

Nutritional knowledge, food-related attitudes and behaviours, and clinical approach of food-related diseases of primary care health professionals

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ABSTRACT

Background: In Portugal, just like in other developed countries, the main causes of mortality and morbidity are nutrition-related diseases. Primary health care professionals have to face a large number of patients with nutritional and dietary pathologies as well as to deal with the population's growing interest in such issues. Lack of time and scant nutritional knowledge are the main constraints in these professionals practice.

Objective: This study sought to assess the nutritional knowledge, food-related attitudes and behaviours, and clinical approach of food-related diseases of primary health care professionals.

Methods: Back in 2006, a descriptive cross-sectional design was used in a sample of 497 family doctors and nurses. A 35 questions self-answered questionnaire was used. Statistical analysis was made using SPSS 16.0.

Results: Response rate was 80%. 74% of the inquired never had any training in nutrition issues, and training needs are quite high in almost all nutrition topics. More than half have 21-50% of overweight patients. Main reasons not to handle nutritional and dietary clinical situations are lack of time (63%), frustrating counselling (62%) and scant knowledge (43%). 61% feel they do not know enough to properly advise their patients but 97% do give nutritional advice in their practice. Their nutritional knowledge is globally weak but their eating behaviours seem reasonably good. 97% believe the Health Centres must consider new approaches to this kind of health problems, including the existence of nutrition specialized professionals, such as nutritionists.

Conclusions: The evidence shows a high necessity of post-graduated training in basic and specialized nutrition issues for primary health care professionals – more courses available and better access to them. There is also an urgent need for the Primary Health Care Services to adopt new intervention strategies in this field, including the use of nutrition specialized professionals in the Health Centres.

KEY WORDS: Nutritional knowledge, food-related attitudes and behaviours, clinical approach of food-related diseases, primary health care professionals

Introduction

In May 1994, the American Dietetic Association made the following position statement: “The public is increasingly nutrition conscious and actively seeks reliable sources of nutrition education. Physicians with appropriate training in nutrition can and should be a powerful force in providing accurate nutrition information and quality health care. As physician educators, dietetics professionals can facilitate this outcome. Appropriate use of nutrition resources and professionals will efficiently and effectively maintain or improve the nutritional status of the public and, ultimately, the health of our nation”¹.

Today, the relationship between nutrition and health has been firmly established² being nutrition-related diseases such as coronary heart disease (CHD), stroke, hypertension, diabetes mellitus and certain cancers the leading causes of morbidity and mortality in the United States and most developed western societies.³ Also, professionals in primary health care have to face a large number of patients with pathologies arising out of nutritional and dietary disorders as well as cope with society’s growing interest in such issues.⁴ Therefore, primary care physicians have the potential to decrease morbidity and mortality for many chronic diseases if they provide effective nutrition counselling, which, given the time constraints of primary care practice, needs to be brief, be part of an organized office system and refer appropriate patients to qualified nutrition professionals to be effective. In other words, office visits to primary care physicians’ offices could be an effective method to provide nutrition assessment and counselling and impact on the morbidity and mortality of these leading causes of death. In fact, the effectiveness of nutrition counselling in changing dietary habits in primary care settings is well documented in numerous clinical trials.³

Disease prevention and health promotion are important tasks in the daily practice of all General Practitioners (GPs), because two-thirds of the population visit their GP one or more times each year, and 90% visit at least once every five years. Therefore, GPs are in an excellent position to administer age- and sex-specific preventive and health promotion packages opportunistically – that is, when patients visit them for any reason. GPs also have a good potential to foster healthy behaviours. Particularly, GPs can promote the benefits of good nutrition to patients, advise them about desirable dietary practices for specific conditions, and refer them to a trained nutrition specialist for more detailed dietary counselling.⁵

In fact, an evaluation of changes to health promotion in primary care found that both doctors and nurses had a positive attitude towards health promotion activities for the prevention of CHD. Also, in a study of weight management in UK general practice, 98% of responding GPs believed that it was part of their role to counsel patients about weight problems. Work in the United States has found that both doctors and nurses have favourable attitudes to giving dietary advice.⁶

In conclusion, primary care is the first level of contact between the individual and the National Health System (NHS), and as this integrates the promotion, prevention, treatment, and rehabilitation of health problems, eating habits and nutrition have to be included in the activities carried out by health care professionals in the global treatment of the individual and the community’s health care problems.⁷

The literature regarding of primary care staff towards dietary interventions is not conclusive. Although some surveys report a positive attitude towards such interventions, others report the existence of significant barriers that limit their involvement.⁶

