program. CVD is the number one killer of women in America. CVD does kill 39% of the people in the United States, and every sixty seconds someone dies from CVD. In 2003 CVD cost the nation $351 billion dollars. This program would end up saving money in the long-term perspective. Spending money on an exercise program/gym or on blood pressure medication would save lives and hospital bills since the CVD risks will be reduced.

Nursing is in favor of health promotion and disease prevention. Every aspect of the computerized module targeting midlife women and decreasing their modifiable risk factors for CVD supports nursing. Compliance with this module can yield great results!

Suggestions for Future Projects/Research

To actually carry out this study and create the computer module focused on lowering the risk factors for CVD among midlife women and statistically determine the relevance of the project through data analysis.

Another suggestion is to carry-out this study on women before they reach midlife. The highest risk population for CVD in women is midlife (40-60 years old) women.
would make sense to enforce this project on women 20-39 years old before they reach the high risk age.

If resistance was met with the computerized module, this program could be in a group format post-clinic hours. However, this would meet resistance with cost, time, privacy, and confidentiality.

Conclusions

In conclusion, chapter four reviewed the computerized CVD risk prevention module, the strengths and limitations, the relevance to nursing, and suggestions for future research. The effectiveness of this project could possibly lower the fact the heart disease rate of 401 per 100,000 people (CDC, 2000) to 400 per 100,000 women and this would make this study worthwhile.

Thank You!
Appendix A-1 High Cholesterol

How Can I Lower High Cholesterol?

Too much cholesterol in the blood can lead to heart disease and stroke — America’s number one and number three killers. Even though there’s much you can do to lower your cholesterol levels and protect yourself, half of all Americans still have levels that are too high (over 200 mg/dL).

You can reduce cholesterol in your blood by eating healthy foods, losing weight, if you need to, and exercising. Some people also need to take medication because changing their diet isn’t enough. Your doctor and nurse will help you set up a plan for reducing your cholesterol — and keeping yourself healthy!

Most heart and blood vessel disease is caused by a buildup of cholesterol, plaque (pink) and other fatty deposits in artery walls. The arteries that feed the heart can become so clogged that the blood flow is reduced, causing chest pain, if a blood clot forms and blocks the artery, a heart attack can occur. Similarly, if a blood clot blocks an artery leading to or in the brain, a stroke results.

What should I eat?

Focus on low-saturated-fat, low-cholesterol foods such as these:

- A variety of fruits and vegetables (choose 3 or more servings per day)
- A variety of grain products like bread, cereal, rice and pasta, including whole grains (choose 6 or more servings per day)
- Fat-free and low-fat milk products (2 to 4 servings per day)
- Lean meats and poultry without skin (choose up to 5 total ounces per day)
- Fatty fish (enjoy at least 2 servings baked or grilled each week)
- Beans and peas
- Nuts and seeds in limited amounts
- Unsaturated vegetable oils like canola, corn, olive, safflower and soy bean oils (but a limited amount of margarine and spreads made from them)
-
Appendix A-2 High Cholesterol

What should I limit?
- Whole milk, cream and ice cream
- Butter, egg yolks and cheese — and foods made with them
- Organ meats like liver, sweetbreads, kidney and brain
- High-fat processed meats like sausage, bologna, salami and hot dogs
- Fatty meats that aren’t trimmed
- Duck and goose meat (raised for market)
- Bakery goods made with egg yolks and saturated fats
- Saturated fats like coconut oil, palm oil and palm kernel oil
- Solid fats like shortening, partially hydrogenated margarine and lard
- Fries foods

What are some cooking tips for me?
- Use a rack to drain off fat when you broil, roast or bake.
- Don’t baste with drippings; use wine, fruit juice or marinade.
- Broil or grill instead of pan frying.
- Cut all the fat you can see off of meat before you cook it, and take all the skin off poultry pieces. (If you’re roasting a whole chicken or turkey, remove the skin after cooking.)
- Use a vegetable oil spray to brown or sauté foods.
- Serve smaller portions of higher-fat dishes, and serve bigger portions of lower-fat dishes like pasta, rice, beans and vegetables.
- Make recipes or egg dishes with egg whites or egg substitutes, not yolks.
- Instead of regular chocolate, use low-fat cottage cheese, part-skim milk mozzarella and other fat-free or low-fat choices.

How can I learn more?
- Talk to your doctor, nurse or health care professional. Or call your local American Heart Association at 1-800-242-8721, or the American Stroke Association at 1-888-478-7653.
- If you have high cholesterol, members of your family also may be at higher risk for it. It’s very important for them to make changes now to lower their risk.

Do you have questions or comments for your doctor?
- Take a few minutes to write your own questions for the next time you see your doctor. For example:

What are weight control and physical activity important?
Appendix B-1 High Blood Pressure

How Can I Reduce High Blood Pressure?

