

Is More Nutrition Education Needed in the Undergraduate Medical Curriculum?

Perceptions of graduates from a medical university in the United Arab Emirates

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هل المزيد من تعليم التغذية مطلوب في المناهج الطبية في المرحلة الجامعية؟ تصورات خريجي إحدى الجامعات الطبية في دولة الإمارات العربية المتحدة

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ABSTRACT: Objectives: The rise in lifestyle diseases has resulted in primary physicians advising more patients on the benefits of nutritional modifications. However, nutrition education has remained more or less unchanged in the undergraduate medical curriculum. This study aimed to assess the perceptions of medical graduates regarding nutrition education in their undergraduate curriculum. **Methods:** A total of 125 medical graduates from the Gulf Medical University in Ajman, United Arab Emirates, were invited to participate in an anonymous online survey from May to October 2012. The validated pilot-tested questionnaire was designed to assess perceptions regarding nutrition education in the undergraduate medical curriculum. **Results:** A total of 65 medical graduates responded to the survey, of which 55% were female. Of the respondents, 32% were general physicians and 68% were specialists in various disciplines. Nutrition education was perceived to be very important by 80% of the respondents; however, 78.5% felt that they had not received adequate instruction in this field during their undergraduate medical curriculum. The major areas of deficit identified were in the categories of clinical nutrition, nutrition in primary care and evidence-based nutrition. **Conclusion:** In this study, Gulf Medical University graduates perceived a need for more nutrition-related instruction in their undergraduate medical curriculum. The areas of deficit identified in this study could help in future curricular improvements.

Keywords: Nutritional Sciences; Undergraduate Medical Education; Curriculum; United Arab Emirates.

المخلص: الهدف: لقد أدى ارتفاع مستوى نمط الحياة الى تقديم الأطباء للمزيد من المشورة للمرضى فيما يتعلق بفوائد تعديل عاداتهم الغذائية. ومع هذا، فإن التثقيف الغذائي في منهج كلية الطب لا يزال دون تغيير. هدفت هذه الدراسة إلى تقييم تصورات خريجي كلية الطب للتثقيف الغذائي في المنهج الدراسي الجامعي. **الطريقة:** تمت دعوة 125 خريج من كلية الطب من جامعة الخليج الطبية في عجمان، الإمارات العربية المتحدة، للمشاركة في استطلاع على الانترنت من مايو إلى أكتوبر 2012. تم تصميم استبيان تجريبي للتحقق من تقييم تصورات الخريجين بشأن التثقيف الغذائي في المناهج الطبية الجامعية. **النتائج:** شارك 65 من خريجي كلية الطب في المسح، 55% منهم إناث. 32% من الأطباء و 68% من التخصصات الطبية المختلفة. وجد أن التثقيف الغذائي "مهم جداً" عند 80% من المستطلعين. ورأى 78.5% أنهم لم يتلقوا معلومات كافية في هذا المجال خلال دراستهم الجامعية. وكانت مجالات العجز الرئيسية محددة في فئات التغذية السريرية والتغذية في الرعاية الصحية الأولية والتغذية القائمة على الأدلة. الخلاصة: في هذه الدراسة، يرى خريجي جامعة الخليج الطبية الحاجة للمزيد من التثقيف الغذائي في المناهج الطبية الجامعية الخاصة بهم. يمكن للنقائص المحددة في هذه الدراسة أن تساعد في تحسين المناهج الدراسية في المستقبل.

مفتاح الكلمات: علوم التغذية؛ التعليم الطبي الجامعي؛ المناهج الدراسية؛ الإمارات العربية المتحدة.

IN THE PAST FEW DECADES, LIFESTYLE AND food habits in the United Arab Emirates (UAE) and other Arabian Gulf countries have become more sedentary and westernised.^{1,2} While most communicable diseases are well managed in the UAE, a dramatic rise in lifestyle-related diseases, including diabetes and cardiovascular disease, has been observed.³ Physicians are treating more patients with lifestyle-related diseases and giving advice on beneficial nutritional modifications. The importance of increased nutrition education for health professionals

has been recognised in both the USA and the UK, with the latter implementing a Need for Nutrition Education Programme.^{4,5} In the UAE, there is also an increasing awareness about the rising incidence of lifestyle diseases and the role that good nutrition plays in preventing and managing these diseases.⁶

Most medical schools across the world have nutrition-related topics on their curricula. However, a survey carried out in 2001 among 98 medical schools across the USA revealed inadequacies in the nutrition education being taught in the curricula.⁷ Steps were

