

# THE UNBALANCED FOOD STYLE OF NEW GENERATION – DECEPTIVE REALITY OF CONSUMPTION BEHAVIOR IN ROMANIA

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## Abstract

As a result of the symbiosis between food technology and nutrition science, food universe is today in an extensive process of reconfiguration and exponential multiplication. Ultraprocessed and overorganoleptized foodstuffs represent the dominant offer on the market. Generations of consumers, victims of a real alimentary uproar and of the apparently friendly rethoric of the advertising, which, on the one hand encourages the overconsumption and, on the other hand imposes the cult of supple forms, faces more acutely with eating disorders.

Having as a main aim the highlighting of the characteristics of food behaviour for the new generation of consumers in Romania, we realized an exploratory research, based on the technique of *the food diary through estimation*, and for highlighting the potential nutritional imbalances, we analyzed the medium allowance of energy and macronutrients of the respondents' diet. We would like that the results of our research to lead to the subsequent elaboration of a guide for redirecting the food behaviour of the young consumers, in order to avoid the nutritional imbalances and to prevent a serious illness.

**Key-words:** new generation of consumers, eating behavior, energy intake, guideline daily amounts, nutritional imbalance.

**JEL Classification:** I12, O13, Z10

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## Introduction

Foodstuff, this perpetual component of people's lives, must be approached from a holistic perspective, both through its social and identity functions, as well as through its effects over the consumers' health, especially of the young generation. Beyond the social function, reflected by the fact that the producing and the consumption of food were, within all the human collectivities, activities made in group („to eat” doesn't only mean a simple satisfaction of the nutritional necessities, but it also means a social participation), nutrition also has an important identity function, because the foodstuff we consume is, in general, permeated with references connected with what we ourselves have experienced. These psychological dimensions explain, in great measure, attitudes like attraction, disgust or rejection of some foodstuff (Raoult-Wack, 2007).

Thus, from the practical point of view, food behaviour can be defined as the ensemble of individual actions and attitudes related to food. Approached from a theoretical perspective,

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the food behaviour represents the totality of the response reactions against the internal or the external stimuli, which ask for the food intake or for stopping the feeding act. These are inborn reactions (instinctual), as well as attained reactions during life by means of experience. The food behaviour is defined as accomplishing some will acts, having as an aim the intake of nutritive substances, not as such, but as foodstuff, whose significance is more complex than that of the nutritive substances which it contains (Popescu, 2006).

In determining the eating behavior a significant weight has the cultural level of populations, as well as of each individual, reflected through traditions, beliefs, customs, fashion, as well as the economical or utility reasons.

During the contemporary period, the alert lifestyle, the great availability and accessibility of foodstuff and the powerful pressure exercised by the food industry by means of mass-media, in order to encourage overconsumption, have disturbed all the elements of the consumers' food behaviour, causing them to miss the nutritional landmarks obtained within family education. Adopting a diet based on quantity instead of quality, due to a bad nutritional education, the modern consumers are both overfed and underfed, two features rarely found in the same body throughout the history of civilization (Pollan, 2008a).

Having as a premise the existence of this deceptive reality, we realized an exploratory research, based on one of the consecrated techniques of food investigation, *the food diary by means of estimation*, with the aim of highlighting the defining coordinates of the food intake habits and the determining factors of the food behaviour for the new generation of consumers in Romania. Moreover, our research also regards the analysis of the medium daily allowance of energy and macronutrients, with the aim of highlighting the potential nutritional imbalances.

We would like that our research results be able to allow the formulation of a set of recommendations in order to avoid the nutritional imbalances from the diet of the new generation of consumers in Romania. Obviously, these recommendations may be the basis of the subsequent elaboration of a guide for redirecting the nutritional behaviour of the young consumers, following the failure of some national programmes for improving the nutrition condition.

In order to attain the proposed aim, the paper, structured into many sections, starts with an incursion in the specialized literature, in order to identify the most relevant aspects regarding the coordinates of the food behaviour of the new generation of consumers. The following section is dedicated to the presentation of the objectives and the utilized methodology, and the third part includes results and discussions. In the end, the paper presents in brief the conclusions achieved from the realized research, a solution being made at the same time in order to correct the imbalances from the food behaviour of young consumers.

