



Perceptions of Nutrition Education in the Current Medical School Curriculum

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BACKGROUND AND OBJECTIVES: Although the National Academy of Sciences has recommended a minimum of 25 hours of nutrition education, the majority of medical schools offer very little to no training or education in nutrition to medical students during their tenure in medical school. In order to assess the relevance and efficacy of current levels of nutrition training as viewed by students, residents, and physicians, as well as possible areas for further improvement, the authors conducted a qualitative study exploring students' experiences.

METHODS: Medical students, residents, and physicians at a Midwestern medical school were interviewed during a series of eight focus groups and one-on-one interviews. Results were coded and analyzed using NVivo qualitative software for emerging themes.

RESULTS: Medical students felt nutrition was poorly integrated into the curriculum. They witnessed little nutrition counseling during shadowing experiences, and the nutrition information that was imparted was often outdated or incorrect. Residents stated they felt ill-prepared to offer nutrition counseling and desired further education in this area.

CONCLUSIONS: Overall, medical students and physicians agreed that the nutrition education currently provided in medical school is inadequate. Residents stated they would benefit from further training in behavioral counseling in order to increase their confidence in educating patients about nutrition. Increasing training in these areas could translate into improved health outcomes.

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Although the National Academy of Sciences recommends a minimum 25 hours of nutrition education,¹ the lack of nutrition training in medical school is well documented in the literature.^{1,2} Adams et al¹ reported that most medical school instructors believed the amount of nutrition education in

the curriculum was insufficient; in a 2005 survey 51% of medical students described the emphasis in nutrition education as "inadequate"; students received less than the minimum 25 hours of recommended education.

The lack of training in medical school has ramifications in the exam room; patients report physicians

seldom mention nutrition during office visits. Eaton et al³ report only 6.5% of physicians counseled the majority of their patients on nutrition, while 54% counseled patients sporadically. In addition, physicians only attempted to counsel overweight adult patients in 11% of their encounters.⁴ This may be due to physicians' lack of training and knowledge in nutrition as a result of their lack of training in medical school. It may also be due to a lack of effective and widely-disseminated behavioral interventions to teach physicians how to counsel patients about their lifestyle choices.³

This report assesses the state of nutrition education throughout medical school through the eyes of medical students and residents at Indiana University School of Medicine—Terre Haute (IUSM-TH).

Methods

To better understand the role of nutrition education in the medical school curriculum, a qualitative study was conducted using a modified grounded theory approach.¹¹ Forty-eight medical students, 14 residents, and 10 physicians participated

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in eight focus groups and individual interviews over 18 months between school years 2012 and 2014 (Table 2). The same questions were used for students and residents (Table 1). Physician questions were modified to take into account their clinical experience.

IUSM-TH is a regional center specializing in rural health. In the first 2 years, 12 students from the

traditional MD track and eight to 12 students in the Rural Medical Education Program (RMEP) complete basic science courses. After 2 years, RMEP-track students continue their studies at the regional center, while nonrural students complete their studies at the main campus in Indianapolis. See Table 2 for specific participation rates.

This study was approved by the institutional review boards at Indiana University (approval number: 1301010467), and Indiana State University (approval number: 437386-2).

Data Analysis

All focus groups and interview transcripts were coded and analyzed in NVivo 10, a qualitative software management program. Using

Table 1: Question Guide—Medical Students and Residents

Theme	Key Question
Nutrition in current curriculum	In general, how well has nutrition been incorporated into your education? Do think it was addressed adequately? Given your experience so far as medical students, how do you think information about nutrition could be better incorporated into your education both inside and outside the classroom
Expectations	What do expect in regards to nutrition education from your medical school training? How much did your expectations differ from the training you actually received?
Observation of nutrition education	Did the physicians you shadowed perform any nutrition counseling or try to educate patients on a one-on-one basis about nutrition? What about weight? Did the staff speak to patients about nutrition or weight?
Physician's role	What do you think is a physician's role in educating patients about nutrition?
Specialties requiring knowledge of nutrition	In what particular specialties do you feel advanced knowledge about nutrition is important?
Future practice	How do you see nutrition being incorporated into your future practice? What about residency?
Nutrition certificate	If there were a possibility to obtain a certificate in nutrition at IUSM would you have been interested? What about a research elective?

Table 2: Focus Group Participants

Graduating Class	Method	Rural/Traditional Track Participants	Total Number of Students per Class (Rural and Traditional Track)	Number of Rural Students per Class	Total Number of Participants	Percentage of IUSM-TH Class (Rural and Traditional Track)
2013 (MS4s)	Focus group/ interview	Rural	11*	11	6	54.5%
2014 (MS3s)	Focus group	Rural	12*	12	8	66.6%
2015 (MS2s)	Focus group	Rural & traditional	24	9	14	58.3%
2016 (MS1s)	Focus group	Rural and traditional	23	11	12	52.1%
2017 (MS1s)	Focus group	Rural and traditional track	24	12	8	33.3%

