



“Images” of nutrition in medical education and primary care¹⁻⁵

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ABSTRACT In this article I describe challenges to medical-nutrition educators and an opportunity provided by the Association of American Medical Colleges Medical School Objectives Project. Brief snapshots of nutrition education are given during the family medicine residency and through continuing medical education programming. An argument is made to provide education that focuses not on knowledge, but on confidence and skill in providing nutrition services to primary care patients. Medical-nutrition educators are challenged to share curriculum ideas and to explore ways to use technology to become a more effective community. *Am J Clin Nutr* 2001;73:1006-9.

KEY WORDS Medical-nutrition education, family medicine resident, primary care, Medical School Objectives Project

INTRODUCTION

The title of this paper requires some explanation. My colleagues and I in multimedia nutrition education research started using the metaphor of *images* or *snapshots* several years ago as we tried to determine how short a video segment of nutrition counseling could be before the point trying to be made was lost. We hypothesized that multimedia and Web-based education strategies could address both the lack of a guaranteed clinical exposure to nutrition problems and the lack of role model faculty to teach nutrition. We had already shown that the use of multimedia was an acceptable method for medical-nutrition education (1-3). We had also observed the medical tradition of “see one, do one, teach one.” This resulted in our commitment to use the power of multimedia to show physicians “doing” nutrition. But video is expensive to produce and requires large amounts of computer memory. Therefore, it was critical to identify the appropriate length of video needed to accomplish the task. How many images or frames did it take? Later, as we developed the CD-ROM program *Images of Cancer Prevention, the Nutrition Link* (4), our use of the term *images* was expanded to mean “imagine if things were different.” For example, imagine if physicians, at critical points in their patients’ lives, assessed and counseled the patients on nutrition. What would that look like? Imagine that the patient outcome might be different. So we engaged medical students and residents in our quest for new images. This article is intended to give images or snapshots of what nutrition medical education in primary care looks like. It is also intended to encourage you to imagine how medical-nutrition education might be strengthened.

THE MEDICAL SCHOOL OBJECTIVES PROJECT CHALLENGE

Much has been written about nutrition in medical education by previous recipients of this award and others (5-8). Several of these authors, including Elaine Feldman (9), suggested that I not focus this article on the past. Rather, I will highlight an opportunity or challenge that the current Association of American Medical Colleges (AAMC) Medical School Objectives Project (MSOP) provides medical-nutrition educators. The AAMC established the MSOP in January 1996 to assist medical schools in their efforts to address concerns that new doctors are not as well prepared as they should be to meet society’s expectations. The MSOP recommends that medical school faculty specify the attributes appropriate for graduating students to have and adopt learning objectives for the curriculum consistent with those attributes (10). The challenge for medical-nutrition educators is to not get lost in the current curriculum reform. This is particularly important for those who provide nutrition education through an integrated approach rather than in a required course. Participation in the school’s MSOP process by medical-nutrition educators is critical and provides an opportunity for the nutrition community to craft learning objectives that meet some of the expectations of the MSOP. The AAMC MSOP committee provides 4 sample attributes: altruistic, knowledgeable, skillful, and dutiful. The nutrition community needs to find the time, the will, and a way to promote nutrition as one way of meeting these 4 objectives.

NUTRITION IN FAMILY MEDICINE RESIDENCY PROGRAMS

The Residency Review Committee (RRC) of the American Academy of Family Practice (AAFP) has required nutrition

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education since 1982 (11). Although the RRC does not specify a number of hours of nutrition training, the AAFP published recommended core educational guidelines in 1989, 1995, and 2000. The Group on Nutrition, Society for Teachers of Family Medicine, interpreted these core guidelines into a detailed curriculum. The 1995 edition of the *Physician's Curriculum in Clinical Nutrition* is currently being revised (12). The preface to the curriculum guide clearly notes that the assignment of a faculty physician to take responsibility for the curriculum is essential to the success of the program. An abbreviated table of contents of a curriculum in clinical nutrition is shown in **Table 1**. Clinical nutrition specialists (licensed dietitians) are most helpful as co-designers during curriculum development and as teaching faculty. The manual provides a model that evolved from the collective experience of authors from diverse residency programs. The curriculum is not intended to be adopted in its entirety, but rather allows the selection of specific competencies and methods to meet the individual needs and strengths of each residency program. Even so, the current working group recognizes a need to reduce the differences among programs. I previously summarized the history of nutrition education in family practice (13, 14). The challenge for the nutrition community is to identify and support the universal competencies.

