

Romanian Population Perception about Food Risk Behavior Starting from their Social and Cultural Profile

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Abstract

Our goal was to assess the Romanian's food behavior according to their socio-cultural profile, in order to identify food behavior at risk and implement educational prevention methods. We performed a study based on the assessment of lifestyle and social aspects, based on an international project validated questionnaire of 26 questions, applied online in 2018 to a group of 821 adults, in Romania. The results underlined that socio-economic status was a contributing factor in food choices, people with low socio-economic status opted for low-price food, especially the elderly (40%). Regarding the preference for eating alone related to gender, both the female respondents (37.8%) and the males (50.6%) mostly disagreed, with statistical significance for males ($p < 0.022$), also males were more influenced about what other people are eating ($p < 0.045$). It is needed to implement new educational strategies, both in schools and adults communities, in order to reduce the risks for future chronic diseases.

Keywords: food intake, socio-economic status, food price, health.

Introduction

In recent years there have been numerous studies on the influence of social and cultural factors on food, demonstrating the impact that they have on food behavior (Pelletier *et al.*, 2014). There is major evidence that social norms regarding food consumption have a strong effect on both food choice and quantity consumed.

Numerous researches have examined how people adjust eating behavior to manage the public image and to create a certain impression for those around them (Higgs *et al.*, 2014).

Also, the globalization of agro-food systems has increased the availability and variety of foods through changes in food production and distribution. Investigations in the field show that the agricultural, feed stocks and health systems are largely disconnected in terms of priorities and objectives. Horgan and colab, showed in a recent study that UK consumers eat greater amounts of meat products with family members compared to when alone or with other companions.

Eating out at restaurants or pubs, increased the probability of consuming meat and the amount

compared to other situations (e.g. home, work). When considering the factors influencing trendy foods consumption, attention must be paid to the effects of social, temporal, and situational factors as they all work to shape consumption behavior (Horgan *et al.*, 2019).

Adopting healthy diets in high-income countries has substantial effects on the type of eating behavior and on health. For example, adherence to the WHO (World Health Organization) dietary recommendations means a substantial reduction in the consumption of vegetable oils (by 30%), dairy products (by 28%), animal fats (by 30%), meat (e.g. , pork with 13.5% or sheep and goat meat with 14.5%) and sugar (by 24%) and a substantial increase in the consumption of cereals (by 31%), fruit (by 25%), and vegetables (21%). The WHO definition for the adequate consumption of saturated fats recommends a 10% share of the total energy. A study in the UK showed that if the diets complied with nutritional recommendations, 70,000 premature deaths could be prevented each year, with a health care savings of £ 20 billion every year (Conkin *et al.*, 2014; Cornelsen *et al.*, 2014).

A global study, using numerous scientific papers from 38 countries, of which 13 were with poor socio-economic status, 11 with medium status and 14 with high status, found that low-income countries were the most affected by changing food prices, especially influencing the consumption of meat, fish and milk. The consumption of cereals, fats and oils was the least sensitive to price changes, as the calories from cereals represent about half of all the calories available in low-income countries. Raising grain prices would have a greater impact on diet compared to rising food prices (Cornelsen *et al.*, 2014; Darmon and Drewnowski, 2015).

Numerous studies in the US have pointed out that the budgets of those with poor socio-economic status are insufficient to achieve a balanced diet. It is well established in the literature that healthy diets involve higher costs compared to less suitable diets. Foods with low nutritional value and lower quality diets cost less, being generally selected by low-income groups (Darmon and Drewnowski, 2015).

Regarding the choice of foods according to a good price/quality ratio, the majority of the studied group responded in agreement and the answers did not vary according to the current professional activity. From our point of view, it is

important to ensure a proper education regarding food behavior and nutrition healthy principles, along with proper food choices from the shelves, in relationship with food marketing and food industry products offers, in order to avoid food-related morbidities (from obesity to dental caries).

The main purpose of the paper was to evaluate the food behavior according to the social and cultural profile, in a group of Romanian adults, in order to identify the food behavior at risk followed by implementing educational prevention methods.

