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Consumers' knowledge, interest and attitude toward functional food in a Romanian population sample

Cunoștințele, interesul și atitudinea consumatorilor în privința alimentelor funcționale pe un eșantion din România

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Abstract

Background. The definition of "functional food" encompasses a wide variety of food containing biologically active components believed to reduce the risk of specific disease and promote overall health and well-being, but nowadays the term is widely used in food marketing and mistaken by consumers.

Aims. The goal of the present study was to evaluate the knowledge, interest and attitude on functional food among Romanian consumers. Also, we aimed to investigate if income level or education level affect knowledge and interest regarding functional foods.

Methods. Data were collected from an online questionnaire using Google Docs in Romania (n=265). The majority of the consumers who submitted the questionnaire were women (n=249), aged 20 to 24 (n=122) and reported higher education (n=229).

Results. Our study showed that high income consumers are more interested in functional foods even if they are not better informed in comparison with low income consumers. Also, the level of education does not influence the knowledge regarding functional foods. Furthermore, 243 out of 265 recognize functional foods as whole foods but confuse them with dietary supplements, medicine herbs or fortified food.

Conclusions. Based on our study, we can conclude that the interest in functional foods is influenced by income level and the knowledge about them is not linked with the level of education. Also, we have confirmed that there is much confusion among Romanian consumers regarding functional foods; therefore there is a need for further campaigns in order to educate and inform consumers.

Keywords: functional food, consumers, knowledge, attitude, interest.

Rezumat

Premize. Definiţia alimentelor funcţionale înglobează o varietate mare de alimente bogate în compuşi biologic activi, care se consideră că reduc riscul anumitor patologii şi îmbunătăţesc starea generală de sănătate. Actualmente acest termen este folosit frecvent în marketingul alimentar şi confundat de către consumatori.

Obiective. Studiul de faţă a avut ca obiectiv evaluarea cunoştinţelor, interesului şi a atitudinilor referitoare la alimentele funcţionale în rândul consumatorilor români. Un alt obiectiv a fost investigarea legăturii dintre nivelul educaţiei sau al venitului, în raport cu interesul şi cunoştinţele consumatorilor în ceea ce privesc alimentele funcţionale.

Metode. Datele au fost colectate prin intermediul unui chestionar utilizând Google Docs (n=265). Majoritatea consumatorilor care au completat chestionarul au fost de sex feminin (n=249), cu vârste cuprinse în 20-24 ani (n=122), cu studii superioare.

Rezultate. Studiul de faţă a aratat faptul că interesul faţă de alimentele funcţionale este mai crescut în rândul consumatorilor cu venituri mari, cu toate că această categorie de consumatori nu posedă cunoştinţe mai mari despre alimentele funcţionale, comparativ cu cei cu venituri mai mici. În plus, 243 din 265 respondenţi recunosc alimentele funcţionale, dar le confundă cu suplimentele alimentare, ierburile medicinale sau alimentele fortifiate.

Concluzii. Pe baza cercetării noastre, putem concluziona faptul că interesul consumatorilor vis-a vis de alimentele funcţionale este influenţat de venit, iar cunoştinţele despre alimentele funcţionale nu depind de nivelul de educaţie. Studiul de faţă a confirmat faptul că există confuzie în ceea ce priveşte alimentele funcţionale, inclusiv in rândul consumatorilor din ţara noastră, astfel că este nevoie de campanii de educare şi informare în rândul acestora..

Cuvinte cheie: alimente funcţionale, consumatori, atitudini, interes, cunoştinţe.

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Introduction

The term *functional food* is widely used as a marketing term, but there is no globally recognized definition. Even though all food is essentially functional as it has nutritional value, a food can be considered functional only if it provides an additional health benefit. It is not clearly defined which foods are considered functional. The Academy of Nutrition and Dietetics defines functional foods as follows: "Foods defined as whole foods along with fortified, enriched, or enhanced foods that have a potentially beneficial effect on health when consumed as part of a varied diet on a regular basis at effective levels". The European Commission defines functional foods as "A food that beneficially affects one or more target functions in the body, beyond adequate nutritional effects, in a way that is relevant to either an improved state of health and well-being and/or reduction of risk of disease, It is part of a normal food pattern. It is not a pill, a capsule or any form of dietary supplement" (Krowe & Francis, 2013).

