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ORIGINAL RESEARCH

Assessment of knowledge, attitudes and practices about public health nutrition among students of the University of Medicine in Tirana, Albania

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Abstract

Aim: the aim of this survey was twofold: (i): to assess medical students' knowledge, attitudes and practices regarding nutrition in general, in order to identify their level of competences in the field of nutrition which will be useful in their future role of providers/health care professionals, and; (ii) to assess the knowledge, attitudes and practices regarding the discipline of public health nutrition in order to identify the needs for improving the curriculum of this subject in all the branches of the University of Medicine in Tirana.

Methods: A cross-sectional study was conducted in June-July 2013 including a representative sample of 347 students at the University of Medicine in Tirana, Albania (61% females and 39% males; overall mean age: 23±2 years; response rate: 87%). A nutritional questionnaire, adopted according to the models used in previous international studies, was used to assess the level of knowledge, attitudes and practices among the university students.

Results: Overall, about one third of the students was not satisfied with the quality and quantity of nutritional education and demanded a more scientifically rigorous curriculum. In general, students' knowledge about infant feeding practices was adequate. However, there were gaps in the students' knowledge regarding the commencement of breastfeeding, or the duration of exclusive breast-feeding. Furthermore, there was evidence of an insufficient level of knowledge among students regarding diet and nutrition in general and their health impact, especially on development and prevention of chronic diseases.

Conclusion: This survey identified significant gaps in the current curriculum of public health nutrition at the University of Medicine in Tirana. Our findings suggest the need for intervention programs to improve both the quantitative and the qualitative aspects of nutrition curricula in all the branches of the University of Medicine Tirana, in accordance with the professional expectations of this teaching institution, as well as the urge for a movement towards a more integrated curriculum and problem-based learning approach.

Keywords: Albania, diet, knowledge, nutrition, students, university of medicine.

Introduction

It is argued that the amount of nutritional education in the teaching curricula of different medical schools remains inadequate and does not meet the needs of this important area of health sciences (1,2). Hence, many studies show that family physicians generally have little training in nutrition (3-5). Furthermore, several studies have shown that the vast majority of medical students and incoming interns are dissatisfied with their education in medical nutrition and feel unprepared to counsel patients on nutritional topics (6-8). Therefore, it is largely recognized that there is a critical need for improvements of teaching programs related to nutrition in medical schools and public health schools along with an increased education of the general population at large (9-11).

Public health nutrition is a discipline introduced already in all branches of the University of Medicine in Tirana, the Albanian capital. However, there is no scientific evidence regarding the level of attitudes and knowledge in this field among the students at all levels and branches of this teaching institution in Tirana, which is the only Medical University in Albania.

In this context, the aim of this survey was twofold: (i): to assess medical students' knowledge, attitudes and practices regarding nutrition in general, in order to identify their level of competences in the field of nutrition which will be useful in their future role of providers/health care professionals, and; (ii) to assess the knowledge, attitudes and practices regarding the discipline of public health nutrition in order to identify the needs for improving the curriculum of this subject in all the branches of the University of Medicine in Tirana.

Methods

A cross-sectional study was conducted in June-July 2013 including a representative sample of 347 students at the University of Medicine in Tirana, the capital of Albania.

Study population

The study population consisted of a simple random sample of 347 students (out of 400 invited; response rate: 86.7%) of the University of Medicine in Tirana pertinent to the following branches: Medicine (26.8%), Nursing (32.9%), Pharmacy (21.9%) and Dentistry (18.4%). The sampling frame consisted of a list of all students who had undertaken a course on public health nutrition (280 medical students; 110 dentistry students; 108 pharmacy students; 312 nursing students). The response rate was somehow lower among the medical students (81.5%) compared with students from the other branches. On the other hand, the overall response rate was similar among male and female students.

Data collection

A nutritional questionnaire, adopted according to the models used in previous international studies, was used to assess the level of knowledge, attitudes and practices among the university students.

The first part of the questionnaire concerned the attitudes of the students about nutritional education in their respective faculties/schools. The attitudes were measured by means of an indicative scale from 1 to 5 regarding students' concordance with several statements (1= strongly disagree; 5= strongly agree) (7).

The second part of the questionnaire concerned the level of knowledge of the students about nutrition in general (4,5).

Data analysis

SPSS (Statistical Package for Social Sciences) version 19.0 was used for data analysis. Data were presented as frequency tables (for categorical variables) and as measures of central tendency (mean scores) [for numerical variables].

Results

Overall, the survey sample included 136 (39.2%) male students and 211 (60.8%) female students (overall mean age: 22.8±2.1 years).

Students' attitudes about their education in the discipline of nutrition

Overall, the students were somewhat satisfied with the quantity (mean score: 3.3; range from 1 [lowest] to 5 [highest]) and quality (mean score: 3.2) of the nutritional education in the course of their studies (Table 1). Students reported that more time should have been dedicated to the topic of nutrition at the University of Medicine in Tirana (overall mean score: 3.5), especially including more material relevant to the personal health and wellbeing (mean score: 3.8). Conversely, students were quite neutral regarding the scientific rigor of the teaching curriculum (overall mean score: 2.9).