Material and methods

We have conducted a cross-sectional epidemiological study, based on a validated questionnaire (from EATMOT project mentioned at acknowledgements), filled online after consent and proper personal data protection by 821 Romanian adults, in 2018, in order to assess the lifestyle, nutrition and health status, in relation to their social and cultural profile.

The EATMOT project used a questionnaire that was developed in order to explore in what way some personal, psychological and social motivations can influence food choices and eating practices. The questionnaire was prepared and previously validated for a study carried out only in Portugal (Ferrão AC. *et al.*, 2019), and then it was translated into the native languages of the 15 participating countries, following a back-translation methodology for validation. For the translation process, all the issues related to the possible cultural influences in the interpretation of the questions were verified. We followed 6 section: Health motivations, Emotional motivations, Economic and Availability motivations, Social and Cultural motivations, Environmental and Political motivations, and also Marketing and Commercial motivations. From all these sections, for this manuscript we used questions from 4th section (Social and Cultural motivations). The participants would express their level of agreement with each statement on the following 5 points hedonic scale: 1-strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree and 5-strongly agree. Because some of the questions were in the inverted mode (Q1.5, Q1.9, Q6.1, and Q6.4), the corresponding scores were reversed. In this way, the higher the global scores, the stronger the influence on the food choice and eating processes.

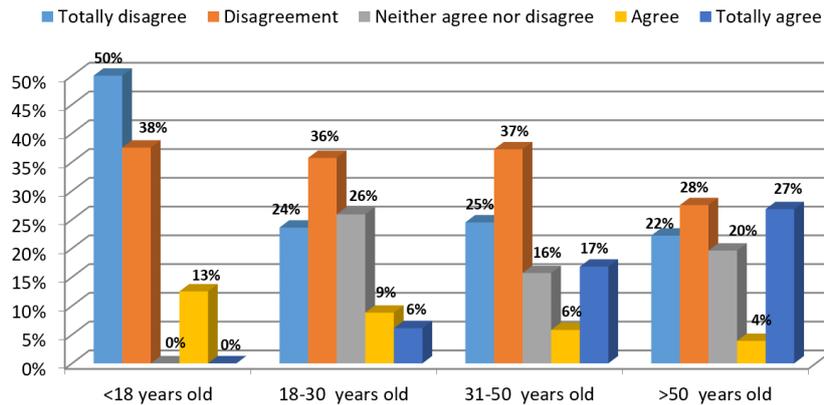


Figure 1. Food choices according to ages

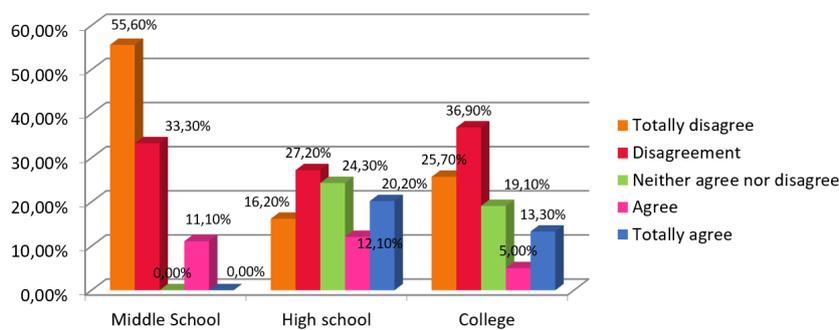


Figure 2. Choices of foods regarding the low price

The GraphPad InStat biostatistics program was used for data processing and analysis, and the Student test were used to determine the statistical significance.

The most important aspects that we have emphasized are:

- Demographic aspects (age, gender, educational level, professional activity, environment of origin, marital status);
- Emotional, socio-economic or cultural motivations regarding the preferred type of food.
- Attitudes towards food choice and eating preferences.

The questioned group had 821 persons (of which 68.9% were women), with a mean age of 44 years old (between 18 to 54) and 82.8% that came from urban areas.