By treating high blood pressure, you can help prevent a stroke, heart attack, heart failure or kidney failure. Here are steps you can take now:

- Lose weight if you’re overweight.
- Eat a healthy diet low in saturated fat, cholesterol and salt.
- Be more physically active.
- Limit alcohol to no more than one drink per day for women or two drinks a day for men.
- Take medicine the way your doctor tells you.
- Know what your blood pressure should be and work to keep it at that level.

How can I lose weight?

If you’re overweight, you’re putting too much strain on your heart. You should talk with your health care professional about a healthy eating plan. When you lose weight, your blood pressure often goes down.

How do I limit salt?

Eating a lot of salt (sodium) adds to high blood pressure in some people. It holds excess fluid in your body and puts an added burden on your heart. Your doctor may tell you to cut down on the salt you use in cooking and not add salt to foods. He or she may also tell you to eat no salt at all.

Try to read food labels so you’ll know which foods are high in sodium. And learn to use herbs or salt substitutes instead.
Appendix B-2 High Blood Pressure

How do I limit alcohol?
Ask your doctor if you're allowed to drink alcohol and if so, how much. If you drink more than two ounces a day (about two beers, glasses of wine or mixed drinks), it may add to high blood pressure. If cutting back on alcohol is hard for you to do on your own, ask about community groups that can help.

How can I be more active?
An inactive lifestyle is a risk factor for heart disease and stroke. It also tends to add to obesity, which is a risk factor for high blood pressure. Regular exercise helps to reduce blood pressure, control weight and reduce stress. It's best to start slowly and do something you enjoy, like taking walks or riding a bicycle. Talk to your health care professional about a good plan for you.

What should I know about medicine?
There are different types of medicine your doctor may prescribe for you. Don't be discouraged if you need to take medicine from now on. Sometimes you can take smaller doses after your blood pressure is under control, but you may always need some treatment.

What's most important is that you take your medicine exactly the way your doctor tells you to. Never stop treatment on your own. If you have problems with your medicine or if you have side effects, talk to your doctor.

How can I learn more?
• Talk to your doctor, nurse or health care professional. Or call your local American Heart Association at 1-800-242-8721, or the American Stroke Association at 1-888-478-7653.
• If you have high blood pressure, members of your family also may be at higher risk for it. It's very important for them to make changes now to lower their risk.

Do you have questions or comments for your doctor?
• Take a few minutes to write your own questions for the next time you see your doctor. For example:

  Can I drink any alcohol?

  How often should my blood pressure be checked?

  American Heart Association
  Fighting Heart Disease and Stroke
  National Center
  7272 Greenville Avenue
  Dallas, Texas 75231-4596
  www.americanheart.org
Appendix C-1 Smoking

How Can I Quit Smoking?

Why should I quit smoking?

Smoking cigarettes tops the list of major risk factors of our number one killer—heart and blood vessel disease. In fact, almost one fifth of deaths from heart disease are caused by smoking. The long list of diseases and deaths due to smoking is frightening. Smoking also harms thousands of nonsmokers who are exposed to cigarette smoke, including infants and children.

If you smoke, you have good reason to worry about its effect on your health, your loved ones and others. You could become one of the more than 430,000 deaths smoking causes every year. When you quit, you reduce that risk tremendously!

Is it too late to quit?

No matter how much or how long you’ve smoked, when you quit smoking, your risk of heart disease and stroke starts to drop. In time your risk will be about the same as if you’d never smoked!

How do I quit?

**Step One**
- List your reasons to quit and read them several times a day.
- Wrap your cigarette pack with paper and rubber bands. Each time you smoke, write down the time of day, how you feel, and how important that cigarette is to you on a scale of 1 to 5.
- Rewrap the pack.

**Step Two**
- Keep reading your list of reasons and add to it if you can.
- Don’t carry matches, and keep your cigarettes out of easy reach.

**Step Three**
- Each day, try to smoke fewer cigarettes, and try not to smoke the ones that aren’t most important.
- Continue with Step Two. Set a target date to quit.
- Don’t buy a new pack until you finish the one you’re smoking.
- Change brands twice during the week, each time for a brand lower in tar and nicotine.
- Try to stop for 48 hours at a time.
Appendix C-2 Smoking

Step Four
• Quit smoking completely. Throw out all cigarettes and matches. Hide lighters and ashtrays.
• Stay busy! Go to the movies, exercise, take long walks, go bike riding.
• Avoid situations and “triggers” you relate with smoking.

What if I smoke after quitting?
It’s hard to stay a nonsmoker once you’ve had a cigarette, so do everything you can to avoid that “one.” The urge to smoke will pass. The first 2 to 5 minutes will be the toughest. If you do smoke after quitting:
• This doesn’t mean you’re a smoker again — do something now to get back on track.