Table 1. Students' attitudes about their education in the discipline of nutrition

Students' attitudes	Total (N=347)	Medicine (N=93)	Dentistry (N=64)	Pharmacy (N=76)	Nursing (N=114)
I am satisfied with the <u>quantity</u> of my nutrition education.	3.26	2.69	2.81	3.47	3.83
I am satisfied with the <u>quality</u> of my nutrition education.	3.18	2.71	2.84	3.22	3.71
My medical school nutrition curriculum should have had more time specifically dedicated to the topic of nutrition (independent of organ system-based studies).	3.46	3.67	3.42	3.70	3.17
My medical school nutrition curriculum should have had more nutrition content formally integrated into the organ system-based courses.	3.38	3.91	3.36	3.21	3.07
My medical school nutrition curriculum should have included more online materials available for independent study.	2.90	3.32	2.52	3.05	2.67
My medical school nutrition curriculum should have included more material relevant to my personal health and wellbeing.	3.80	4.31	3.81	3.37	3.68
My medical school nutrition curriculum should have been more scientifically rigorous.	2.89	3.32	3.39	2.58	2.46

Students of the Faculty of Medicine were the most unsatisfied group with regard to the quantity (mean score: 2.7) and quality (mean score: 2.7) of the information obtained in the nutrition course, considering that:

- More time should be dedicated to the topic of nutrition in the course of their studies (mean score: 3.7);
- More nutrition content should be formally integrated into the organ system-based courses (mean score: 3.9);
- The curriculum should include more material relevant to personal health and well-being (4.3);

- In addition, medical students felt that the teaching curriculum should be more scientifically rigorous (mean score: 3.3) [Table 1].

However, almost similar attitudes were encountered among the students of the Faculty of Dentistry, but their mean scores were slightly higher compared to the students of the Faculty of Medicine.

Unlike the students of the Faculty of Medicine and Dentistry, students of the Faculty of Pharmacy appeared to be more satisfied with the quantity (mean score: 3.5) and the quality (mean score: 3.2) of the nutritional education; nonetheless, they considered that more time should be dedicated to the topic of nutrition in the course curriculum (mean score: 3.7), but were generally satisfied regarding the scientific rigor of nutrition curriculum (mean score: 2.6). Conversely, students of the Faculty of Nursing were the most satisfied group with regard to the quantity (mean score: 3.8) and quality (mean score: 3.7) of the nutritional education in their branch. Their most obvious demand, however, was that more material relevant to personal health and wellbeing should be included in the teaching curriculum (mean score: 3.7) [Table 1].

Overall, about one third of the students was not satisfied with the quality and quantity of nutritional education and demanded a more scientifically rigorous curriculum.

Three out of four students demanded a more practical and useful curriculum regarding personal health and well-being; more than half of the students demanded an integrated curriculum into the organ system-based; and half of the students suggested that more time should be dedicated to the teaching curriculum independent of organ system-based studies (Table 1).

Students' knowledge about infant feeding practices

Overall, the level of students' knowledge about infant feeding practices was satisfactory, as the percentage of correct answers for every question was in the range from 70%-92% (Table 2).

Table 2. Students' knowledge on infant feeding practices

Item	Correct	Wrong	Don't know
According to WHO, the optimal duration for breastfeeding an infant is a minimum of twelve months.	71.8%	21.3%	6.9%
Infant formula contains all ingredients found in human breast milk.	1.4%	97.1%	1.4%
Infants consuming breast milk have fewer ear infections than infants consuming formula.	91.9%	4.6%	3.5%

The percentage of wrong answers was higher among the students of the Faculty of Pharmacy, followed by the students of the Faculty of Dentistry (29.7% and 7.8% respectively).

About 82% of the students knew “*the most appropriate age to introduce other foods in the infant's diet*”, whereas one out of three students of the Faculty of Dentistry gave a wrong answer (data not shown).

Regarding the “*commencement of breastfeeding*”, 70% of the students did not know the recommended initiation of breastfeeding, which was especially apparent for students of the Faculty of Nursing and Medicine (80% and 76%, respectively), although the nutrition curriculum of these two faculties regarding infant feeding practices is much more expanded than the other two faculties (data not shown in the tables).

Most of the students (about 77%) stated that exclusive breast feeding is important because “*breast milk is the ideal food*”, 10% of the students considered that “*breastfeeding creates a*

physical/spiritual bond between mother and baby”, and 9% of the students believed that “breastfeeding protects the mother from pregnancy”.

Regarding the duration of exclusive breastfeeding, the opinion of the students was divided between the period of 6-9 months, and only 1.3% of the students considered that “breastfeeding should not be extended more than 1 month” (not shown).