### **1. Investigation of academic literature regarding the emergence of the mutations in the food behavior of modern consumer**

A paradoxically situation that is facing global society is the progress of modern food industry led to a nutritional degradation of the alimentation. The ultraprocesing of raw foodstuffs by applying some industrial practices of modification, such as refining or hydrogenation, deprives certain basic foodstuffs on many important nutrients (vitamins, minerals, dietary fiber, antioxidants).

Of all these modern techniques of processing, the refining, especially of carbohydrate sources, has led to an increasing of "empty" calories consumption (Chirilă, 2007).

Due to the negative opinion trend formed around the refined food products, modern food industry, based on various theories raised in the field of nutrition, tried to compensate the loss of micronutrients through foodstuffs fortification, that means further addition in the processing of refined raw materials, of some absent nutrients (especially vitamins and minerals). Even if some lost micronutrients are subsequently reintroduced, it was proved that food science is not sufficiently advanced to be able to offset all negative effects of foodstuffs processing and the complexity of whole foodstuff is impossible to be artificially restored (Pollan, 2008a).

Through the use of both modern techniques of modification/refining and fortification of raw materials was generated a situation that can be considered the equivalent of nutritional inflation, determining the individuals to consume more in order to get the same amount of essential nutrients (lack of micronutrients in the diet causes the cancellation of normal satiety sensation that occurs after consumption of sufficient calories, and the perpetual hunger that the human body feels is actually a subterfuge to obtain the absent nutrients) (Pollan, 2008b).

Thus, after some decades of abusive consumption of ultraprocessed food products, based on poor information regarding real nutritional benefits of industrial foodstuff, the balance is not encouraging: people are increasingly overweighted, sicker and poorly fed.

This situation is characteristic also to the new generation of consumers, especially since the young ones, overcoming the stage when control exercised by the parents was predominant, own a very high personal control over food choices in the type of food consumed, frequency and their quantity (George and McDuffie, 2008).

Beyond the considerable influence that young people have on their food choices, another dominant of their food consumption behavior is the prevalence of sensory characteristics in guiding food choice decision. The fact that young people are genuine slaves of the gustatory papillae, oversizing the hedonic aspect of consumption and neglecting the objective reality of food quality represented by the nutritional value, is a common ascertainment of many studies, such as those made by Beasley et al. (2004), Louis et al. (2007), Smith, sturdy and Black (2011), Onete et al. (2013).

An explanation of the young people preference for industrial foodstuffs, refined and rich in saturated fats and sugar (this category also includes fast-food products) may constitute a mental association of this food behavior with the idea of independence and fun with friends, while eating healthy foods is associated with the control exercised by parents.

But in consumer societies of the third millennium, characterized by a greater availability of food products, food behavior of young people is influenced by the food industry strong pressure exerted by the media, to encourage overconsumption. Young consumers are faced with a paradoxical message: incentive, on the one hand, to consume increasingly under advertising pressure, are constrained by the standards of fashion, on the other hand, to maintain their slender forms (Raoult-Wack, 2007).

Within the context of these conflicting messages, young consumers are increasingly confused and lose their nutritional markers, empirical transmitted from generation to generation within the family education. Thus, among some consumers, eating disorders occur, which may be one of the contributory factors (along with the genetic, physiological, psychological, environmental) in triggering of serious diseases.

## **2. Objectives and research methodology**

Following the investigations within the specialized literature, as well as by means of our own observations over the everyday life, regarding the food intake we noticed the existence of a discrepancy which is continuously increasing under the constant pressure of the food industry, and respectively the fashion standards requirements. These two factors act in two

different directions, which generate contradictory effects over the consumption behaviour for the new generation of consumers in Romania.

Assuming the existence of a nutritional imbalance in the daily diet of young consumers, our work concerns the following objectives:

- Identification of the main coordinates of the food habits for the new generation of consumers in Romania;
- Highlighting the determining factors of the food habit for the new generation of consumers in Romania;
- Analysing the daily allowance of calories and macronutrients of the diet for the studied collectivity;
- Finding the possible types of imbalances in the respondents' diet by determining the medium degrees of covering the recommended calories and macronutrients intake;
- Developing some recommendations for correcting the possible imbalances from the diet of the new generation of consumers in Romania.