Barriers for health care professionals to providing nutrition education include misconceptions and stereotypes about older adults and about their nutritional concerns; lack of attention to and lack of funding for older adult educational programs; and difficulties recruiting older learners.⁸ Also, a work suggests that GPs in particular lack the inclination to provide dietary advice. Commonly cited barriers include lack of time, lack of nutritional knowledge and lack of confidence, poor patient compliance and lack of teaching materials.⁶ Besides, when GPs and nurses do not have the time, knowledge, or skills to advise their patients, it is not easy to refer them to a professional qualified in nutrition for more detailed dietary counselling.⁵ Moreover, UK surveys reveal that there are important gaps in the nutritional knowledge of both doctors and nurses. These studies reported that knowledge of nutritional concepts was sound, but translation of these into practical dietary advice is more difficult.⁶

Also, as it is well known, consumers are exposed to nutrition information from a variety of sources. New questions arise, and family doctors are often called upon to answer them. Answering these questions is not always easy for family doctors, because eating behaviour is the result of a complex interaction of biological, economic, sociological, and psychological factors.²

So, the evidence presented paints a picture of a lack of conviction of the role of nutrition in prevention activities, inconsistent knowledge levels and levels of involvement in prevention activities that are less than ideal. It is likely that a significant change in these factors is necessary if the potential of nutrition to contribute to disease prevention is to be realized.⁶ Also, if health professionals are to continue to be expected to promote healthy eating messages there will need to be a more systematic approach to their training about nutrition.⁹ Therefore, the need for improved nutrition training of physicians has never been more evident.¹⁰

Moreover, nutritional advice from doctors and other health workers is held in high regard by the general public. It is important, therefore, to ensure the advice given is sound and safe.¹¹

It is important to take into account that, as time is such an important factor in primary care and lack of time is cited as a reason for non-attendance at nutrition training sessions, it should be noted that Weinsier believes that it is unnecessary to provide hours of teaching to fulfil the aims of communicating the key principles and raising awareness. The aim is not to produce a nutritional expert but rather to equip practitioners with a level of knowledge and skills useful in a primary care setting. Therefore, finding the right mode of deliver of nutrition training to professionals working in primary care will help to overcome the commonly acknowledged barriers to participation.⁶

The aim of the present work was to assess the nutritional knowledge, food-related attitudes and behaviours, and clinical approach of food-related diseases of primary health care professionals in the middle region of Portugal.

Methods

In 2006, the Regional Health Administration of the Middle Region of Portugal, through its Public Health Department, carried out a descriptive cross-sectional study to assess the level of training in nutrition issues, the extension of the nutritional knowledge, food and nutrition-related attitudes and beliefs, as well as the ability of primary health care professionals, Family Doctors (FD) and nurses, to cope with clinical and community health situations requiring some kind of nutrition knowledge and/or intervention.

A systematic randomized sample of 20%, from a total universe of 3 157 FD and nurses from 120 Health Centres, was considered for the study (630 subjects).

A previously developed and validated structured self-answered questionnaire was applied to the subjects at their workplace. The questionnaire consisted of 35 open and closed questions concerning aspects such as: demographic and professional data (4 questions), training in nutrition (6 questions); clinical approach issues (10 questions), items concerning personal eating behaviours (3 questions) and perceived expertise on nutrition topics and beliefs (2 questions).

Questions tried to measure things like the amount, quality and needs of nutrition training, investigate professionals' options and difficulties to deal with dietary and nutritional health problems, perceived own level of general nutrition knowledge and wholesomeness of own diet. Attitudinal questions were scored either on a five-point or three-point *Likert scale*. Other questions were to be answered on a multiple-choice basis, by picking one or more options amongst the ones available. Very few questions were of the open type.

The statistical analysis was made using the Statistical Package for Social Sciences (SPSS 16.0). Descriptive statistical methods included frequencies and valid percentages.

Results

Four hundred ninety-seven valid questionnaires were analyzed (response rate was 80%).

Sample characterization

The main characteristics of the sample are presented in the table below:

Table 1 – Sample characterization

N = 497								
Family Doctors	Nurses	Male	Female	Age (yrs)			Graduation	
				Max	Min	Mean	> 20 yrs	< 20 yrs
51.1 %	48.9 %	30.6 %	69.4 %	67	23	45	50.5 %	49.5 %

Training in nutrition issues

The table below shows the percentage of individuals who have had training in nutrition issues, how much time of training they have had and the main reasons for those who didn't have any of this kind of training.

Table 2 – Training in nutrition issues

With training		Without training	
25.7%		74%	
< 4 hrs	4 – 20 hrs	No opportunity	No training courses available
45.2 %	32.5 %	45.7 %	15 %

From those who did have some kind of training, 40.9% say the training had much impact and 47.3% refer it had some impact on their professional practice.