Japan was the first country to promote functional food and introduced a health-related food category named FOSHU (Food for Specified Health Uses) (Menrad, 2003). Consumer interest in functional foods and their health benefits has increased lately (Mollet & Rowland, 2002). In the last decades, lifestyle changes have led to a higher incidence of cardiovascular disease, hypertension and diabetes. More and more people believe that foods can contribute to their health, by improving their well-being and preventing certain diseases. A balanced diet is essential for optimal growth and development (Pang et al., 2012).

The attitude towards functional food depends on the consumers' knowledge of the health benefits provided (Siro et al., 2008). Results of surveys in European countries show consumers are often confused with regards to the term "functional foods" (Menrad, 2003).

The acceptance and consumption of functional foods determine market success. Sales of functional foods and beverages reached over $118 billion in the US in 2012, followed by Japan, England and Germany (Sloan, 2014). Functional foods are popular in Netherlands, England, France, Germany (Sparke & Menrad, 2009) and Switzerland (Siegrost, 2008). There is a high demand for functional foods in these countries, especially among the higher income population (Siro et al., 2008).

Objectives

The main goal of the present study was to evaluate the knowledge of, interest in and attitude towards functional foods among Romanian consumers. Data about consumers' knowledge, interest and attitude toward functional food is lacking in our country. As far as we know, little research has evaluated the knowledge of, interest in and attitude toward functional food among Romanian consumers.

Hypothesis

We hypothesized that knowledge of functional foods depends on the income and education level. Also, this study will investigate whether there is a link between income and the interest in functional foods.

Material and methods

Reasearch protocol

According to the Helsinki Declaration, the Amsterdam Protocol and Directive 86/609/EEC, we obtained the approval of the Ethics Commission of the "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca for this study.

a) Period and place of the research

The study was conducted in Romania during May - September 2014 and was distributed on social networking sites.

b) Subjects and groups

Two hundred and sixty-five people completed the questionnaire (n=265). Ninety-four percent (n=249) of the respondents were females and six percent (n=16) were males. Participants who were younger than 19 years old were excluded from the present study (n=8). Before completing the survey, all the participants received written information about the study goal and design and gave their informed consent regarding the data use. Participants received no previous information regarding functional foods. The sample characteristics of the consumers participating in the study are presented in Table I.

Table I

Sample characteristics.

Sample characteristics	Total	%
n	265	
Gender		
Male	16	6
Female	249	94
Age (years)		
20-24	122	46
25-30	84	31.6
31-40	48	18.1
41-50	9	3.3
> 50	2	0.7
Education		
Higher education	229	86.4
High school	29	10.9
Secondary education	7	2.6
Other education	–	–

c) Tests applied

Data were collected based on an anonymous, self-administered online questionnaire using Google Docs. The consumers filled in a 10 multiple choice or one choice questionnaire designed by the research team. The questionnaire collected data regarding the participants' age, sex, and education. Questions regarding the monthly income and the average amount of money spent on food every month were also asked. Participants were asked about functional foods, food choices when doing their grocery shopping, interest in reading food labels when shopping, in order to assess their knowledge, interest and attitude towards functional foods, as follows:

- What is the definition of functional foods?
- Which of the following foods do you believe is functional?
- What are the benefits of functional foods?
- Which of the following foods do you choose when doing grocery shopping?
- Do you read food labels while doing your grocery shopping?
- How much money do you spend on food every month?

d) Statistical processing

Data were collected in a Microsoft Office Excel work-

sheet. Data were analyzed using Microsoft Excel and EpiInfo. For data analysis, we considered high income a monthly income higher than 451.72 EUR, which was higher than the average monthly income in 2014 in Romania (1).

Higher education and high income were the independent variables, and knowledge of, interest in and attitude toward functional food were the dependent variables. The Chi square test (p) was used to calculate whether there was a link between an independent variable and a dependent variable. Differences were considered statistically significant when $p < 0.05$.

Results

The financial profile regarding monthly income and the amount of money spent on food each month are presented in Table II.