Regarding the marital status, 230 (28%) stated that they are single, 524 (63.8%) were married or living in cohabitation, and 67 (8.1%) were divorced or widows. Of those surveyed, a large majority (77.8%) had university studies.

Most of the respondents, 589 (71.7%) were employed, and only 163 (19.9%) students.

Results

Food preferences according to price

Regarding the low price as the main consideration in the choice of food, in the studied group distributed by age, the following choices were made: from those from 18 to 50 years old, 50% completely disagree with this type of choice, and those over 50, 27.5% responded with a disagreement. In our sample, 24% were totally disagree and 14.6% totally agree, almost a balance, regarding the orientation to cheap foods (Figure 1).

Depending on the level of education, 55.6% of those who have just graduated from the general school completely disagree with the choice of low-priced foods, compared with a lower percentage (36.9%) from those who graduated from college (Figure 2).

The professional activity and social status influence the choice of the type of food chosen from the shelves as follows: of the employees, 22.5% agreed with the choice of the type of food according to the low price, compared with 40% of retired persons (Figure 3).

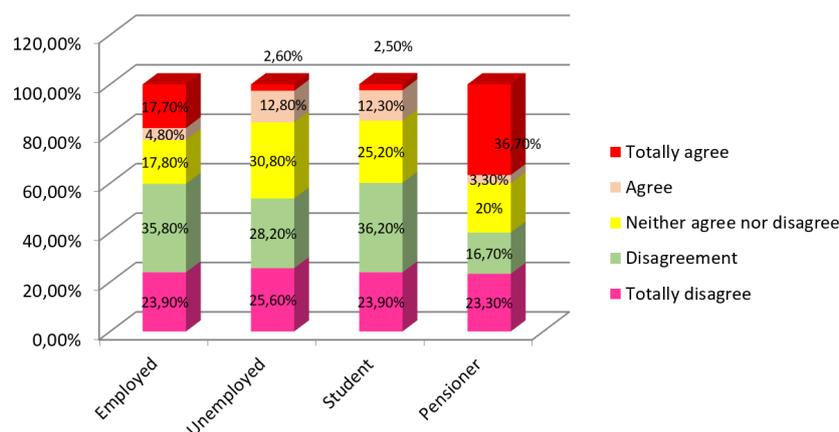


Figure 3. Low-cost food choices according to professional activity

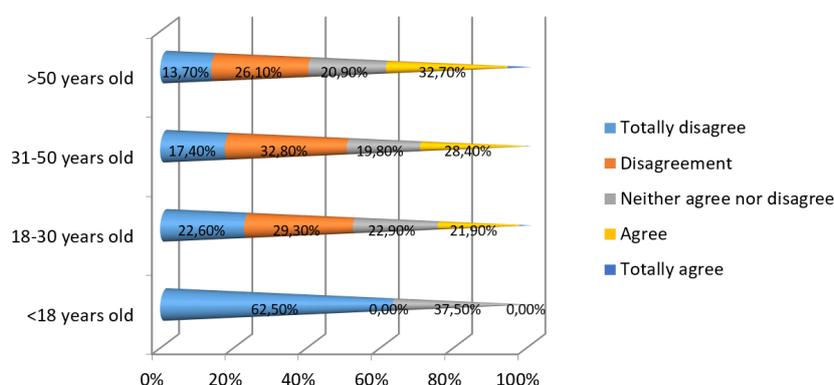


Figure 4. Association between age and the influence of others on their own eating behavior

Regarding the preferences for food products that have a good price/quality ratio, depending on the professional activity, the answers vary as follows: of those employed, 59.7% replied that they disagree with this statement comparing to 53.8% of non-employed, with statistical significance ($p < 0.005$).

Choosing foods according to their nature

In our sample distributed by level of education, the majority responded with total agreement to the statement: "I buy fresh vegetables to cook them personally, more often than frozen". Thus, of those who were graduated general school, 66.7% were completely in agreement, compared with 42.7% of faculty graduates ($p < 0.62$).