As to the training characteristics, 88.5% consider it insufficient and look forward to getting some more training on nutrition topics; 73.1% say the training they had does not make them feel comfortable about dealing with these issues. Also, despite the training they have received, 61.5% believe that the intervention of a specialized professional, namely a nutritionist, is important.

The table below shows the more relevant nutrition-related training needs felt by these health professionals.

Table 3 – Training needs

Much or some necessity of training in...	
Basic nutrition knowledge	74.5 %
Diabetes, obesity, blood hypertension	91.2 %
Life cycle nutrition	90.7 %
Obesity treatment and dietetics	92.3 %
Motivational strategies	94 %
Nutritional assessment	88.3 %
Artificial feeding	76.9 %

Clinical approach to nutrition-related diseases

More than half of the respondents (51%) refer that 21-50% of their patients is overweight and 26.7% refer that they see more than 20 patients with nutrition-related problems, per week.

The reasons these professionals point out as barriers to their clinical performance about food-related problems are listed in the table below:

Table 4 – Barriers to dealing with nutrition-related health problems

Reasons	Family Doctors	FD + Nurses
Lack of training	51.3 %	42.5 %
Lack of time	75 %	62.8 %
Lack of incentives	42 %	43.9 %
Diagnose difficulties	3.7 %	8.5 %
Frustration about nutrition counselling	72.2 %	62.4 %

Besides, about 61% of the respondents feel that they don't know enough about nutrition issues and near half of them believe they cannot advise their patients properly on these issues.

Yet, the subjects had to indicate their clinical options when they have to deal with over weighted (BMI > 25) patients. Results are shown in the table below.

Table 5 – Options to deal with over weighted patients

Options	
Advise to loose weight as soon as possible	17.7 %
Refer to a nutritionist	35.6 %
Refer to a nutritionist in special cases	37.4 %
Try to motivate for the practise of physical activity	94.3 %
Give nutritional advice	97.1 %
Try to show the importance of doing something about the weight	85.7 %
Advise not to consume some foods and drinks	86.9 %
Prescribe a pre-established diet immediately	8.4 %
Refer to bariatric surgery immediately	18.8 %

Other results show that only 15.7% of these health professionals believe that the Health Centres (HC) are capable of dealing with this kind of health issues, but 97.7% think that it is important to have nutrition specialists (nutritionists) in these Centres.

About 97% of all health professionals included in this sample consider that it is important for the Health Centres to adopt new approaches on this matter.

Nutrition knowledge

Some questions contained sentences related with general and basic nutrition knowledge and personal beliefs about which the inquired had to express their level of agreement. The next table shows those results.

Table 6 – General and basic nutrition knowledge and beliefs – some sentences

Sentences	Agree	Disagree	Do not know	Do not agree or disagree
Bread is one of the most fating foods	21.1 %	77.3 %	1.2 %	-
Peanut oil is good for cooking	56.4 %	21.7 %	21.7 %	-
Fats provide 7 kcal/g	14.3 %	31.9 %	53.2 %	-
Ethanol provides more calories than carbohydrates	52.5 %	20.8 %	26.5 %	-
The alcohol used on alcoholic drinks is ethanol	69.3 %	25.8 %	4.2 %	-
Olive oil is rich in PUFA	67.9 %	24.4 %	7.5 %	-
Cakes and biscuits are rich in <i>trans</i> FA	39.8 %	13.4 %	46.4 %	-
Someone with an BMI = 30 is obese	75.6 %	12.9 %	11.1 %	-
The Mediterranean Diet is moderate and allows occasional excesses	65.2 %	16.8 %	17.6 %	-
Starch is an important complex carbohydrate	81.7 %	7.5 %	10.4 %	-
It is enough to eat vegetables in the soup	16.4 %	74.6 %	-	25.2 %
More than 5g/d of salt is bad for health	92.4 %	1.6 %	-	5.8 %
Sugar is a carbohydrate	84.1 %	12.6 %	-	2.8 %
Vegetables seasoned with olive oil have cholesterol	24.8 %	58.5 %	-	16.2 %

The most relevant results, either for being too high or too low depending on the sentence, are in bold.

Food-related attitudes and behaviours

The subjects were asked to select, from a list of 12 options, the main criterion that influences their food choices. Results are shown below.

Table 7 – Food choices criteria

Options	
Family tradition and habits	23.8 %
Special nutritional needs	4.2 %
Established habits and routines	18 %
Preferred spouse/children foods	4.2 %
Food price	0.8 %
Food quality and hygienic condition	33.1 %
Food flavour	5.1 %
Food additives content	1.1 %
Food package and presentation	0.2 %
None in particular	5.3 %

Cultural, ethnic, religious	0.8 %
Marketing and publicity	2.1 %

Self-perception of food-related attitudes and behaviours was assessed using a frequency scale and its results are presented in table 8.