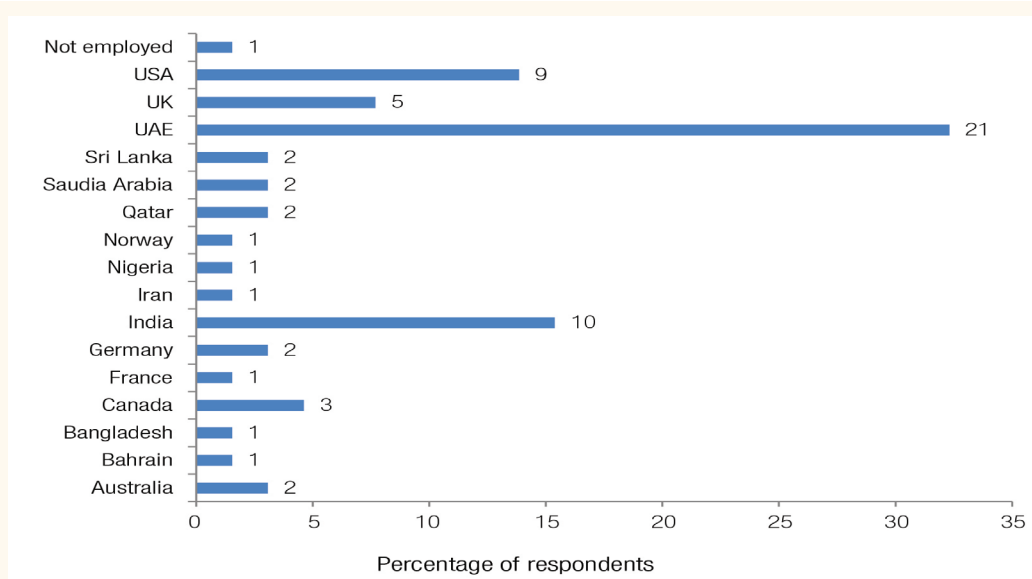


Figure 1: Distribution of the survey respondents by country of present employment (N = 65). The respondents were all graduates of the Gulf Medical University in Ajman, UAE.

UAE = United Arab Emirates.

taken to increase nutrition-related instruction in medical schools; however, an updated study in 2010 showed that nutrition education continued to be inadequate.⁸ Studies from Canada and Japan also indicated insufficient nutrition education in the medical curriculum.^{9,10} There are no studies, to the best of the authors' knowledge, regarding the adequacy of nutrition education in the curricula of medical schools in the UAE or other countries in the Arabian Gulf region. The objective of this study, therefore, was to assess the perceptions of medical graduates from a university in the UAE regarding nutrition education in their undergraduate medical curriculum.

Methods

A total of 178 doctors, of which 63% were female, graduated with a Bachelor of Medicine and a Bachelor of Surgery (MBBS) degree between 2008 and 2010 from the Gulf Medical University, an accredited medical school in Ajman, UAE. Of these, 125 graduates with valid email addresses on the alumni database were invited by email to participate in an anonymous online survey using SurveyMonkey Pro[®] software (SurveyMonkey, Palo Alto, California, USA) between May and October 2012.

A questionnaire to assess the graduates' perceptions regarding nutrition education in the undergraduate medical curriculum was designed with the help of medical education experts and faculty involved in nutrition education. The questionnaire included items related to the participants' sociodemographic information; courses

in which nutrition-related topics were taught and the teaching/learning methods used; importance of nutrition education for doctors; adequacy of nutrition instruction, and areas requiring more nutrition instruction. The respondents were asked to identify areas requiring more instruction from a list which included: basic nutrition concepts (energy balance, macro and micronutrients); nutrition and genetics; nutrition in primary care settings (primary care, community health and preventive medicine); clinical nutrition (nutrition in disease states and nutritional therapy), and evidence-based nutrition (applying evidence-based guidelines to nutrition). While questions related to sociodemographic information were close-ended, those regarding nutrition education had options for open-ended responses.

The questionnaire was converted into an online survey with the help of information technology experts. It was validated and pilot-tested on five medical graduates before the alumni graduates were invited to participate. Three reminders at one-month intervals were sent during the study period to the graduates who had not yet completed the survey.

Data were collected in Microsoft Excel, Version 2007 (Microsoft Corp., Redmond, Washington, USA), and then transferred to the Statistical Package for Social Sciences (SPSS), Version 19.0 software (IBM Corp., Chicago, Illinois, USA) for analysis. The participants were divided into the following groups: male/female, general physicians/specialists and working in the UAE/working outside the UAE. Pearson's Chi-squared test was used for comparisons between groups and the significance level was set at 0.05.