Food choice according to social and cultural profile

At the question: "Meals are opportunities for relaxation and socialization", associated with age, we observed that young adults agreed more

(62.5%), compared with 40.5% of those over 50 years of age ($p < 0.034$).

Depending on the residency, the frequency of subjects which consider the meals as opportunities for relaxation/ socialization, 37.7% were from rural areas, 42.8% from the cities and 59.3% from suburbs.

To the statement: "I eat more than usual when I am in someone's company" associated with the current professional activity, 38.2% of the employees answered by agreement, compared to 38.5% of the non-employed or 27.6% of students.

Depending on age, the studied group responded to the statement: "I eat certain foods because other people eat them" as follows: the young adults disagreed, and one third of those over 50 years chose neither agree nor disagree (32.7%) (Figure 4).

Depending on the gender, 34.8% of the female respondents disagreed with the statement: "I eat

certain foods because other people eat them”, and the male respondents agreed (for 57%) ($p < 0.045$).

Regarding the preference for eating alone related to gender, both the female respondents (37.8%) and the males (50.6%) mostly disagreed, with statistical significance for males ($p < 0.022$).

For the statement: “I like to eat new dishes, which I am not used to”, according to gender, we observed that both genders responded in similar proportions (38% females versus 32.3% males).

Regarding the statement: “I usually eat foods that are trendy”, the results showed that those who graduated general school answered with a total disagreement (for 55.6%), comparing to those who graduated high school and university with the same opinion (36.4% and 41.9% of the subgroups), with no statistical differences between ($p < 0.13$).

Discussions

Choosing food according to price

In the present study we tried to follow some aspects related to the choice of food according to price. Reported at age, the studied group responded mostly disagreed with the choice of food according to the low price, without any notable differences between the age groups. Also, there were no differences in the level of education, most do not choose the food according to the low price, answering disagreement regardless of the level of education.

In contrast, there were differences between the responses when we refer to the current professional activity. Thus, employees and students mostly disagreed, non-employees responded neither agree nor disagree, but an important percentage choose their food according to the low price, which suggests that the low income causes them to choose predominantly low-cost foods.

The price of food has become a concern among those dealing with nutrition and obesity. In countries with low incomes, food expenditure can account for up to 62% of incomes. Regarding the real price of food, these changes are likely to cause significant changes in diet and nutrient intake, with health implications, making it difficult for countries with poor socio-economic status to cope with rising prices. All of this contributes both to undernutrition and to the problems of over-solicitation through the use of lower quality, cheaper foods, reduced global food intake, lower

consumption of nutrient-rich substances, and increased consumption of cheaper, content-containing foods high in calories, but low in nutrients. (Cornelsen *et al.*, 2014)

Choosing foods according to their nature

Consumer food choices vary depending on several factors. The predominant choice of fresh vegetables at the expense of frozen foods helps to maintain a balanced diet. The results obtained in the present study revealed that the majority of those surveyed buy fresh vegetables more often than frozen ones, with no differences depending on the level of study. A study conducted in Sweden, showed associations between low level of education and high rates of obesity, diabetes, and cardiovascular disease. These inequalities in health can be explained by the differences in the habits of life and the nutritional quality of the diet. A high socio-economic position has been associated with higher consumption of fresh fruits and vegetables (White *et al.*, 2020).

A study conducted in North Carolina identified 3 major barriers to fruit and vegetable consumption: cost, access and changing company rules. Thus, easy access to supermarkets was associated with higher consumption of fruits and vegetables, but a strong influence is also the price of food (Maslow *et al.*, 2013; Dehghan *et al.*, 2011).

Food choice according to social and cultural profile

The social adaptation of food consumption is a recognized influence on eating behavior, the effect being reproduced in numerous studies (Robinson *et al.*, 2011; Robinson *et al.*, 2013). For most consumers, “food” is a pleasure and not just a source of energy for the body, and the majority perceive meals as opportunities for relaxation and socialization, without differences between the answers, depending on the age group or the environment of origin.

