

Course Evaluation of an Online Elective in Nutrition for Fourth-Year Medical Students

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INTRODUCTION

In a time where online education is more important than ever and nutritional guidance is at the forefront of lifestyle management, there is a stress to educate students on nutritional guidelines while lending practical, hands-on instruction. Currently medical students report receiving inadequate amounts of nutritional guidance during medical school.

In order to address this, faculty at WVU SoM devised a 2-week online elective entitled, "Nutrition Solutions for Common Chronic Medical Diseases," to educate fourth year medical students on nutrition and its instrumental value in preventative medicine.

This course utilized and expanded on Health Meets Food (HmF) which offers a unique online nutrition curriculum that teaches medical students practical knowledge in nutrition that can be applied to patient care. In addition Dr. Mientus and Dr. Humerick created two new modules and 2-3 reflection questions/clinical scenarios associated with each of the 32 HmF module for students to consider what they learned from the module and how they would apply the knowledge gained to patient care.

OBJECTIVE

The aim of this educational endeavor is to evaluate the course learning objectives, organization, materials and instructors with the intention to use this data to better shape future elective nutrition courses.

COURSE DESIGN

- Fourth year medical students voluntarily enrolled in this 2-week online course
- Each student completed the following:
 - 3 required modules and the reflection questions associated with each module:
 - Intro to Culinary Medicine (HmF module)
 - Food Insecurity (New WVU Module)
 - Interpreting the Nutrition Literature (New WVU Module)
 - An additional 6 HmF modules of their choice and the 2-3 reflection questions associated with each module.
 - 3 recipes from HmF site associated with modules they completed (they then post pictures of the recipes on the discussion board on course site)
- Voluntary course evaluations were distributed electronically to all fourth-year medical students upon completion of the course.

STUDENT RECIPES



Roasted Broccoli, Tomato, & Cheddar Frittata
Systemic Approaches to Obesity Module



En Papillote Halibut
Anti Inflammatory Diet Module



Asian Peanut Chicken with Noodles
Sodium, Potassium, & HTN Module



Homemade Chicken Stock
"I roasted a whole chicken, used the bones and vegetable scraps that I keep in my freezer to make the stock. I simmered on the stove top for 4-5 hours, strained the stock, allowed to cook slightly, then sealed in my vacuum sealer. I laid it flat in the freezer, and plan to use this weekend for a stew! I find that stock is an easy way to use up any veggie scraps I have leftover, and a great way to utilize the whole chicken, reducing my waste."



Avocado Egg Salad Sandwich!
HECK YES. I love egg salad. I love avocado. I love substituting avocado for mayo. Delicious for any salad (chicken, tuna, egg, potato, etc.) Recipe called for green onion, but I used red because I had it on hand. Also features spinach, salt, pepper, lemon juice, and served on whole wheat round. Sriracha to taste.



Quick Tomato Sauce
"I substituted fresh tomatoes for canned ones, and did not add onion because of an allergy. I opted to roast the tomatoes in the oven instead of sautéing to develop more flavor. Very tasty!"

EXAMPLE STUDENT REFLECTION RESPONSE

A 26 y.o. female with anxiety and chronic abdominal bloating and diarrhea comes to clinic. You diagnose her with IBS. In addition to counseling and starting an SSRI for anxiety, you recommend dietary changes. Please explain how you would advise the patient on those dietary changes?

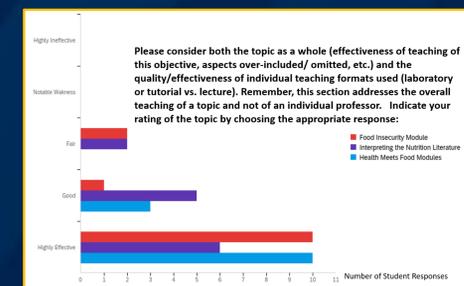
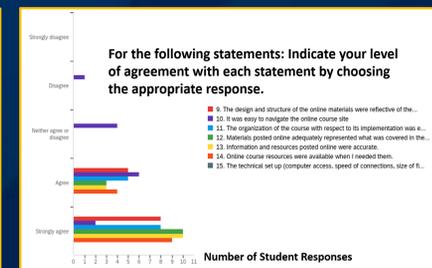
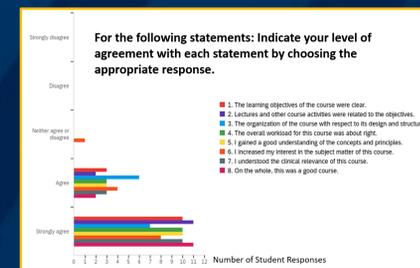
"In addition to the SSRI I'm prescribing for you, most patients can achieve further reduction in their IBS symptoms with dietary modifications. Every patient is different however, so foods that trigger your symptoms may not be the same as the triggers for another person with IBS. The best way to figure out your triggers is to keep a detailed food and symptom diary. Each day, write down everything that you've eaten, as well as any symptoms you are having, such as abdominal pain or diarrhea. You can then determine which foods you should try eliminating from your diet to see if your symptoms improve. You can also add new foods to your diet, to see if they aggravate your symptoms."

"In terms of trigger foods, I can give you some ideas to start with. 50% of IBS patients find that food types called FODMAPs tend to aggravate their symptoms, and they feel better when they reduce or eliminate these foods from their diets. FODMAP stands for Fermentable Oligo- Di-Monosaccharides and Polyols. These foods are fermented by the bacteria in your intestines, and can cause water to be secreted into the small and large intestine, along with gas production that makes your symptoms worse. Examples of FODMAPs include grains such as wheat and rye, vegetables like onion, and garlic; cruciferous vegetables including broccoli, Brussel sprouts and cauliflower, and legumes. Fruits to avoid include apples, blackberries, peaches, and plums; certain forms of dairy such as butter, cow's milk, soft cheeses, and ice cream, and foods containing honey or high-fructose corn syrup. Other FODMAPs include sugar alcohols, for example mannitol, xylitol, sorbitol. These are used in many foods to reduce sugar content, such as in diabetic desserts. Sugarless gums and mints also contains sugar alcohols, mainly mannitol and sorbitol. You will need to carefully read food labels to look for these.

Unfortunately, many FODMAPs are otherwise very healthy foods such as fruits, vegetables and legumes, so you will need to make sure you're still eating a healthy diet after eliminating these foods. If you'd like, I can refer you to a dietician who can help you develop a healthy diet that keeps you as symptom-free as possible."

RESULTS

- During the 2019-2020 school year, 48 students completed the course and 27% of those students completed the course evaluation.
- Students that enrolled had a wide array of specialties, ranging from surgical to subspecialty and primary care.



Qualitative Feedback from Students

"I really did take away some great nuggets of knowledge that will be useful in my specialty of choice of emergency medicine."

"Thank you for creating such an interesting course. I really appreciated the topics and have found a lot of great resources on topics that I'm interested in such as pediatrics and mindfulness."

DISCUSSION

The course survey showed that students favorably evaluated the course. The Food Insecurity and Interpreting Nutrition Literature modules were also given favorable reviews, similar to the HmF modules. Faculty could see the student enthusiasm and engagement in the course as noted in their reflection questions and recipe photos. Student interest in the course continues. In the 2020-2021 school year, 46 students have already enrolled in the elective course.

Improvements to the course will include earlier feedback to students' responses and improvements in the ease of navigation of the course site. We plan to evaluate students prior to the course as well as after completion. This will give more specific data on the value of each module as well as student growth throughout the course.