The evaluation of the food intake can be realized by means of the nutrition questionnaires, which can offer explanations regarding the food intake and implicitly, of energy and essential nutrients, of an individual's diet. It must be specified from the beginning that there is no method which can allow an exact evaluation of the food intake (Marcu, 2011).

One of the consecrated methods for gathering the data in a nutritional survey is the one of the nutritional diary, to which indisputable advantage is due to the fact that the study, in a number of days, for the foodstuff and the consumed quantities from these, will allow the establishment of nutritional habits for the respondents (Graur, 2006).

Within our research, we chose the method of „*The nutritional diary through estimation*”, which implies the designation of the foodstuff and, approximately, of the ingested quantities.

The sample was made up of 40 people, with the age between 20 and 26, having a Romanian nationality, 28 women and 12 men, students at the master programs of the Faculty of Business and Tourism, from the Bucharest University of Economic Studies.

The research was realized between April-June 2014. For a period of seven days, using a model of a nutritional diary which was given by the paper's authors, the students wrote the foodstuffs they consumed for the main meals of the day and the two appetizers and they designated, approximately, the ingested quantity of each foodstuff.

Subsequently, for the designated foodstuff in the nutritional diaries of the respondents, the proteins, glucides, lipids contents was identified, using diverse data bases with the chemical compositions of the foodstuffs (<http://ndb.nal.usda.gov/ndb/search/list>).

The data processing was realized by means of the spreadsheet program Excel and implied, at first, the calculation of the whole quantities of proteins, lipids and carbohydrates corresponding to the afferent foodstuff and quantities, as indicated by the respondents, at each of the five daily meals (breakfast, appetizer 1, lunch, appetizer 2, dinner), for a period of seven days. Starting from these values, the energetic value of each meal was calculated, using the formula:  $Q = 4,1 \times P + 4,1 \times Gl + 9,3 \times L$ , (where: Q - energy value of the product (kcal); P, Gl, L - amounts of proteins, carbohydrates, lipids (g)). By summing them up the calories intake for each day was obtained, and then, the average of the daily energy intake was calculated for every respondent. The second stage implied the calculation, for every respondent, of the degrees for covering the recommended daily intake for each of the three categories macronutrients, as well as for the recommended daily calories intake. The calculation of the covering degrees was realised dividing the energy intake and,

respectively, the macronutrients intake by the recommended necessities within the nutritional norms in Romania for females with the age between 20-45 years old, who undertake a physical activity of small intensity (2500 kcal, 90 g proteins, 340 g carbohydrates, 80 g lipids) and also for men with the same age and intensity of physical activity (2700 kcal, 90 g proteins, 370 g carbohydrates, 90 g lipids).

Within the nutritional norms, the recommended daily nutrients and energy intake are differentiated according to sex, age and the intensity of the physical effort made. However, as the respondents are included in the same age category and, in general, don't have an intense physical activity (they may be characterized by sedentariness due to the socio-professional context, being master students and employed people), the only criterion of separation is gender. Thus, the data were presented and processed (the calculation for the degrees of covering the recommended daily calories and energetic nutrients intake) in a divided way for the females and males.

### 3. Results and discussions

In Table 1 is rendered the medium daily calories and macronutrients allowance of the respondents' diet, as well as the average degrees of covering the recommended daily intake for energy and macronutrients.

**Table 1. The average daily allowance of macronutrients and energy and average degrees of covering the recommended daily intake**

Respondents	The average daily allowance of macronutrients and energy of the respondents' diet				The average degrees of covering the recommended daily intake for energy and macronutrients			
	P (g)	GI (g)	L (g)	Energy (kcal)	G <sub>P</sub> (%)	G <sub>GI</sub> (%)	G <sub>L</sub> (%)	G (%)
Female (28 respondents)	75.58	160.04	73.17	1644.72	83.98	47.07	91.46	65.79
Men (12 respondents)	101.65	238.95	103.21	2367.48	112.95	64.58	114.68	87.68