EVOLUTION OF THOUGHTS ON PRIMARY CARE NUTRITION EDUCATION

This award recognizes a career effort in nutrition education. Early in my career, I had only a quarter-time medical school appointment. At that time, my research focused on how to motivate and teach consumers to change their food habits to improve health outcomes. In 1986 I moved to a full-time position in medical education in response to a challenge from James G Jones, then chairman of Family Medicine at East Carolina University. Dr Jones, a recognized leader in family medicine who had served a term as president of the AAFP, said that it was easy to criticize the nutrition services provided by primary care physicians from the outside and that he would provide me an opportunity to imagine something different. Anita Lasswell and I previously described the challenges that graduate-trained dietitians experience when responding to education challenges in the medical arena (15). My focus changed from trying to affect consumer behavior to affecting physician behavior. I began to imagine what education would need to look like to result in physicians providing nutrition services to their patients. The patient need existed. Patients identified their doctors as the most reliable and valued source of nutrition information. It seemed that the opportunity existed, too. Estimates vary, but there is a nutrition-related reason for $\geq 25\%$ of all visits to primary care providers. Yet, virtually every published study on the issue shows that family physicians, although supportive, are not delivering nutrition services to their patients (16, 17). If the reason for the lack of follow-through by physicians is lack of knowledge, nutrition educators know how to solve that problem. Many experiments have successfully demonstrated methods to improve the knowledge and attitudes of both medical students and residents toward nutrition. The issue is more than a gap in nutrition knowledge. Survey after survey documents that most ($\leq 90\%$) family physicians agree that nutrition is their responsibility (18). However the literature, since 1982, carries a recurrent theme: physicians lack confidence in their nutrition assessment and counseling

TABLE 1
Physician's curriculum in clinical nutrition

Section I: outcome-based curricular competencies	
Introduction	
1. Basic care and life cycle health care	Nutritional screening and assessment Assessment of nutrient intake Nutritional counseling Nutrition support skills Pre- and postpartum care skills Infant feeding skills Children and adolescent care skills Women's health care skills Geriatric care skills
2. Prevention and treatment of disease	Enteral nutrition skills Parenteral nutrition skills Gastrointestinal dysfunction care skills Malabsorption syndrome care skills Food allergy care skills AIDS and HIV care skills Cancer care skills Diabetes care skills Hyperlipidemia care skills Hypertension care skills Pulmonary disease skills Renal care skills
3. Related behavior and lifestyle concerns and other	Obesity care skills Eating disorders care skills (anorexia and bulimia) Alcohol abuse and liver disease skills Sports and activity care skills
Section II: methods	
Introduction	
1. Faculty commitment and program development	Curriculum coordinator Faculty development activities Environmental influences
2. Using the patient care method	Include nutrition in orientation Nutrition handbooks Nutrition-focused rounds Nutrition screening Co-counseling Computer nutrition assessment programs Observation and precepting Chart review and quality assurance Evaluation of patient education materials Patient classes Nursing home and extended care facility rounds Health fairs, etc Patient newsletter
3. Implementing a nutrition rotation or course	Lecture or conference Self-assessments Simulations and role playing Managing standardized and simulated patients Case conferences Physician conference meal Grand rounds Field trips
4. Independent study	
5. Related curriculum (eg, behavioral science)	
6. Evaluations	Objective structured clinical examinations (OSCE) and clinical practice examinations (CPX) Direct observation Rotation evaluation Competency checklists Surveys of graduates



skills. Physicians report that they have not had adequate preparation for their role as promoters of good nutrition (19, 20). More troublesome is a report that only 21% of family physicians experience personal gratification in counseling about diet issues (21). As in other areas of graduate medical education, there needs to be a creative closing of the gap between what is preached and what is practiced in the office on a daily basis.

