



Culinary Medicine Elective Pilot at the University of Michigan Medical School

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Background

Medical education historically has focused on physiology, pathophysiology, diagnostics, and therapy. While this knowledge base is critical for shaping competent physicians, it does not lend itself to having patient-centered conversations about lifestyle and health. Within the basic science curriculum, nutrition education focuses on balancing intake and output of macronutrients and micronutrients. Moreover, traditional nutritional counseling for patients operates on the often false premise of food security. Discussions about real food and an understanding of how patients nourish themselves are noticeably absent from the skill set medical students learn.¹ Culinary Medicine electives--hands-on experiences in which medical students learn to prepare the diets they may prescribe--have been created to remedy this gap in medical education.

Objectives

The elective’s goals are to:

- 1. Help students become more knowledgeable in discussing nutrition and food with their patients
- 2. Help students provide evidence-based nutritional guidance to patient populations with specific chronic conditions, such as heart disease and diabetes.

Methods

The Culinary Medicine elective taught at the University of Michigan is an abbreviated version of Tulane Medical School’s Cooking for Health Optimization with Patients (CHOP) curriculum.

A session on food insecurity was created by the co-authors to remedy the gap in medical education regarding the relevance of food insecurity to health. This session included a case-based discussion of the presenting features and consequences of food insecurity, followed by a panel with members of five local organizations addressing food insecurity in different dimensions, including community programs and policy. A 19-question survey was administered to students who attended to assess the efficacy of the session in improving knowledge about food (in)security.

This evaluation focuses on (1) the impact of the elective on participants’ self-reported knowledge base on health-oriented diets and comfort in counseling patients and (2) the impact of the food insecurity session on participants’ understanding of food insecurity.

Step 1

- 4th year medical students self-select into the Culinary Medicine elective through the UMMS Branches Curriculum.

Step 2

- 4-hour didactic sessions covering the following topics:
 - Food Insecurity
 - Eating for Special Diets
 - Effective Nutritional Interviewing
 - Reading Nutritional Labels
- 4 kitchen sessions covering the following topics:
 - Mediterranean Diet
 - DASH Diet
 - Portion control
 - Carbohydrate management in type 2 diabetes mellitus

Step 3

- Administer self-reported surveys before and after the course
- Administer validated surveys used by Tulane Medical School to survey course outcomes
- Evaluate outcomes

Results

Students who enrolled in the culinary medicine elective felt that their knowledge base and comfort with counseling patients about the Mediterranean and DASH diets, portion control and carbohydrate counting for T2DM was improved by the end of the course. Students’ self-reports indicated that they achieved their goal of learning the evidence behind commonly prescribed diets. A number of students also learned new ways to discuss diet, nutrition, and food with overweight patients. All of the students who participated in the course would recommend the Culinary Medicine Elective to their peers.

Session Topic	Knowledge Base			Comfort Discussing with Patients		
	Before	After	Percent Change	Before	After	Percent Change
Mediterr.	2	3.8	+91.7%	1.7	3.8	+130%
DASH	2	3.8	+91.7%	1.8	3.7	+100%
Port. Cont.	2.7	3.5	+31.3%	2.5	3.7	+46.7%
Carb-T2DM	2.2	3.7	+69.2%	2.3	3.6	+56.5%

Themes regarding what students hope to gain from the culinary medicine elective (pre-course survey)

A greater understanding of the evidence behind commonly prescribed diets (n=5)
The hope that by using my own food preparation strategies and experience I will be able to discuss diet change with patients more realistically (n=3)
Increased overall comfort when counseling patients on diet (n=2)

Themes regarding how the culinary medicine elective will impact their future interactions with patients (post-course survey)

Will inform patients that the DASH diet works synergistically with antihypertensive medications (n=2)
Will focus less on labeling patients as obese during counseling, and more on lifestyle changes that may improve their overall health (n=3)
Will incorporate more of the evidence behind commonly prescribed diets when counseling patients (n=5)

Table 2. (above) Thematic representation of responses regarding goals for participation (column 1), versus predicted impact that the course will have on future patient encounters (column 2).

Table 1. (left) Percent change in self-reported knowledge base and comfort counseling patients about the Mediterranean and DASH diets, portion control and carbohydrate counting after completing the University of Michigan Culinary Medicine Elective

Table 2. (below) Outcomes of food insecurity teaching session learning objectives based on self-reported assessment

Percent changes were calculated by assigning numeric values to self-assessment options. For Table 1, 1=Poor, 2=Fair, 3=Good, 4=Excellent. For Table 2, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Session Objective	Average from Self-Reports		
	Before	After	Percent Change
Understanding of how food insecurity presents	3.2	4.4	+37.5%
Understanding of what factors affect food insecurity	3.6	4.6	+27.8%
Understanding of connection between food security and health; confidence discussing this with peers	2.6	4.6	+76.9%
Felt comfortable discussing food access with patients who are food insecure	1.8	4.2	+133.3%
Felt knowledgeable about resources to provide to patients who are food insecure	1.6	3.8	+137.5%
Considered the understanding of food security issues important for a physician	4.2	4.8	+14.2%
Felt that the topic of food insecurity should be included in all medical school curricula	3.8	4.8	+26.3%

Conclusions

Qualitative and quantitative results from a pre-post survey based on responses from six student participants indicated that the elective improved self-reported knowledge base and comfort with counseling patients about the Mediterranean and DASH diets, portion control, and carbohydrate counting for T2DM. After course completion, students self-reports indicated that they anticipate incorporating more of the evidence behind commonly prescribed diets when counseling patients. Results from the survey specific to the food insecurity session based on responses from five participants demonstrated that students reported a deeper understanding of how food insecurity presents, what factors affect it, and how it connects to health. Students also reported an improvement in their comfort discussing access to food with patients who live in food-insecure areas and directing them to appropriate resources.

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