What happens after I quit?
• Your senses of smell and taste come back.
• Smoker’s cough goes away.
• You will digest more normally.
• You feel alive and full of energy.
• You breathe much easier.
• It’s easier to climb stairs.

How can I learn more?
• Talk to your doctor, nurse or health care professional. Or call your local American Heart Association at 1-800-242-8721, or the American Stroke Association at 1-888-478-7653.

Do you have questions or comments for your doctor?
• Take a few minutes to write your own questions for the next time you see your doctor. For example:

When will the urge stop?

How can I keep from gaining weight?

• Find healthy substitutes for smoking. Carry sugarless gum or artificially sweetened mints. Munch carrots or celery sticks. Try doing crafts or other things with your hands.
• Do deep breathing exercises when you get the urge.

• Don’t punish or blame yourself — tell yourself you’re still a nonsmoker.
• Think about why you smoked and decide what to do the next time it comes up.
• Sign a contract to stay a nonsmoker.

• You’re free from the mess, smell and burns in clothing.
• You feel frus of “needing” cigarettes.
• You’ll live longer and have less chance of heart disease, stroke, lung disease and cancer.

• If you have heart disease or have had a stroke, members of your family also may bu at higher risk. It’s very important for them to make changes now to lower their risk.
Appendix D-1 Physical Activity

Why Should I Be Physically Active?

If your doctor has advised you to begin an activity program, you should follow that advice. People who don’t get enough physical activity are much more likely to develop health problems.

Regular, moderate physical activity can lower your risk of:
- Heart disease and heart attack
- High blood pressure
- High total cholesterol and low HDL (good) cholesterol
- Overweight or obesity
- Diabetes
- Stroke

What else can physical activity do for me?

Physical activity also offers these benefits:
- Strengthens your heart, lungs, bones, and muscles.
- Gives you more energy and strength.
- Helps control your weight and blood pressure.
- Helps you handle stress.
- Helps you sleep better.
- Helps you look good.
- Helps you feel upbeat.

What kind of activities should I do?

You don’t have to be an athlete to lower your risk of heart disease and stroke! If done on most or all days, you can benefit from moderate activities like these:
- Pleasure walking
- Gardening and yard work
- Moderate to heavy housework
- Pleasure dancing and home exercise

More vigorous exercise can help improve the fitness of your heart and lungs. Start slowly, and build up as your heart gets stronger. First, discuss exercise with your doctor or nurse. Then try one or more of these:
- Brisk walking, hiking or jogging
- Stair climbing
- Bicycling, swimming or rowing
- Aerobic dancing or cross-country skiing
Appendix D-2 Physical Activity

How often should I exercise?
- Work up to 30 to 60 minutes of activity.
- Make sure it’s regular — most or all days of the week.

What else can I do?
- Look for ways to add more activity to your daily routines. Making small changes in your lifestyle can make a big overall difference in your health. Here are some examples:
  - Take a walk for 10 or 15 minutes during your lunch break.
  - Take stairs instead of escalators and elevators.
  - Park farther from the store and walk through the parking lot.

How can I learn more?
- Talk to your doctor, nurse or health care professional. Or call your American Heart Association at 1-800-242-8721, or the American Stroke Association at 1-888-478-7653.
- If you have heart disease or have had a stroke, members of your family also may be at higher risk. It’s very important for them to make changes now to lower their risk.

Do you have questions or comments for your doctor?
- Take a few minutes to write your own questions for the next time you see your doctor. For example:

  What’s the best type of exercise for me?

  How much should I exercise?
Appendix E-1 Stress

How Can I Manage Stress?

You can have a healthier heart when you make changes in your lifestyle. Managing your emotions better may help, because some people respond to certain situations in ways that can cause health problems for them. For instance, someone feeling pressured by a difficult situation might start smoking or smoke more, overeat and become overweight. Finding more satisfactory ways to respond to pressure will help protect your health.

What is stress?

Stress is your body’s response to change. It’s a very individual thing. A situation that one person finds stressful may not bother someone else. For example, one person may become tense when driving; another person may find driving a source of relaxation and joy. Something that causes fear in some people, such as rock climbing, may be fun for others. There’s no way to say that one thing is “bad” or “stressful” because everyone’s different.

Not all stress is bad, either. Speaking to a group or watching a close football game can be stressful, but they can be fun, too. Life would be dull without some stress. The key is to manage stress properly, because unhealthy responses to it may lead to health problems in some people.

How does stress make you feel?

- It can make you feel angry, afraid, excited or helpless.
- It can make it hard to sleep.
- It can give you aches in your head, neck, jaw and back.