CONTINUING MEDICAL EDUCATION IN NUTRITION

Where are the continuing medical education (CME) programs focused on these issues of confidence and skills? There are no databases describing the number and kind of nutrition programs offered, but such programs are thought to be limited. CME programs are physician driven and experience shows that physicians do not request nor attend all-day meetings on nutrition. Some program planners use the integration approach. For example, a talk on childhood obesity might be integrated into a daylong program on pediatrics for family physicians. A talk on sports medicine might be delivered in an orthopedic conference for family physicians. Board-certified family physicians take a recertification examination every 7 y. The AAFP offers a weeklong board recertification course. Although there is no specified nutrition content for the review lectures, a 2-h nutrition workshop covering the key points of dietary guidelines, weight management, pediatric nutrition, geriatric nutrition, and eating disorders is consistently offered. However, my experience as a CME faculty member confirms that it is difficult to build a physician's confidence or skill in nutrition in a 45-min lecture-style talk.

PROGRESS SLOWED BY BARRIERS TO PUBLICATION

There are a host of reasons physicians do not provide nutrition services to their patients. But, in the spirit of images, imagine that there were more published papers describing successful nutrition education efforts than papers listing barriers to nutrition education. The unfortunate reality is that medical-nutrition educators report that it is difficult to get their work published. My personal experience is similar. Recently, I received a rejection letter stating that the nutrition education study we conducted was well designed and the topic of potential interest to the readers of the journal. However, the editor wrote that the journal had already published "a" nutrition paper in the past 12 mo and that, therefore, this paper was not a priority. Colleagues report manuscript rejections with explanations such as "too small sample sizes" or "lack of generalizability to other schools and residencies." Reviews of grant proposals for the development of medical-nutrition education curriculum including multimedia programs receive similar comments: "It's already been done, once." Medical-nutrition educators need to be more persuasive with journal editors and grant program managers if interventions are to be tried and shared.


IMPROVING THE EFFECTIVENESS OF ASSESSMENT AND COUNSELING

The task of improving physicians' perceptions of their effectiveness in changing dietary behaviors is a current challenge. It may be useful to focus on the top reasons for office visits for which dietary assessment and counseling could be integral (22):

hypertension (no. 1), general medical exam (no. 3), diabetes mellitus (no. 8), degenerative joint disease (no. 10), heart disease (no. 11), asthma (no. 12), abdominal pain (no. 18), and pregnancy care (no. 21). There are reports of innovations for improving physician counseling that can guide our efforts, although the literature search takes more than a simple query. Some of those efforts evaluate performance rather than just knowledge (23–25). Medical-nutrition educators in both medical schools and residency programs need to find ways to seriously measure the performance of the learners, in the realistic office visit of today, if progress is to be made. The literature describing successful physician interventions is dispersed throughout the health sciences literature. To facilitate a greater awareness of that literature, we are cataloguing these efforts at our Web site (26).

FOCUS ON SUCCESSES AND SHARING

Medical-nutrition educators need to promote their successes rather than focus on the barriers to nutrition education. We need to build a bank of validated teaching cases and use them across the country. Although casebooks were published, they were victims of limited distribution. A review of major medical Web sites yields few nutrition cases. Many nutrition cases exist, but a mechanism for sharing is lacking. The nutrition community needs to develop, test, and validate office-based assessment and counseling questionnaires and tools, and then encourage their adoption throughout the country. Technology provides an opportunity for the dissemination of these tools in ways never before possible. Our experience with CD-ROM programs (27, 28) and virtual seminars (29, 30) with both faculty and medical students convinced me that technology can assist us in meeting some of these needs. There is a documented need and a desire for medical-nutrition educators to share ideas and materials. However, our experience suggests that it will take the leadership of an organization like the American Society for Clinical Nutrition, and not a single institution, to support a virtual community of medical-nutrition educators on the World Wide Web. This virtual nutrition community could then work toward the adoption of more uniform and high-quality nutrition education in medical schools and residency programs.

The American College on Graduate Medical Education suggests that physicians need to possess better communication skills, medical informatics and broad computer skills, an enhanced population perspective for the provision of care, an ability to reflect on and learn from their practice, a higher degree of professionalism, and the skills to deliver cost-effective, high-quality care (31). The AAMC conducted a 3-round Delphi study on ways the Internet may change academic medicine (32). Its statement that "good teaching includes providing well organized and effective learning resources and experiences" is the challenge to us. The medical-nutrition education community needs to develop or adopt already-developed refereed multimedia nutrition cases that cover the medical-nutrition competencies needed in primary care. The nutrition community must use technology to deliver nutrition learning modules that will be valued by physicians responding to their patients' needs. The challenge remains for us to 1) explore additional strategies that utilize technology, 2) create awareness for effective strategies, and 3) disseminate effective educational materials. 



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