Students’ knowledge on the health impact of diet and nutrients

Regarding the questions that aimed at assessing the students’ general knowledge about the health impact of diet and nutrients, students of the Faculty of Medicine, generally, exhibited the highest level of knowledge compared to the other branches (Table 3).

Especially, medical students reported correctly on the following: “the nutrient that helps prevent thrombosis” (100%); “the nutrient closely related to the prevention of neural tube defects” (97%); “zinc is not an antioxidant” (87%); and “potassium has protective effect against hypertension” (75%). However, none of them knew that “excess proteins promote loss of Ca”; “Albanians are advised not to consume more than 30% fat” (8%); and “fruits and vegetables have a preventive role in the development of some types of cancer” (10%) [Table 3].

Table 3. Students’ knowledge about diet and health

Item	Total*	Medicine*	Dentistry*	Pharmacy*	Nursing*
A nutrient believed to help prevent thrombosis is:	omega-3 fat	100	28.1	50	28.9
Excess of which nutrient may increase body calcium loss?	proteins	0	4.7	7.9	14
What is the type of dietary fiber helpful in lowering the blood cholesterol level?	soluble fiber	67.7	42.2	28.9	15.8
The major type of fat in olive oil:	monounsaturated fat	54.8	31.2	22.4	16.7
Compared with unprocessed vegetable oil, hydrogenated fats contain:	more trans fats	37.6	9.4	42.1	16.7
The nutrient is protective against hypertension	potassium	75.3	14.1	44.7	45.6
If a person habitually consumes 10 tablets a day of vitamin mineral supplements, which nutrient is least likely to cause toxicity	vitamin E	66.7	21.9	39.5	24.6
The most concentrated source of vitamin B12 is	Meat	43	6.2	18.4	31.6
Which substance raises the blood HDL-cholesterol level	alcohol	41.9	9.4	17.1	22.8
Nutrition Recommendations for Albanian recommends that the diet should contain the following percentage of energy as fat	under 30% of daily energy	7.5	9.4	25	21.9
Nutritional recommendations for Albanian recommends that the diet should contain the following type and percentage of salt	no more than 6 g iodized salt	44.1	3.1	19.7	37.7
A type of food believed to have a preventive effect on varioustypes of cancer is	Fruits and vegetables	9.7	34.4	57.9	41.2
The number of kilocalories in one gram of fat is	9 kkal	100	96.9	96.1	94.7
Which of the following is not an antioxidant nutrient	Zinc	86	46.9	80.3	48.2
The nutrient strongly associated with the prevention of neural tube defects is	Folate	96.8	73.4	77.6	71.1

* Percentages of correct answers.

Discussion

Our findings indicate that students of the University of Medicine in Tirana are not sufficiently satisfied with the quantity and quality of the knowledge obtained on public health nutrition, demanding more time to be dedicated to the topic of nutrition in the undergraduate curriculum including especially more material relevant to personal health and wellbeing. Such requirements and demands were more pronounced among students of the Faculty of Medicine and Dentistry.

Students' knowledge about infant feeding practices were relatively satisfactory among the students of the Faculty of Medicine, and less so among students of the other faculties. However, there were also apparent gaps in the knowledge of medical students regarding the commencement of breastfeeding, or the duration of exclusive breastfeeding. Our findings in this regard are compatible with previous reports from studies conducted elsewhere (12-14).

Regarding students' general knowledge about diet and its impact on the development or prevention and treatment of diseases, especially of chronic diseases, it was often encountered an overrated concept about the role/influence of the dietary fat and individual health, suggesting insufficient knowledge among students regarding the specific role and impact of carbohydrates and proteins. Similar findings have been previously reported in the UK (13,14), Canada (15,16) and the USA (17).

On the other hand, students included in the current survey did not have updated information regarding the "*Albanian Recommendations for a Healthy Nutrition*", which points to the need for case-based teaching, and updated scientific rigor.

Overall, the current survey identified gaps in the current curriculum of public health nutrition which suggests the need for appropriate changes and amendments to the curriculum in all the branches of the University of Medicine in Tirana (General Medicine, Public Health, Nursing, Pharmacy and Dentistry). From this perspective, our study provides useful baseline information which should be eventually used to close the knowledge and competence gaps in the current teaching and training programs offered by the University of Medicine in Tirana.

In addition, the assessment of knowledge, attitudes and practices of the students on nutritional aspects in general is a basic precondition for understanding their competences and roles as future health care providers and health professionals, hence, evaluating healthy nutrition as an important element in the prevention and treatment of a number of non-communicable diseases which are currently highly prevalent in Albania (5,18). From this point of view, our study makes a useful contribution in the Albanian context.

In conclusion, our study suggests the need for intervention programs to improve both the quantitative and the qualitative aspects of nutrition curricula in all the branches of the University of Medicine Tirana, in accordance with the professional expectations of this teaching institution, as well as the urge for a movement towards a more integrated curriculum and problem-based learning approach.

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Conflicts of interest: none declared.

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