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Lesson Plan #1

Title: Prevent Disease with Healthy Plates

Learning Goals:

We will be explaining the purpose of healthy eating in relation to long-term chronic disease prevention (atherosclerosis, cardiovascular disease, and diabetes). In our presentation, we will discuss common chronic diseases so that participants can understand risk factors, how these diseases develop over time, and how diet can prevent these diseases.

Learning Objectives:

By the end of the lecture:

1. Cognitive: 90% of participants will be able to describe 2 ways to prevent chronic diseases after the lecture.
2. Affective: 90% of participants will feel that healthy behaviors are important to prevent future chronic diseases by the show of hands.
3. Behavioral: 90% of participants will be able to prepare bell peppers in 1 healthy dish by the end of the food demo.

Time: 1 hour of lecturing and 30 mins of food demo.

Materials: PowerPoint; Chopped red, green, and yellow bell pepper (2 for each kind); sampling cups; one food item from each of the DASH diet food groups (bread, apple, etc), as well as measuring cups and bowls.

Content:

Intro:

We would like to relate disease prevention with the previous lectures that this class has had. They have been learning how to be healthy, but *why* is this important? We also want to emphasize that we are not talking about disease to scare participants, but more so to help them understand what these diseases really are and how living a healthy lifestyle can help in prevention.

Atherosclerosis: I will be starting from the basics with atherosclerosis, asking participants if they have heard of this term before and introducing it as the root of many future cardiovascular diseases. I will explain that atherosclerosis develops over time with plaque buildup in the arteries. This plaque can be problematic in leading to other types of cardiovascular disease over time, such as coronary artery disease, peripheral artery disease, carotid artery disease, and chronic kidney disease. I will then delve into the area of risk factors for atherosclerosis, asking the audience to define the term "risk factors" first. The risk factors I will discuss are divided into controllable and uncontrollable. I will have participants brainstorm what factors are controllable and

uncontrollable. Controllable risk factors for atherosclerosis prevention include: physical activity, healthy diet, and non-smoking. Uncontrollable risk factors mainly falls into family history. In concluding this section, I will ask how the audience is feeling and if there are any questions.

HTN/Heart Disease: In this section, I will first ask participants if they have heard of hypertension, and to define the term if they have. I will be defining hypertension and explaining the factors that influence blood pressure, which are blood volume and artery wall constriction. Next I will discuss the impact high blood pressure has on our arteries, going from microscopic muscle tearing to plaque buildup and how that may lead to stroke and other problems taught in the previous slides. I will use my hands to demonstrate visually this process. Then I will tie that into how this impacts different organs of the body such as heart, brain, eyes, and kidneys. Lastly, I will discuss the risk factors of high blood pressure then focus on the impact salt intake has on blood pressure since it is an important factor that can be controlled. I will explain how salt impacts blood pressure and the suggested salt intake per day. In concluding this section, I will ask how the audience is feeling and if there are any questions.

Diabetes: I will start by asking the participants if they know about anyone who have diabetes in order to get a screen of how many people are familiar with the disease. I will then ask them *how much* they know about diabetes if they are familiar with it. Based on their their knowledge about type II diabetes, I will explain the basics of type II diabetes, which includes it being a disease where people can have trouble transporting sugar from their blood into the rest of their body, and thus have high blood sugar. I will then talk about the future consequences of having type II diabetes, which includes damages in nerves, eyes, and kidneys. I will then ask the participants if they can name some causes of type II diabetes. Based on their responses, I will summarize the risk factors and ask them to come up with ideas to prevent type II diabetes through either diet or lifestyle changes after learning about the risk factors. I will emphasize the important role of healthy eating and healthy lifestyle in the prevention for type II diabetes. I will also give examples such as “even 5% weight loss can greatly decrease the chance of developing diabetes” in order to lower the participant’s barriers of carrying out these prevention strategies. To conclude this section, I will ask how the audience is feeling and if there are any questions.

What to Eat Instead/Summary

I will review atherosclerosis, hypertension, and type II diabetes . First, I will ask the audience some questions to check their understanding about these diseases. Then, I will repeat the conditions and risk factors of those diseases one more time in simple words to reinforce their knowledge. I will mention that obesity is the risk factor for these three diseases, and fortunately, it is a modifiable risk factor. By making healthy changes in our diets, we can reduce the risk or delay the development of diseases. I will check if they have any questions or comments before moving on to the DASH diet.