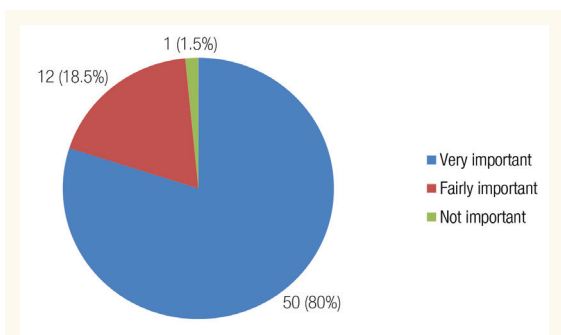


Figure 2: Distribution of the survey respondents regarding their perception of the importance of nutrition education for doctors (N = 65). The respondents were all graduates of the Gulf Medical University in Ajman, United Arab Emirates.

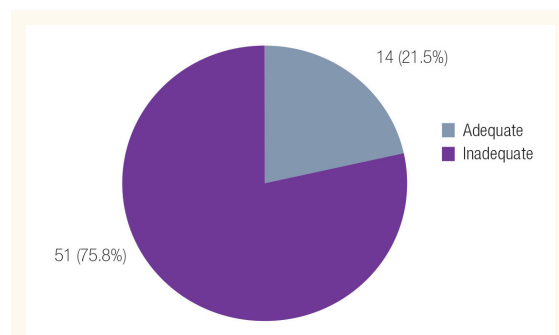


Figure 3: Distribution of the survey respondents regarding their perception of the adequacy of nutrition instruction in their undergraduate medical curriculum in relation to their past or present professional work (N = 65). The respondents were all graduates of the Gulf Medical University in Ajman, United Arab Emirates.

Ethical approval for the study was obtained from the Research & Ethics Committee of the Gulf Medical University.

Results

Of the 125 medical graduates who were invited to participate, 65 completed the survey, giving a response rate of 52%. The respondents were aged between 27 and 32 years, with an average age of 29.3 years. A total of 55% of the respondents were female. As shown in Figure 1, 32% of the respondents were based in the UAE while the rest were in other countries. Of all the respondents, 32% were working as general physicians and the rest were specialising within different disciplines.

Regarding nutrition education in their undergraduate medical curriculum, 80% of the respondents reported receiving nutrition-related instruction in their pre-clinical years, while 50% reported receiving nutrition-related instruction in their clinical years. The courses in which nutrition-related topics were taught were community medicine

(49%), biochemistry (49%), medicine (31%), paediatrics (25%), physiology (14%) and surgery (11%). The respondents reported that the main teaching/learning methods adopted were in a lecture and case-based discussion format.

Nutrition education for doctors was perceived as ‘very important’ by 80%, ‘fairly important’ by 18.5% and ‘not so important’ by 1.5% of the respondents [Figure 2]. The respondents mentioned using nutrition-related knowledge in their clinical practice ‘all the time’ (21.5%), ‘often’ (41.5%), ‘sometimes’ (20%) and ‘rarely’ (4.5%). Most of the respondents (78.5%) felt that they had not received adequate nutrition instruction in relation to their past or present professional work [Figure 3]. There were no significant differences in the perceptions reported between the different groups regarding the importance of nutrition education, the utilisation of nutrition-related knowledge or the adequacy of nutrition instruction received.

The main areas where the respondents identified requiring more instruction were in the clinical nutrition (45%), nutrition in primary care settings (40%) and evidence-based nutrition (32%) categories [Figure 4].

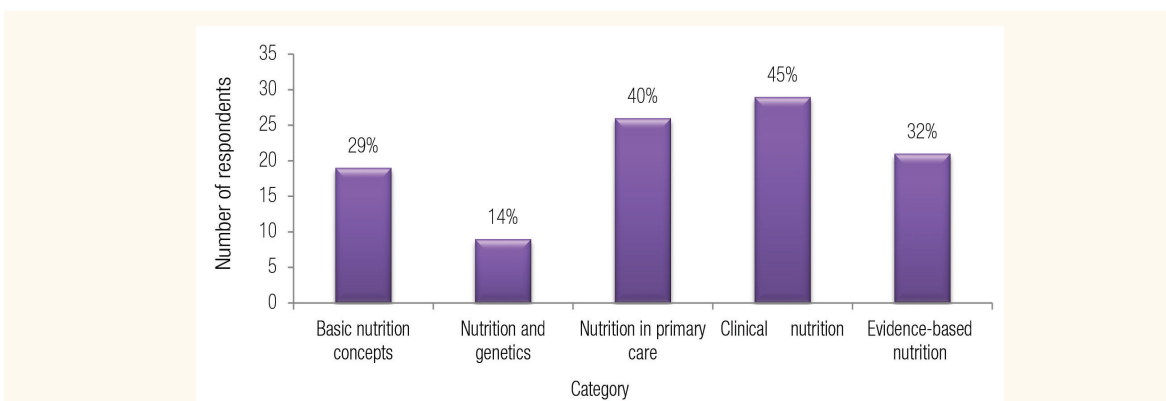


Figure 4: Categories of nutrition-related education identified by the survey respondents as requiring more instruction (N = 65). The respondents were all graduates of the Gulf Medical University in Ajman, United Arab Emirates.