* Participants from the class of 2013 (then MS4s) and 2014 (then MS3s) focus groups included only those students enrolled in the rural track. Beginning in their third year, rural students exclusively are present at the IUSM-TH campus, thus the total possible number of participants in each focus group is reduced by nearly half, as the traditional MD track students are no longer present on campus, and are not eligible to participate.

inductive coding, three researchers identified and coded key themes that emerged organically from the transcribed data. Interrater reliability¹² was checked through NVivo, using a coding comparison query, and was consistently above 93%. While calculating interrater reliability for qualitative data is difficult given the subjective context, NVivo software uses a coder comparison analysis which takes into consideration nodes (themes), source type, source, and coders. Agreement is calculated using noncoded and coded text, and applying a mathematical equation to derive a Kappa value, therefore providing interpretation of the agreement between coders.¹³

Results

Overall, medical students felt nutrition was integrated poorly into the curriculum (Table 3). They described nutrition as being “mildly incorporated” into basic science courses, stating the amount of material as “almost anecdotal” and would not be helpful in a clinical setting. Physicians also stated they did not remember having any extensive training on nutrition.

Overall, students did not see nutrition counseling routinely performed. One participant said he

thought physicians assumed their patients knew they needed to lose weight. “Physicians generally just assume people know how to lose weight by just exercising and eating less.” This was true even with patients who had medical conditions directly related to their lifestyle and weight.

Results indicated the dominant barriers to counseling patients on nutrition were lack of time during appointments and the shadowing physicians’ lack of knowledge about nutrition. Students said they were cognizant of the pressure doctors were under to see a large number of patients daily: “Physicians do not have the time to enter into those conversations with their patients because it’s not budgeted. The hospital starts to lose tremendous amounts of money at that point.”

Residents mentioned frustration at their own lack of knowledge regarding nutrition, which prohibited them from counseling patients. This was troublesome to residents who felt it was important to educate patients as they were frequently the sole source of information for them. One stated: “For most patients their physician is the only one they would even ask how to lose weight, how to

be more healthy...” However, they stated they were not “equipped to come up with a very strategic plan.”

Residents also stated that they did not know how to counsel their patients in simple, straightforward terms about their diets or the lifestyle changes they needed to make to their diets, “I need a realistic [way] to explain it [dietary choices]... in a way they’re not just gonna be overwhelmed.” Another participant agreed saying, “We don’t have the vocabulary, we don’t have the ability to pull up a diagram...that they can understand and take with them to Kroger to get their food.”

Discussion

This report underscores the inadequacy of nutrition education in the current medical school curriculum, and it also highlights the need to provide students the opportunity to learn counseling techniques. Students stated they felt the nutrition education they received was inadequate and arbitrary. Residents agreed, stating they felt the training they received did not adequately prepare them to prescribe a diet.

Physicians’ inadequate preparation was evident by the lack of behavioral counseling that medical

Table 3: Themes

Subtheme	Quotations
Nutrition education in current curriculum	<p>“It wasn’t even lightly emphasized.”</p> <p>“Nutrition is probably number one on the list of things that are not addressed.”</p> <p>“I don’t think [as a result of the education I received] I felt prepared to address it in a clinical setting.”</p>
Nutrition counseling performed by shadowed physician	<p>“I’ve never had a physician that I’ve gone to see talk about it either.”</p> <p>“They never actually did it except on a very simplistic basis.”</p>
Physicians’ lack of knowledge about nutrition	<p>“The lack of knowledge just might have been in his training... there were not a lot of nutritionists.”</p> <p>“There were instances where I could tell he was a little outdated.”</p>
Behavioral counseling	<p>“We don’t have the vocabulary, we don’t have the ability to pull a diagram that is something that they can understand.”</p> <p>“I need to figure out a realistic way to ...make it [lifestyle changes] understandable.”</p> <p>“I need to know...how to explain it and how to get through to my patients in a way that they’re not just going to be overwhelmed and be like I can’t do this...there’s got to be a way that I can get across to them.”</p>

students witnessed during their shadowing and clinical rotations. Students stated they saw very little counseling performed and little empathy towards patients struggling with their weight. In previous studies examining behavioral counseling in primary care, physicians who felt their training was inadequate stated they felt less comfortable counseling patients about nutrition,⁶ which may be why students in our study witnessed little counseling. Integration of behavioral counseling techniques into the medical school curriculum could enhance physicians' sense of self-efficacy, perhaps establishing nutrition counseling as a part of basic care given during visits.

This study has limitations. First, it was conducted at one institution, and therefore the perceptions and experiences of participants may not be generalizable to other settings. Secondly, 51% of eligible students took part in this study; it is possible higher participation would have yielded different results. Likewise, the focus groups and interviews for this study were gathered in 2012-14, so the data may be somewhat dated.

Medical students, residents, and physicians at every stage of their respective careers and education were interviewed about the role of nutrition in medicine. Future studies

should examine how in-depth training and usage of behavioral counseling techniques among future and current clinicians influences patient outcomes. In order to address this problem, medical schools and residencies should offer didactic lectures on nutrition as well as training on specific counseling techniques they can use in the exam room.

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