Next, I will introduce the DASH diet, and mention that it is a diet that has been supported by strong research. I will talk about the fact that research has shown that the DASH diet can reduce blood pressure naturally, and that it can protect people from developing heart diseases, diabetes, and some

cancers. I will educate the participants about the food groups included in the DASH diet, as well as the recommended serving size for each of the food group. To complement the powerpoint slides, I will show and let the audience pass around the sample food items from each of the DASH diet food group, as well as the measuring spoons and bowls to illustrate serving sizes in a visual way. After educating the audience about the DASH diet, I will ask the audience to discuss in small groups about how their current diet compares to the DASH recommendations. I will also ask people to share their thoughts to the rest of the class. Sharing and comparing their diets to the standards and help the audience identify the pros and cons in their diets, and also transition them to the mini case. I will also give the audience chances to ask additional questions at the end of this section.

Post-Lecture Mini Case: How would you improve this meal?

Breakfast: 1 cup of orange juice; one slice of chocolate cake

Lunch: 3 slices of pepperoni pizza; 1 cup of coke

Dinner: 1 hot dog; 1 medium fries; 1 cup of ice cream

We will be having participants tell us their thoughts on what improvements could be made to this diet. Examples of improvements could be: substituting coke for water (sugar-sweetened beverages), including fresh fruits and vegetables somewhere, removing high fat foods, making sure that whole grains are incorporated where there is bread, etc.

Vegetable of the Week:

This activity is to get participants excited about vegetables. We will be featuring bell peppers this week, discussing their nutrient content and how different colored bell peppers have different nutrient levels. We will then allow participants to taste the differences between red, green, and yellow bell peppers, and then brainstorm amongst each other what recipes they could see themselves making with it. We will then have each group share their top idea with the class.

Visuals & Supplies: We will be using powerpoint, raw bell pepper, and examples of real food serving sizes for our sampling demo. Powerpoint will be printed and handed out to the participants.

Teaching Methods:

The class will incorporate lecturing, small group discussions, and lots of opportunities for the students to raise their hands and share their thoughts to the class after each new topic introduction. The class will also include a food demo at the end to feature the nutritional profile and cooking tips of three types of bell pepper. We will also include a practice case near the end so that participants can get a chance to test their knowledge of what they have learned.

Learning and behavior change theory incorporated into the lesson plan components:

Lesson plan component:	Based on this model or construct
Ask the participants to share their knowledge about diabete to the class	Assessing prior knowledge (trans theoretic model, assessing stage of change); Client centered approach
Letting the participants taste the three types of bell pepper in their raw form	Incorporate manipulatives; Keep students engaged using an activity;
Ask the participants to share bell pepper recipes that they know about	Lower the perceived barrier around cooking healthy food (health belief model), discussion to help brainstorm ideas
Ask students to name 3 foods that can help in diabetes prevention; ask students to share their feelings about the cooking demo	Verbalization help students remember concepts
Using a mini case study to test the student's ability to identify health and unhealthy food options	Applying what they just learned in a "real" case solving situation helps reinforce memory (social learning theory, learning after what we presented to them as healthy food or unhealthy food)

Formative and Summative Evaluation:

Formative evaluation:

1. Assessing student's prior knowledge by asking how much do they know about the topic/section (eg. HTN, atherosclerosis, diabetes) before lecturing on each section.
2. Constantly check in to see if students are understanding the concepts being taught by asking: is everyone still with me? Do you have any questions at this point?
3. Encouraging the students to share their thoughts and comments throughout the lecture, such as in the DASH diet comparison to their own diet. This can not only assess the student's understanding of the on going class, but also clear up any confusion right away

Summative evaluation:

1. Having the "Mini Case Study" section at the end can help evaluate and reinforce the student's understanding about healthy and unhealthy food options.

2. We will assess the participant's attitudes (by the show of hands) at the end of the session by asking them if they believe healthy eating and lifestyle changes are important to prevent diseases
3. We will also ask each group to present their bell pepper recipe so each person comes out of the session knowing 1 recipe to use bell peppers in.