There were only three open-ended responses within this section, all of which mentioned the importance of nutrition knowledge for the personal health of medical students during their training.

Discussion

The emphasis on different aspects of education imparted to students is determined by each medical school's curriculum. Feedback from former students who are currently applying the knowledge and skills learnt in their programmes is valuable for improving curricula.¹¹ This study attempted to study graduate perceptions regarding nutrition education in the curriculum of the Gulf Medical University in Ajman.

As the medical graduates were practicing in many different locations, it was necessary for the survey to be conducted online. Although the response rate was low, this was expected since completing the survey was completely voluntary, anonymous and there was no incentive to participate other than goodwill. The disciplines and the teaching/learning methods identified by the respondents corresponded well with the courses and instructional methods that were used in their undergraduate medical curriculum.

Nutrition education in the medical curriculum was perceived as 'very important' by most of the respondents and the majority mentioned using nutrition-related knowledge 'often' or 'all the time'. However, the majority of the respondents felt that they had not received adequate nutrition instruction in relation to their past or present work. This finding, though disturbing, is not unexpected. A study from the USA also found that a large number of resident physicians (62%) reported deficits in their nutrition knowledge, although they perceived nutrition counselling as a priority.¹² A study by Wynn *et al.* reported that 58.1% of the surveyed Canadian physicians believed that more patients would benefit from nutrition counselling, even though 82.3% found that their formal nutrition training in medical school had been inadequate.¹³ In Saudi Arabia, 72.9% of physicians in one study had poor nutrition knowledge despite the fact that 77.8% perceived nutrition counselling and management to be important.¹⁴

As most respondents in the current study felt that nutrition education was very important and mentioned using their nutrition-related knowledge often or all the time, while also perceiving their instruction in medical school to be inadequate, it may be assumed that they made up for the deficits in their knowledge by self-learning.¹⁵ No differences in perceptions regarding the importance or adequacy of nutrition education were seen between the genders or the other groups (general

physicians *versus* specialists and those working in the UAE *versus* those elsewhere). This is similar to observations from a study carried out by Mihalynuk *et al.* in the USA.¹⁶

The participants in the current survey had been taught in a traditional discipline-based undergraduate medical curriculum. The courses taught in the pre-clinical years included anatomy; physiology; biochemistry; pathology, microbiology; pharmacology; forensics, and community medicine. In their clinical years, participants took the following courses: medicine and allied specialties; surgery and allied specialties; paediatrics; obstetrics and gynaecology; otorhinolaryngology, and ophthalmology. The categories which were identified as requiring more instruction included clinical nutrition, nutrition in primary care settings and evidence-based nutrition. While clinical nutrition is taught mainly in the clinical years, nutrition in primary care and evidence-based nutrition are taught during the pre-clinical years in preventative medicine and subsequently reinforced during clinical postings. The categories identified in the current study as inadequate are similar to those reported by medical students in the USA, where the lowest self-reported proficiencies were in nutrition and disease management, micronutrients and alternative and complementary medicine.¹⁶ One probable reason for this inadequate instruction in nutrition topics could be the fact that most nutrition-related teaching takes place in the pre-clinical years. Suggestions for improving nutrition education in the undergraduate medical curriculum include vertical integration into the clinical years and an emphasis on nutritional assessment and support.¹⁷

This study is limited by the methodology, as data were gathered from an online survey and all conclusions were based on self-reported data. There may have been a selection bias among the respondents, with a greater number of responses from graduates who were more motivated to improve nutrition education, since the purpose of the survey was mentioned to be for medical education research and curriculum improvement. Furthermore, this study was carried out among graduates from a single university and the results, though similar to those from other parts of the world, may not be representative of other medical schools in the UAE or the region. Similar studies in other UAE or Arabian Gulf medical schools are warranted.

Conclusion

Most of the surveyed Gulf Medical University graduates perceived nutrition education to be very important for doctors and reported that more

nutrition education is needed in the undergraduate medical curriculum. In particular, participants were of the opinion that further instruction is especially required in the areas of clinical nutrition, nutrition in primary care settings and evidence-based nutrition. Feedback from graduates, who are now applying the knowledge and skills learnt during the curriculum, can be a valuable resource for identifying areas requiring curricular improvement.

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CONFLICT OF INTEREST

The authors report no conflicts of interest.

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