Table 8 – Food-related attitudes and behaviours

Options	Frequency of behaviour	%
Eat fried foods during the whole day	Never/few times	82.4 %
Use olive oil to season	Always/almost always	75.5 %
Take skin and all visible fats from the meat	Always/many times	80.4 %
Add salt to food	Never/few times	78.1 %
Eat pastry foods	Never/few times	67.3 %
Eat fruit every day	Always/many times	87.9 %
Eat soup every day	Always/many times	75.2 %
Eat vegetables as a complement	Always/many times	85.5 %
Take 1 - 2 glasses of milk or yogurts every day	Always/many times	82.6 %
Drink at least 1.5 L of water per day	Always/many times	50.6 %
Drink > 1 glass of water at lunch and at dinner	Always/many times	39.6 %
Have > 1 soft drink at lunch and at dinner	Never/few times	88.9 %
Try to choose healthier foods	Always/many times	89.1 %
Consider nutritional aspects of foods	Always/many times	65.5 %
Have breakfast	Always/many times	92.3 %
Only take 3 meals per day	Always/many times	68.1 %

Respondents were also asked to point out the three main barriers to a healthy eating, from a list of 13 options. Results are as follow.

Table 9 – Barriers to a healthy eating

Options	
Irregular work schedule	82.1 %
Not knowing how to cook	25.4 %
Busy life	77.4 %
High prices	37.6 %
Unusual and weird foods	5.1 %
Slower cooking	22.6 %
Lack of information on healthy eating	66.9 %

Not liking to cook	24.4 %
Not available at workplace canteen	52.3 %
Non appealing food	21.1 %
Limited cooking methods	14.4 %
Special conservation needs	7.0 %
Limited/not available at workplace	53.9 %

Discussion

Before any discussion is made, it is important to note that the Family Doctor is usually pointed as one of the main sources of nutritional information in many circumstances² and is in a very good position to promote desirable dietary practices for specific conditions to their patients and refer them to a trained nutrition specialist for more detailed dietary counselling.⁵ In fact, it is well reported that the public see primary care staff as credible and acceptable sources of lifestyle advice, including dietary advice⁶, and after the media, the source most often used.⁷

Although the literature regarding the attitude of primary care professionals towards dietary intervention is less conclusive⁶, the results obtained in this study show some relevant points worth being noted.

On one hand, it can be confirmed the high number of patients with nutrition-related health problems that are treated by these professionals⁴, as well as the difficulties that they feel to deal with those problems: scant nutrition knowledge, lack of time, lack of confidence in self ability, and frustrating nutrition counselling.^{5, 6, 7, 9} The lack of time seems particularly important and worthy of special consideration, because the time spent in nutrition counselling in primary care needs to be understood in the context of an average office visit lasting 10 to 16 minutes, making it usually less than five minutes per patient, with the average time being 1 minute.³

On the other hand, there is a high percentage of professionals who never had any training on nutrition issues, either because they never had the opportunity or due to unavailability of courses. For those who did have some kind of training, the results show, as reported before⁶, some dissatisfaction with its quality. Nevertheless, just like in other UK and USA studies⁶, a high percentage of them give nutritional advice to their patients, despite the little ability to handle different clinical scenarios that has been reported in some studies too.⁴ Considering the results of the nutrition knowledge and personal beliefs variables, similar to the ones of some previous studies^{6, 9, 11}, this kind of approach may be seen as somehow inappropriate.

Yet, despite those results, most of the inquired health professionals refer to have themselves quite healthy eating habits and behaviours.

Also remarkable is the opinion of almost all respondents about the Health Centres not being able and prepared to cope with nutrition-related diseases, as also referred in other studies where respondents do not believe that organizational support is in place¹⁴, strongly believing

that new approaches to these problems are needed, including the existence of specialized nutrition professionals (nutritionists or dieticians) in primary health care services. This seems particularly important because primary care is seen as an ideal setting to deliver opportunistic dietary advice.⁶

Conclusions

The evidence presented shows a picture of inconsistent levels of knowledge, leading to a high necessity of post-graduated training in basic and specialized nutrition issues, of health professionals in primary care. It is also evident that this lack of training is highly due to a scarce availability of specialized courses in this field, or a poor access to them. Some less than ideal levels of involvement in prevention activities can also be noted and should be incentivised.

It is likely that a significant change in these factors is necessary, if the potential of nutrition to contribute to disease prevention, at the primary care level, is to be achieved. It is highly recommended that activities, studies, and projects that lead to an improvement of the primary care physician's knowledge about nutrition are carried out in order to make this change happen.

It is, therefore, urgently necessary that Primary Health Care Services in Portugal have new intervention strategies on this concern, amongst which is the inclusion of specialized nutrition professionals in Health Centres.

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