- It can lead to habits like smoking, drinking, overeating or drug abuse.
- You may not even feel it at all, even though your body suffers from it.
Appendix E-2 Stress

How can I cope with it?

Outside events (like problems with your boss, preparing to move or worrying about a child's wedding) can be upsetting. But remember that it's not the outside force, but how you react to it inside that's important. You can't control all the outside events in your life, but you can change how you handle them emotionally and psychologically. Here are some good ways to cope:

- Take 15 to 20 minutes a day to sit quietly, breathe deeply, and think of a peaceful picture.
- Try to learn to accept things you can't change. You don't have to solve all of life's problems. Take out your troubles and look for the good instead of the bad in situations.
- Engage in physical activity regularly. Do what you enjoy — walk, swim, ride a bike or jog to get your big muscles going. Letting go of the tension in your body will help you feel a lot better.
- Limit alcohol, and don't smoke.

How can I live a more relaxed life?

- Think ahead about what may upset you. Some things you can avoid. For example, spend less time with people who bother you or avoid driving in rush-hour traffic.
- Think about problems and try to come up with good solutions. You could talk to your boss about difficulties at work, talk with your neighbor if the dog next door bothers you, or get help when you have too much to do.
- Change how you respond to difficult situations. Be positive, not negative.
- Learn to say “no.” Don’t promise too much. Give yourself enough time to get things done.

How can I learn more?

- Talk to your doctor, nurse or health care professional. Or call your American Heart Association at 1-800-242-8721, or the American Stroke Association at 1-888-468-7663.
- If you have heart disease or have had a stroke, members of your family also may be at higher risk. It's very important for them to make changes now to lower their risk.

Do you have questions or comments for your doctor?

- Take a few minutes to write your own questions for the next time you see your doctor. For example:

  How can family and friends help?
Appendix F-1 Weight Loss

Why Should I Lose Weight?

More than 106 million Americans are overweight. Of those, more than 44 million are considered obese. People who are overweight or obese are more likely to develop heart disease and stroke, even if they have no other risk factors.

Obesity is unhealthy because excess weight puts more strain on your heart. It can raise blood pressure and hinder cholesterol and can lead to diabetes. Losing weight is one of the best ways to reduce your risk of heart problems and other diseases.

How can I lose weight?

It's easy to start a diet. Staying on one is harder! First, you should prepare yourself by setting goals, thinking ahead to roadblocks along the way, and deciding how to deal with problems.

It's a good idea to see a nutritionist or registered dietitian about an eating plan that's right for you. It's never wise to follow fad diets, go without eating, or try to lose weight too fast. You didn't become overweight overnight. The most successful dieters know they must make changes over the long term and not get discouraged by setbacks.

- Think about your eating habits. Do you eat out of habit instead of hunger? If you find yourself automatically snacking in front of the television every night, it may be helpful to pick a certain spot in the house and not let yourself eat anywhere else.
- Decide how to handle temptation. When you're offered high-fat foods, turn them down nicely, but firmly. Try to dine out at places where there are low-fat, low-calorie foods to choose from.
- Plan ahead. If a bad mood, stress or boredom makes you want to binge, decide in advance what action to take. You could take up a new hobby, go for a walk, call a friend or read a book. It could help to make a list of healthy things to do when you get food cravings.
- Be realistic and expect setbacks. If you go off your diet, don't quit and don't get mad at yourself. Just get back on track.
Appendix F-2 Weight Loss

How should I change my eating habits?
- Eat slowly, take smaller portions, and avoid "seconds."
- Eat a few light meals each day instead of one main meal. Don't skip meals.
- Choose a variety of healthy foods like fruits, vegetables, cereals, pasta, dried peas and beans, low-fat or fat-free dairy products, lean meat, fish and skinless poultry.
- Cook foods in ways that help remove fat, like baking, boiling, braising, grilling, roasting or stewing. Don't fry foods in oil.
- Read food labels and avoid foods that are high in sugar, saturated fat and calories. Avoid pastries, candy bars, pies and cakes.
- Drink lots of water. Limit alcohol and other high-calorie drinks.

How can exercise help?
Exercise is as important as your diet in helping you lose weight! And it's good for your heart, lungs, bones and muscles. Regular physical activity helps lower your risk of heart attacks, stroke, high blood pressure and other health problems. Ask your doctor or health professional for an exercise plan that's right for you.

How can I learn more?
- Talk to your doctor, nurse or health care professional. Or call your American Heart Association at 1-800-242-8722, or the American Stroke Association at 1-888-4STROKE.
- If you have heart disease or have had a stroke, members of your family also may be at higher risk. It's very important for them to make changes now to lower their risk.

Do you have questions or comments for your doctor?
- Take a few minutes to write your own questions for the next time you see your doctor.
- For example:

  How much weight should I lose?

  What type of exercise is best for me?
REFERENCES


