Sinclair Community College, Division of Allied Health Technologies

Health Promotion for Community Health Workers – Cardiovascular disease, stroke, and cancer

Class #2 Overview of Heart Disease and Stroke

(date)

Course Objectives:
Describe a basic understanding of how the heart and blood vessels work.

Class/Learning Objectives: By the end of this session, students will be able to:

1. Define heart disease and stroke
2. Explain what heart disease and stroke have in common
3. Define risk factors
4. Explain how the heart works
5. Explain the role of blood vessels in heart disease and stroke

Participants:
Instructor(s)
Students

Materials/Resources Needed:
Flipchart, markers, tape, blackboard, chalk and eraser

Handouts:
Handout 2-1 The Heart
Handout 2-2 How the Heart Works
Handout 2-3 The Arteries

Class Outline

I. Overview
II. Lesson
    A. Introduction to heart disease and stroke prevention
    B. What is a risk factor?
    C. Heart disease and stroke facts
    D. How the heart works
    E. The brain
    F. What do blood vessels have to do with heart disease and stroke?
    G. How is blood flow interrupted?
    H. What can the Community Health Worker do to help prevent heart disease and stroke?
III. Summary

Plan for the Class:

I. Overview

A. Instructor gives overview of heart disease and stroke:
Heart disease is any disease or condition that affects or damages the heart or blood vessels. Sometimes the word **cardiovascular** is used to describe conditions and diseases that affect the heart.
Stroke is also sometimes called a brain attack. A stroke happens when a blood vessel to the brain becomes blocked or bursts open and blood flow can no longer reach the brain. This causes brain damage, and we'll talk more about how that happens later. The medical term used to describe a stroke is **cerebrovascular disease**. **Cerebrovascular** is a term that includes stroke and diseases involving the blood vessels that affect the brain.
Cancer is a disease in which cells divide and grow uncontrollably and can invade other tissues. There are many types of cancer, but in this class we will talk primarily about breast, cervical, prostate, colorectal, and skin cancer.

B. *Activity: Instructor writes **cardiovascula**r and **cerebrovascular** on the flip chart. Instructor explains that "cardio" means related to the heart and "cerebro" means related to the brain. "Vascular" means related to blood vessels. Ask the students to identify what the two diseases have in common: problems with the blood vessels.*

II. Lesson

A. Introduction to heart disease and stroke prevention:
There are many types of heart disease and diseases of the blood vessels. In this course, we will learn about the most common and serious diseases, what causes them and what can be done to prevent them.

We will also talk about what people who have heart and blood vessel disease can do to prevent more serious health problems from developing.

In this course you will learn about heart disease, heart failure, and the top two killers of people who suffer diseases of the heart or blood vessels: heart attack and stroke; and you will learn about three conditions that can damage the heart and blood vessels and cause heart disease and stroke: high blood pressure, high cholesterol, and diabetes.

That makes high blood pressure, high cholesterol, and diabetes three of the most important risk factors for heart disease and

stroke. Tobacco use is another very important risk factor for these diseases.

B. What is a risk factor?

Risk factor is a term you'll hear again and again in this course. A risk factor is a behavior or a condition that makes a person more likely to have heart disease or to have a stroke or heart attack.

One reason to talk about heart disease and stroke together is that heart disease and stroke have many of the same risk factors. Reducing your risk for heart attack will also reduce your risk for stroke. Preventing people from developing a disease in the first place is sometimes called **primary prevention**.

We will also talk about how people who are at risk for heart disease and stroke can improve their health by taking their medication, talking to their doctor, knowing the warning signs for heart attack and stroke, and knowing what to do in case of an emergency. Doing something to prevent a disease from getting worse or causing additional problems is called **secondary prevention**.

Changing unhealthy behaviors is very important for those who have the risk factors of high blood pressure, high blood cholesterol, diabetes, and those who have heart disease or have had a heart attack or stroke.

The good news is that people can prevent or lower their risk for heart disease and stroke by choosing health lifestyle habits and behaviors such as eating a healthy diet, becoming more physically active, keeping a healthy body weight, and by not using tobacco.

C. Heart disease and stoke facts

- Heart disease is the number one cause of death in the United States
- Stroke is the 3rd leading cause of death
- Together, heart disease and stroke are responsible for more than 40% of all deaths in America (almost half of all deaths)
- Every 33 seconds someone in America dies of heart disease or stroke (almost 2 people every minute)
- Heart disease and stroke are the leading cause of permanent disability among working-age adults.
- Almost 6 million people are admitted to hospitals each year due to heart disease and stroke.
- The leading cause of hospitalizations among older adults is heart failure
- Almost 61 million Americans (almost one-fourth of all Americans) have a heart or stroke related disease

- Heart disease and stroke are often thought of as affecting men and old people, but heart disease is the leading cause of death for women, and a major killer of people in the prime of life

These facts are why it is so important that men and women, young and old, understand what causes heart disease and stroke and what can be done to prevent them. Usually women are more afraid of cancer than heart disease, but a women is 6 times more likely to die from heart disease than from cancer.

Heart disease rarely just happens. In most cases, it's a process that starts in childhood. But this process can be prevented, stopped, or at the very least slowed down.

D. How the Heart Works

Distribute handout 2-1- The Heart

The heart is a powerful muscle that pumps blood through the blood vessels to every part of the body. It's about the size of a fist and is beneath the breastbone almost in the middle of the chest. About one third of the heart is on the right side of the body and about two-thirds is on the left.

