Nutrition knowledge of medical graduates

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Obesity continues to be a growing problem today. Specifically, childhood obesity has become one of the most critical public health challenges of this time. Increased weight and poor health lead to higher medical costs, thus, efforts must be made to deal with this problem. This research highlight discusses a study that assessed the nutrition knowledge of medical/osteopathic school graduates entering a pediatric residency program and compares it to the knowledge of previous medical graduates found in the literature. It is imperative that medical education continue to incorporate clinical nutrition education in medical school and beyond because it has been shown that the dedicated time has a beneficial effect on the nutrition knowledge of medical students.

Keywords: nutrition; education; medical students; pediatrics


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schools have changed their curricula through the years but a survey by Kelly et al. shows that the number of schools requiring a nutrition course and the overall number of hours of nutrition teaching has changed little over the past two decades [5].

This research highlight reviews a study we performed that assessed the basic nutritional knowledge of fourth year medical/osteopathic school graduates entering a pediatric residency program [6] and compares it to the knowledge of previous medical graduates found in the literature.

During resident orientation for an academic based pediatric residency program, medical and osteopathic school graduates completed a confidential multiple choice nutrition-based questionnaire. Responses were based on national recommendations of peer reviewed organizations, published manufacturers “nutritional facts”, and peer-reviewed public information. Means and standard deviations were calculated for continuous variables, and the nonparametric Wilcoxon Rank Sum Test was used to test for differences between groups. The Chi-Square test was used for categorical variables and the Fisher’s Exact test was used if cell counts were less than 5.

In July 2011 and July 2012, 52 of 59 pediatric in-coming residents completed the survey. Residents came from American- medical schools, Osteopathic-schools of medicine, and International medical schools. The resident’s ethnic/racial composition was White (40%), Black (8%), Hispanic (17%) and Asian/Pacific Islander (27%). The mean correct score was 52%. A majority of the residents knew the daily recommended amount of calories for moderately active female (71%) and male (54%) adolescents and 52% of the residents correctly answered both questions. The most frequent answers for the carbohydrate, protein and fat percentages recommended in a total daily diet were 30 - 39%, 21 - 30% and 5 - 15%, respectively. Most in-coming residents (87%) knew that running one mile burns approximately 100 calories but only a third correctly answered that walking two miles burns approximately 200 calories. Close to three quarters of the residents knew that an approximately a 3,500 calorie deficit is required to lose one pound. Most of the residents (90%) were familiar with the common representations of serving sizes that are frequently displayed in schools and medical clinics.

A paper by Phillips from 1971 reported on the development of a multiple choice test on normal nutrition and diet therapy that was given to 254 second year medical students from four New England medical schools and that the mean scores for the students ranged from 40.4 to 48.5 [7]. In 1975, Podell et al. also created a multiple choice test on nutrition knowledge with the goal of using the information gathered as a basis for a course in clinical nutrition for family practice residents [8]. The various areas of nutrition tested were: lipids and heart disease; sodium restricted diet; obesity and caloric value; food additives; vitamin; carbohydrates, fats and proteins; and politics and personalities. The examinations were given to four groups: practicing physicians, two third year classes, and one fourth year class. The average score over-all was 50, which is comparable both to Phillip’s results and to our results. Practicing physicians (44%) scored lower than the medical students (51%) but all three medical student groups scored nearly the same. Similar to our findings, Podell concluded that there are variations in the amount of knowledge in specific areas of nutrition and that these subjects are usually the same topics frequently found in the media or nonprofessional journals. In 1984 to 1985, Weinsier did a study of nutrition knowledge of senior medical students from various southeastern medical schools; they divided that schools into those that did not require nutrition course, those that required a nutrition course that was a component of another course and those that required a separately identifiable nutrition course and the scores of the students from these three groups were 62%, 68% and 71%, respectively [9]. There was a positive correlation between scores and type of nutrition training received. Almost three decades later, a study of students from a Northeastern medical school comparing those who completed a required course and those who had an incorporated program showed that there was no difference in knowledge scores between the two groups. However, those without the separate nutrition course were significantly less satisfied with the quantity and quality of their education compared to the students who had the individual course [10].

The same survey from our study was also used previously to determine the nutrition knowledge of two groups of patients treated in our office (patients with eating disorders and patients seen for general medicine care) and their parents. The results showed that the recent medical graduates did score somewhat better (52%) than the patients with eating disorders and their parents (47% and 48%, respectively) and the patients seen for general medicine care and their parents (41% and 42%, respectively). However, it was only statistically significant between the medical graduates and the patients seen for general medicine care and their parents [6].

It is apparent that with the ever increasing burden of obesity and its associated co-morbidities on society it is crucial that medical education continue to focus on discovering different ways to incorporate clinical nutrition education in medical school and just as important to have it continue through
residency training and beyond. For this reason, we are developing a noon conference, concentrating on basic nutrition, which will be recorded and available online for our residents. The residents will also be given a clinical pearls summary of the material discussed for quick reference. Following the adoption of this program we plan to assess the impact of the initiative on graduating pediatric residents.

Conflicting interests

The authors have declared that no competing interests exist.

References