

Medical Student–Led Community Cooking Classes

A Novel Preventive Medicine Model That's Easy to Swallow

Introduction

The obesity epidemic and increasing rates of associated chronic diseases highlight the need for physician competency in clinical nutrition. The importance of this issue notwithstanding, only 19% of graduating U.S. medical students report readiness to offer adequate nutritional education to patients despite its demonstrated efficacy.^{1,2} Tulane University School of Medicine created The Goldring Center for Culinary Medicine as the world's first known medical school–based teaching kitchen led by a physician and trained chef with a dedicated associated research team for monitoring outcomes. The Center produced an integrated nutrition curriculum with hands-on application via medical student–led community cooking and nutrition classes. Medical students who participated in the first- and second-year Goldring elective learning modules helped lead community cooking classes. In addition, we developed a 4-hour community service training series for students unable to take the elective course. All students may attend third-year disease-specific nutrition seminars and fourth-year away rotation at the College of Culinary Arts in Johnson & Wales University.³

Methods

The Center trained 125 first- and second-year medical students this past year in an elective 2-hour nutrition and cooking skills class, and then the students directed a six-class series as community service. The students collectively accumulated 1200 service hours leading structured culinary classes combined with chronic disease management education for underserved urban communities in New Orleans. Outreach cooking classes were taught at a variety of locations, including The Goldring Center, health clinics, community centers, health fairs, and schools. Community participants were provided curricular materials and recipes to review prior to each class that were designed around a single theme, including healthy breakfasts, low-salt diet adherence, and strategic meal planning. Medical students delivered a 10-minute presentation, ran a cooking lesson, and guided a dinner discussion. At the conclusion of the class, participants and students discussed the new techniques and information they learned over freshly prepared food and considered how to incorporate these lessons into their daily lives.

Results

Goldring implemented an aggressive curriculum quality improvement plan with annual schoolwide surveys that tracked changes in students' clinical self-reported competencies, attitudes, and health habits, in addition to their degree of participation in Goldring's curriculum throughout their medical education and residencies. Prior to the Center's curriculum implementation, the 2012 fall survey of 422 students (83.41% completion rate, $n=352$) was performed with univariate analysis and multivariate logistic regression models (Stata 12.0). Results suggest that this elective curriculum with its service learning application is critical to student competency in providing nutrition education for their patients during clerkships and extending into their residencies. This finding is especially pronounced among third- and fourth-year medical students, with those participating in the nutrition modules reporting greater competency in patient nutrition counseling compared with their peers who did not engage in education through the Center for Culinary Medicine. After controlling for race, gender, intent to enter a primary care field, and dietary habits, students with past nutrition education (prior to the Goldring curriculum) were more likely to report total proficiency in educating obese patients about nutrition for optimal weight loss (OR=2.38, 95% CI=1.14, 4.96, $p=0.021$); antioxidants in health (OR=2.06, 95% CI=1.17, 3.60, $p=0.012$); aerobic exercise (OR=2.34, 95% CI=1.40, 3.91, $p=0.001$); and hydration (OR=1.96, 95% CI=1.19, 3.24, $p=0.008$) compared to students without such education. It is particularly striking that third- and fourth-year medical students who completed clinical clerkships did not report significant proficiency in these areas whereas students with nutritional education did. These findings indicate that the students' nutrition education prior to medical school (even with varying degrees of exposure via academic degrees and/or research) may better prepare them to provide nutrition education to patients compared to students with clinical training as third- and fourth-year students during clerkships.

Discussion

Worldwide increases in obesity rates and associated chronic diseases highlight the need for improved preventive medicine strategies. Baseline medical student survey results suggest that these students are receiving inadequate nutrition education training in their current curriculum; Tulane's courses are consistent with the national model of restricting such education to mostly preclinical year lectures. A promising alternative is Goldring's interactive translation of nutrition information

from first- and second-year team-based modules to service learning in the community, which then builds into third-year disease-centric seminars, and culminates in fourth-year rotations with a leading culinary institute and hospital. Ongoing program monitoring will enable evaluation and optimization of Goldring's evidence-based curriculum and establish it as a preventive medicine model for medical schools nationally, in service to their communities locally.

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