Table II
Financial profile.

Financial profile	Total	%
n	265	
Monthly income (EUR)		
Financially supported	74	27.9
< 225.8	33	12.4
225.8 - 338.5	48	18.1
338.5 - 451.7	28	10.5
> 451.7	82	30.9
Amount of money spent on food every month? (EUR)		
< 47.1	28	10.5
45.1 - 112.9	126	47.5
112.9 - 225.8	76	28.6
> 225.8	35	13.2

The distribution of the consumers' responses to the questionnaire is presented in Table III.

Table III
Questions regarding the knowledge, interest and attitude toward functional food among Romanian consumers.

Sample characteristics	Total
Do you read food labels while doing your grocery shopping?	
Never	1
I am not interested	0
Just for some products	83
Sometimes	88
Always	93
While doing your grocery shopping you choose	
Food with less ingredients	87
Diet food (Coca-Cola Zero, Non-fat dairy)	34
Food without artificial ingredients	101
Organic/bio food	79
Food from the fresh food market	207
Functional foods include	
Whole food that provides health benefits	243
Dietary supplements	19
Diet food	15
Medicine herbs	35
Fortified/enriched food	44
Functional foods can	
Reduce the risk of developing a certain disease	140
Prevent disease	115
Cure	23
Improve health	202
Which of these foods can be considered as functional?	
Whole grain cereals	209
Berries	194
Fermented food	72
UHT milk	28
Palm oil	50
Margarine with omega 3	18
Soy	85

The interest in functional food was assessed by the willingness to read food labels when shopping. Results regarding the link between income and the interest in functional food have statistical significance ($p<0.05$) and are presented in Figure 1.

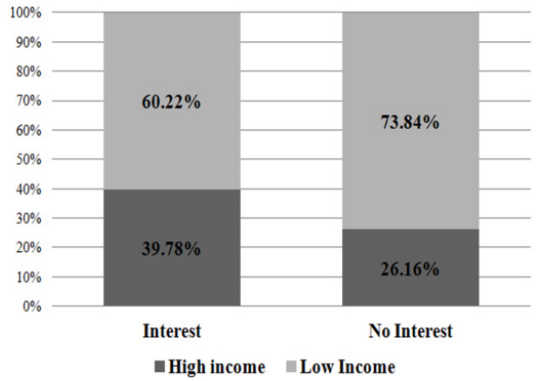

Fig. 1 – The link between income and interest in buying functional foods.

The relationships between the income level and knowledge regarding functional food, as well as between the education level and knowledge are presented in Figure 2 and Figure 3, respectively. There is no statistical significance between the level of education and knowledge of functional ($p>0.05$) foods, but income seems to have a tendency to be statistically significant in relation to knowledge ($p=0.05$).

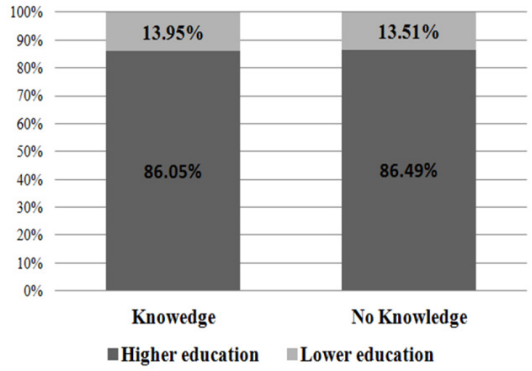

Fig. 2 – The link between education level and knowledge about functional foods.

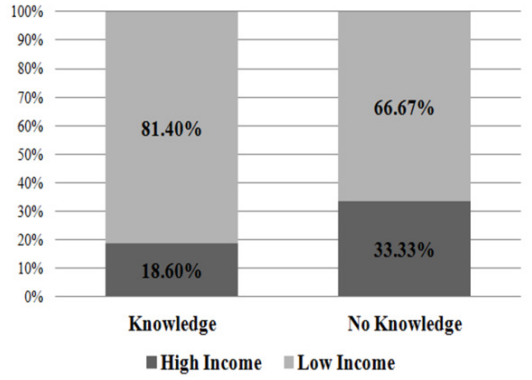

Fig. 3 – The link between income and knowledge about functional food.

