The Healthy Diabetes Plate Website Teaches Meal Planning Skills

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Abstract

Introduction: The Healthy Diabetes Plate (HDP), a four-lesson peer-reviewed curriculum for individuals with diabetes, helped 85-99% of subjects plan meals correctly and significantly increased their fruit and vegetable intake. It has been used on a limited basis.

Objectives: Convert the HDP curriculum to web pages that contain text, graphics, video clips, and are interactive.

Methods: A three-step process was used to design the website: (1) Conduct a needs assessment; (2) Collaborate with an interdisciplinary team (University faculty members, web designers, editor, videographer, food photographer, dietitians, and students); and (3) Evaluate the Healthy Diabetes Plate website design.

Results: The HDP website (www.extension.uidaho.edu/diabetesplate) is composed of 12 web pages that include: (1) home page, (2) five food groups, (3) planning meals, (4) tips and tricks, and (5) video clips. It uses a visual format that includes 84 photos and video clips which illustrate types of foods to eat, portion sizes, shopping tips and cooking hints.

Conclusions: This website makes the HDP curriculum available to a global audience.

Keywords: Diabetes; Website; Meal planning

Introduction

The latest estimates from the International Diabetes Federation on global incidence of diabetes are staggering. In 2012 more than 371 million people had diabetes and 4.8 million people died from diabetes [1]. Three components of diabetes self-management include following a diabetes diet plan, being physically active, and taking medication, if prescribed [2]. Individuals with diabetes should complete Diabetes Self-Management Education (DSME) to keep their diabetes under control and prevent complications, such as retinopathy, neuropathy, and nephropathy [3].

For diabetes education to be effective, it must be accessible and understandable. Individuals are accessing the internet to get their information about diabetes. The Pew Internet Research group conducted a Health Online study in 2012 and reported that 72% of internet users looked online for health information of one kind or another within the past year [4].

Understandability of diabetes meal planning is a problem since these individuals find this to be the most difficult part of managing their diabetes [5]. At the University of Idaho, we developed and tested a four-lesson diabetes meal planning curriculum called The Healthy Diabetes Plate. We found that 85-99% of participants were able to plan diabetes meals correctly and significantly increased their fruit and vegetable intake [6]. The curriculum was based on the Plate Method, a visual way to teach individuals with diabetes how to plan their meals [7]. Therefore, the purpose of our study was to make The Healthy Diabetes Plate curriculum globally accessible by converting the lessons to web pages and focusing on a visual format.

Materials and Methods

A three step process was used to develop the Healthy Diabetes Plate website. The first step was to conduct a needs assessment [8] to determine the type and amount of information that should be included at the website. We met with two groups of individuals, those who had diabetes (n=20) and had attended Healthy Diabetes Plate classes and those who taught the Healthy Diabetes Plate classes (n=8) on diabetes.

The second step was to work with an interdisciplinary team who would design the website (web designers), provide graphics (food photographer, videographer), and an editor so the resulting website would meet the goals of being visually appealing, comprehensible, have utility, efficacy, and navigability [10].

The third step was to have individuals who provided input into the needs assessment evaluate the web pages.

Results

The needs assessment conducted with diabetes educators and those with diabetes revealed that both groups wanted a web site that focused on the types and amounts of food that could be eaten, help with portion sizes, and how to plan their meals.

The resulting Healthy Diabetes Plate website www.extension.uidaho.edu/diabetesplate was released in 2009 and has been updated several times and was most recently translated into Spanish in 2012. It contains five main pages, five video clips, and 84 photographs that illustrate foods from the five food groups and portion sizes:

Home page

Individuals are given an overview of the site and research results that describe the development and effectiveness of the Healthy Diabetes Plate.
Plate. They learn that The Healthy Diabetes Plate is composed of five food groups (Figure 1) and how to visually create healthy and tasty breakfasts, lunches, and dinners. They don’t need to measure or weigh foods or buy special food products. All they need is a 9-inch plate for their vegetables, starches, and protein foods, plus a small bowl and/or glass for their fruit and dairy products.

Five food groups

There is a separate page for each food group (1) Non-Starchy Vegetables, (2) Starch (focus on Whole Grains), (3) Lean Protein, (4) Fruit, and (5) Milk/Yogurt. The information at each food group page includes: which foods are included, a visual approach to serving sizes (Figure 2), nutritional and health benefits, and cooking or shopping tips.

Supermarket tour

Five video clips were developed, one for each food group. They provide tips on making wise food selections in the grocery store.

Interactive meal planning

The Main Meal Planning page provides an explanation of how to plan meals using food pictures. There is an interactive Breakfast meal planning page and an interactive Lunch/Dinner meal planning page (Figure 3) and sample meals (Figure 4).

Tips and tricks

They receive suggestions on how to eat out, select healthy fats, make food flavorful (using herbs and spices), and use sugar substitutes.

There were 20 individuals with diabetes or their family members and 8 diabetes educators that evaluated the Healthy Diabetes Plate website. Both groups thought the food photographs helped illustrate which foods they should eat. In addition, they thought the portion size graphics and meal planning pages to be especially helpful.

Discussion

The incidence of diabetes is increasing worldwide and there is a shortage of diabetes educators who can teach individuals how to manage their diabetes [1]. Many individuals with diabetes are turning to the internet as their major source of information [4]. A diabetes Google search will yield 71.4 million hits. This makes it difficult to separate fact from fiction. The Healthy Diabetes Plate website fills this need for factual information since it is based on a peer-reviewed [6] curriculum that yielded effective results [7].

The Healthy Diabetes Plate website was designed to promote healthy eating and teach meal planning skills and meets education recommendations of two diabetes organizations. The first organization, the American Association of Diabetes Educators [11], has identified healthy eating as an important behavior in diabetes self-management. The Healthy Diabetes Plate website food groups focus on foods that are heart healthy and are low-fat, low-sodium, low sugar and high fiber. The second organization, the American Diabetes Association, recommends
that diabetes education be skill based so individuals can make informed decisions [12]. The Healthy Diabetes Plate website teaches individuals how to plan breakfast, lunch, dinner meals, and provides shopping and cooking tips.

Even though the Healthy Diabetes Plate website was developed for individuals in the United States, it could be easily adapted to other countries, using foods from different cultures. We encourage other countries to view and adapt this information as a way to teach and/or learn about diabetes meal planning.

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