Counterbalancing the Uncertainties of Medical Nutrition Education with Effective Online Instruction

Martin Kohlmeier

Practicing physicians need to recognize nutrition-related health challenges in their patients and know what to do about the detected problems [1]. It takes at least 25 to 30 hours of medical school instruction to achieve just basic nutrition competencies. Because most medical students get significantly less than this minimum, they are not adequately prepared to deal with common nutrition-related challenges in practice. The majority of all accredited US medical schools require less than 25 hours of nutrition instruction across the entire four-year curriculum and a few still fail to require any nutrition education at all. Medical schools in other countries struggle with the same instructional deficits, and many fail altogether to address the need for proper nutrition training. It is clear what physicians need to know about nutrition to serve their patients. First, the science, how foods work in health and disease; then best nutrition practice, recognizing nutrition problems, and what to do about them; and finally getting the message across, which often means to help their patients help themselves. The greatest deficits exist in assessing individual patient needs, blending nutritional therapies with medical treatments, and finding effective solutions for better health.

The Nutrition in Medicine project (NIM, nutritioninmedicine.org) has demonstrated that computer-based nutrition instruction is effective and efficient, particularly as an integral component of clinical training. A majority of US medical [2] and osteopathic [3] schools use the NIM materials. Institutions in more than twenty countries also find them useful.

The online courses cover a full curriculum from basic science to clinical practice. Interactive lessons, skill-building exercises, and practice challenges allow learners to progress at their own pace. Since lifestyle change depends on effective communication, the lessons teach specific phrases to be used for motivational interviewing and other proven approaches. There is also an opportunity to hone clinical skills with simulated patient
interactions (Fig.1). These are timed exercises that reflect the situation in patient care where assessment and guidance have to be provided in an appropriately efficient manner.

A particularly useful feature of computer-based teaching is that machines can measure learning success, even while the session is still in progress. If they have not achieved the required learning outcome, instruction can seamlessly loop through another set of lessons or exercises to improve comprehension. This ensures that all users learn what they need to know, not just a few with interest in the topic. Yet another strategy is to test content familiarity beforehand to tailor instruction to the needs of the individual learner and thereby shorten required session duration while retaining much of the learning effect and long-term retention [4].

Table 1. Improved practice patterns after just one hour of online training

<table>
<thead>
<tr>
<th>In your last four patient encounters how often did you</th>
<th>Baseline, %</th>
<th>Three months later, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>address nutritional issues at new OB appointment</td>
<td>57.9</td>
<td>64.5</td>
</tr>
<tr>
<td>advise about gestational weight gain</td>
<td>33.2</td>
<td>77.4</td>
</tr>
<tr>
<td>calculate BMI at OB visit</td>
<td>78.4</td>
<td>93.3</td>
</tr>
<tr>
<td>discuss nutritional issues during GYN visit</td>
<td>16.2</td>
<td>43.3</td>
</tr>
<tr>
<td>refer to an RD</td>
<td>36.8</td>
<td>56.7</td>
</tr>
</tbody>
</table>

Fig. 1. Screen capture of a patient simulation to practice nutrition assessment and dietary guidance of a patient with an atherogenic lipoprotein profile.
Online nutrition instruction can change practice patterns. In one study [5], residents and fellows in gynecology and obstetrics learned to use effective assessment and counseling tools with their patients. Before their one-hour learning session, most of these physicians rarely or never advised their pregnant patients about proper weight gain. Three months later, most of them had made it a routine part of patient work-up (Table 1). There was similar improvement in several other practice activities, such as discussing nutritional issues during a gynecological visit or referring to a dietitian. This is at least a start that can be replicated without too much difficulty across all medical disciplines and worldwide.

It should be evident that computer-based instruction can help to reduce the worrisome training deficits of physicians and other healthcare providers. Because the materials are provided online, the instruction is highly scalable and also cost effective. Something needs to change, and we know how to get it done.

References