The amount of food consumed in a social food context can be strongly influenced by colleagues, family or close friends, so individuals tend to eat more when others around them eat more. Because many meals are consumed in a social context, recent findings suggest that there is a link between weight gain and the behavior of those around us and, at the same time, obesity tends to spread on social networks through family members and friends (Robinson *et al.*, 2011; Pachucki *et al.*, 2011).

This influence on eating behavior was also highlighted in this study, the results reported at the study level being the same, that is, those who have a job, students (18 to 30 years old) and seniors (more than 65 years old), eat more when they are in someone's company. A notable difference also appears between the different age groups, the most relevant result being obtained in the youngest adults, these being influenced in the vast majority by those around, regarding the type of nutrition chosen. The other age groups mostly disagreed.

Also, the results differ by gender. The majority of women answered that they do not eat more when they are in someone else's company, whereas the majority of men answered they do. In an observational study of 157 McDonald's restaurants, it was found that women ate less when accompanied by men than when they were only in the company of women, which is consistent with the present study, namely that women tend to eat less in the presence of men or in the presence of a possible partner they want to impress. In discordance, men ate more in the presence of women, out of a desire to show their masculinity (Kumanyika, 2010; Brindal *et al.*, 2015).

Regarding the preference to eat alone, both women and men questioned in this study, mostly disagreed, which again demonstrates the strong influence that the social context has on the eating behavior of the individual. Although the mechanisms underlying these effects in terms of eating behavior are not completely elucidated, numerous researches in the field suggests that in the absence of satiety signals, individuals determine their adequate amounts of food by comparing them to the amounts consumed by those around them (Higgs and Thomas, 2016). However, it has been shown that these effects also occur independently of the feeling of satiety, individuals acting similar to those around them and of the desire to integrate or to facilitate social interactions. New research suggests that individuals consume a greater amount of food, especially around the family, this influence being less pronounced in the case of friends or colleagues (Higgs and Thomas, 2016; Poelman, 2018).

Other studies have shown that people in newly formed relationships tend to adopt a healthier diet by increasing the consumption of fresh fruits and vegetables and the predominant choice of low-fat

foods (Keselman *et al.*, 2019; Borşa *et al.*, 2015; Guiné *et al.*, 2016).

The enthusiasm of trying new foods was found in both genders, both women and men, completely agreeing with this statement, in the study. Evaluating the association between the level of education and the desire to consume trendy foods, the same results were obtained from those questioned, without differences according to the highest level of study, most of them answering disagreement.

Conclusion

Our survey observed a strong impact that the social context has upon nutrition, which is an important factor that underlies the development and maintenance of obesity (by eating out regular, preferences for trendy or fast-food types, no time for cooking at young adult age etc). Thus, developing healthy eating plans and promoting them are beneficial in lowering the prevalence of obesity and adopting an adequate diet.

Given to global estimates, food price's changes have a greater effect on low-income countries, and there is a clear need for information and understanding of consumer's practices and attitudes towards food, in order to evaluate the marketing programs outcomes and risks for population malnutrition.

Regarding the modification of eating behavior among the general population, the socio-economic status should be taken into account, strategically combining the promotion of high consumption of fresh fruits and vegetables with other approaches and at the same time using social marketing to obtain the health benefits, taking into account cost, comfort, availability and access to food in an effort to reduce the burden of disease among the population. A broader understanding of these strategies can help produce low-fat, affordable, and organoleptic-grade foods to the liking of consumers, resulting in a balanced diet.

Also, given the important role parents play in children's eating behaviors, they should be informed about the consequences of unhealthy eating and lifestyle and motivated to change their nutritional habits. Parents should be the target of prevention programs, as children are modeled on parents' eating behaviors, their lifestyle, attitudes and dissatisfaction with body image. Pediatricians can play an important role in preventing diet-related diseases. Informed and motivated parents

can become a role model for children by offering a healthy, high quality diet with low energy value and rich fruit and vegetable content.

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