Discussions

Our study evidenced a statistically significant relationship between the interest in functional foods, as shown by the willingness to read food labels when shopping, and the high income of consumers ($p<0.05$). It seems that high income consumers are more interested in functional foods, as presented in Figure 1, even if they do not know more about the subject compared to low income consumers, as shown in Figure 3. One reason for this result could be that people in Romania have a lower average wage compared to most Western European countries. Our results are similar to those of Popa and Niculiță, who concluded that young professional Romanian women look for healthy foods in terms of low fat content and rich nutritional values (Popa & Niculiță, 2013). Our study replicated some of the findings produced by Sloan (2014), who found that 6 out of 10 participants read the food labels while shopping, whereas our study found that 181 out of 265 participants always read the food labels while shopping, as presented in Table III. Furthermore, willingness to read food labels may also be influenced by ethnicity (Gorton, 2009).

Our study suggests that the level of education does not influence the consumers' knowledge of functional foods, as shown in Figure 2. These findings are similar to those of Chambers and Lobb, in a study conducted among British consumers (Siro et al., 2008). Contrary to our findings, Stewart-Knox (2007) found that higher educated consumers are more willing to buy functional food than less educated consumers.

Results from our questionnaire revealed that 243 out of 265 participants believe that functional foods are whole food that provides health benefits. A similar study conducted among Belgian consumers found that 49% of consumers recognized functional food (Krygier, 2007). As presented in Table III, 113 out of 265 respondents confuse functional foods with dietary supplements, diet food, medicine herbs and fortified food. One reason for this result could be that there is little information about functional foods among Romanian consumers. A study conducted among Hungarian consumers revealed that 70% of the participants were not familiar with functional foods (Szakaly et al., 2004).

Furthermore, we found that 140 out of 265 respondents believe that functional foods can reduce the risk of developing a certain disease and 115 out of 265 believe that functional foods can prevent disease, as presented in Table III. Our findings were similar to those of a study conducted among American consumers, showing that 8 out of 10 consumers believe functional foods can prevent or delay cardiovascular disease, osteoporosis or type 2 diabetes (Sloan, 2014). Results also show that 207 out of 265 consumers prefer buying food from the fresh market while doing their grocery shopping. Another study found that consumers from Mediterranean countries prefer natural, fresh foods and consider them a better choice (Menrad, 2003). Furthermore, a Romanian study among young professional women underlined the willingness to buy fresh food from open markets with "made in Romania" products in order to eat healthy and encourage the local economy (Popa & Niculiță, 2013).

As Table I and Table II show, most of the participants were female, well educated, having a higher income. This finding suggests that well educated, higher income women are more reflective about health issues and eating choices than men. Previous research has suggested that female consumers have a stronger interest in functional foods as they are responsible for grocery shopping (Bech-Larsen & Scholderer, 2007). The target population interested in functional foods in the present study was represented by young women, whereas in a study conducted by Lynam et al. (2011) among Scottish consumers, senior women were more interested in foods that provide health benefits.

The results of the present study may be of real inte-rest for health professionals, as they play an important role in educating the population, raising knowledge and interest in functional foods and making consumers more aware of their food choices. Food manufacturers and the pharmaceutical industry may benefit from the development of functional foods by informing consumers about the potential benefits of such products. Our findings could also serve for future marketing strategies for the Romanian functional food market.

Some limitations of the present study should be addressed. The sample is not representative of the Romanian population, as most of the participants in the present study were young, well educated women. In future research, we might sample for diversity as in heterogeneity sampling. Finally, there are obvious limitations inherent to the instrument used to collect information (i.e., the self-administered questionnaire).

Conclusions

1. The interest in buying functional foods is influenced by income.
2. Knowledge about functional food is not influenced by the level of education, but might be influenced by the income level.
3. The majority of respondents recognize functional food as whole food that provides health benefits, but they confuse the term with dietary supplements, medicinal herbs or fortified food. This strongly suggests the need for education and information campaigns among Romanian consumers.

Conflicts of interests

There are no conflicts of interest.

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