Distribute handout 2-2- How the Heart Works

The right side of the heart collects blood that has already traveled through the body and has circulated most of its oxygen and nutrients and sends it to the lungs, where it gets a fresh supply of oxygen.

The left side of the heart collects blood that is rich in oxygen from the lungs and sends it circulating through the body where, once again, it supplies the body's cells and organs with oxygen and nutrients. Then the blood returns to the right side of the heart, where it will be pumped to the lungs to replace the oxygen and nutrients.

The heart can never stop pumping blood for more than a few minutes. If it does, food and oxygen carried by the blood can't get to other organs in the body. The organs will be damaged by the lack of food and oxygen and the person will die unless the pumping action is restored quickly.

E. The Brain

The brain controls many of the body's functions. If the brain is damaged, it may become unable to send messages to the muscles and leave a person unable to walk, talk or to use his/her hands. Damage to the brain can also affect mental functions such as memory, emotions, and learning. Because the brain controls vital

functions such as breathing, a person can die if the brain is seriously injured.

The brain, like the heart, works constantly, even during sleep, to keep all organs working. All this work requires a lot of nutrients (or food) and oxygen.

F. What do blood vessels have to do with heart disease and stroke?

Earlier we talked about how heart disease and stroke have in common diseases of the blood vessels. The blood vessels and the heart work together to deliver blood to every cell in the body. Blood contains nutrients that every cell in your body needs to stay healthy and to live. Every cell in every organ in the body needs food and oxygen to live.

The nutrients and oxygen are carried to the cells and organs in blood that moves through blood vessels to all parts of the body. If the blood carrying nutrients and oxygen to the cells is blocked or cut off, the cells begin to die, causing damage to the organ.

In addition to carrying food and oxygen to all of the organs and tissues, blood picks up and takes away waste produced by the body's cells.

G. How is blood flow interrupted?

Handout 2-3 – Arteries and Plaque

The two most common reasons blood flow is interrupted are:

- Problems in the blood vessels
- Problems with the heart's ability to pump blood

Blood is carried to the heart muscle itself by blood vessels know as coronary arteries, because they circle around the heart muscle in the shape of a corona, or crown.

Over time, usually starting in childhood, deposits of fats, cholesterol, cell waste products, calcium and other substances build up inside the inner lining of the arteries. This buildup is called plaque. It usually affects large and medium-sized arteries.

As the passage through the artery becomes smaller because of this build up, blood flow decreases, gradually reducing the oxygen supply. The plaque may also rupture, or break, and cause a clot to form suddenly, cutting off oxygen supply all at once.

The build up of plaque in the arteries is a disease known as **atherosclerosis**, sometimes called hardening of the arteries. The plaque can clog the artery gradually, cause a clot to form suddenly,

or pieces of plaque or a blood clot can break off and travel through the blood stream to another part of the body and block a blood vessel. If a plaque or blood clot blocks a blood vessel that feeds the heart, it can cause a heart attack. If it blocks a blood vessel that feeds the brain, it can cause a stroke.

When the arteries in a person's heart have become hardened and narrowed by atherosclerosis, doctors often refer to this as coronary artery disease. Coronary artery disease is the leading cause of heart attacks in the United States today. It is also the most common type of heart disease. It is the single largest killer of men and women in America.

In 50% of men and 63% of women who die suddenly from coronary artery disease, there were no previous symptoms. However, many people have episodes of chest pain or pressure without yet experiencing a heart attack. This is due to the heart muscle not receiving enough blood. A feeling of significant chest pain or pressure is a warning sign that a person should see a doctor as soon as possible.

H. What can the Community Health Worker do to help prevent heart disease and stroke?

Activity: Instructor asks the class to brainstorm ways they can help prevent heart disease and stroke in the community. Write ideas on blackboard or newsprint. Use information below to supplement or reinforce their ideas.

As Community Health Workers, you have a very important role. You will become a role model to your families and the community. You can help people in your community choose health life style changes for heart and stroke related problems.

You can make a difference in your community by teaching and encouraging people to take better care of themselves. You can help them understand how to better control and manage their high blood pressure, high blood cholesterol, diabetes, and heart conditions.

You can be the bridge between community members and their health care providers by helping people understand that they are partners in their own health care and by helping them get the treatment and services they need. When you practice what you learn in this course you will become a role model for your community.

III. Summary

Heart disease is the number one cause of death in America when all ages are considered.

Stroke is the third leading cause of death.

Most deaths caused by heart disease can be prevented.

Community health workers can play an important role in improving heart health and preventing heart attack and stroke in your community and we will be talking about this more later.

IV. Preview of next class

High blood pressure, what it is, how it is prevented, treated, and controlled.

Resources:

Centers for Disease Control and Prevention (CDC) web sites:

- Cardiovascular Health http://www.cdc.gov/cvh/indes.htm
- Diabetes http://www.cdc.gov/diabetes/index.htm
- Nutrition and Physical Activity http://www.cdc.gov/diabetes/index.htm
- Tobacco http://www.cdc.gov/healthyyouth/index.htm
- WISEWOMAN (Well-integrated Screening and Evaluation for Women Across the Nation) http://www.cdc.gov/healthyyouth/index.htm
- Adolescent and School Health http://www.cdc.gov/healthyyouth/index.htm

American Heart Association http://www.americanheart.org/

American Stroke Association http://strokeassociation.org/

National Heart, Lung, and Blood Institute http://www.nhlbi.nih.gov

National Institute of Neurological Disorders and Stroke http://www.ninds.nih.gov.disorders/stroke/stroke.htm