Legend: G<sub>P</sub>, G<sub>GI</sub>, G<sub>L</sub> - degrees of coverage the recommended daily intake for proteins, carbohydrates, lipids (%); P, GI, L - amounts of protein, carbohydrates, lipids (g)

Source: original

As the energetic value is that component of the nutritional value which expresses the quantitative aspect of ingested food, in case of the female respondents we can speak of an imbalance, originating, in the majority of cases (27 of 28 respondents) from an insufficient food intake, the average degree of covering the recommended daily intake for energy being of 65,79% (an average of 1644.72 kcal.) In case of one single female respondent we can notice an average covering degree of the daily energy intake of 92,14% (2303,59 kcal), being the closest to the optimum value of 100% (that is the recommended necessary of 2500 kcal). One respondent only had an excessive average energy intake, approximately 2800 kcal, exceeding with 12% the recommended daily necessities. At the opposed side, there are 5 respondents who had a daily medium caloric intake smaller than half of the recommended daily necessary, the average degrees of covering the daily energetic necessities being between 31-47%.

In order to discover the cause of this caloric imbalance, we are going to analyse the situation of the average degrees of covering for the three categories of macronutrients (proteins, carbohydrates, lipids) which delineates the energetic value for each foodstuff, in

case of female respondents. This caloric imbalance is a consequence of the insufficient food allowance and, at the same time, of macronutrients, because:

- The medium covering degree for the daily recommended proteins intake is of 83,98% (corresponding to a daily medium intake of 75,59 g, compared with the recommended necessary of 90 g); this value indicated a moderate imbalance;
- The medium covering degree for the daily recommended carbohydrates intake is of 47,07% (corresponding to a daily medium intake of 160,4 g, compared with the recommended necessary of 340 g); the covering degree being smaller than half of the recommended daily necessary, we can speak of a major imbalance for the carbohydrates intake in the daily diet;
- The medium covering degree for the daily recommended lipids intake is of 91,46% (corresponding to a daily medium intake of 73,17 g, compared to the recommended necessary of 80 g); this value highlights a small imbalance.

In the case of the male respondents too, there is the same imbalanced situation, which means an insufficient calories intake, the average degree of covering the recommended daily energy intake being of 87,68% (an average of 2367.48 kcal). We notice that 25% of the respondents (3 individuals) have an excessive calories allowance, exceeding by 13%, 19%, 24% the daily recommended intake, while the majority, that is 75% of the respondents (9 individuals) have an insufficient calories allowance. The smallest covering degrees were 59%, that is a medium calories allowance of 1604.94 kcal, and 57%, respectively, representing a medium calories allowance of 1533.01 kcal.

Next, we are going to analyze the situation of the medium covering degrees for the three categories of macronutrients (proteins, carbohydrates, lipids), in the case of the male respondents, with the aim of discovering the cause of caloric imbalance. This caloric imbalance, a consequence of an insufficient food allowance, the same as for the female respondents, is generated, this time, by an excessive lipids and proteins allowance, as the following reveals:

- The medium covering degree for the daily recommended proteins intake is of 112,95% (corresponding to a medium daily intake of 101,65 g, in comparison with the recommended necessary of 90 g); this value highlights a hyperproteic diet;
- The medium covering degree for the daily recommended carbohydrates intake is of 64,58% (corresponding to a daily medium intake of 238,95 g, in comparison with the recommended necessary of 370 g); this value highlights a relatively emphasized imbalance;
- The medium covering degree for the daily recommended lipids intake is of 114,68% (corresponding to a daily medium intake of 103,21 g, in comparison with the recommended necessary of 90 g); this value highlights a diet rich in fats (the most often saturated or hydrogenated fats).

Analysing the diet diaries filled in by the respondents, we formulate as main coordinates of food consumption behaviour of the new generation of consumers the following:

- in the greatest part, the macronutrients allowance comes from the foodstuff consumed at lunch or dinner, breakfast or appetizers being in many times poor in proteins; breakfast should be found in the diet programme of every individual, no matter the age or the activity and, along with the first appetizer of the day, this must cover for the 30% of the daily energetic and nutrients intake, in case the foodstuffs are chosen properly.
- within the young people's diet who took part in the research we identified the presence of a number of nutritionally imbalanced foods, such as meat and cheese

products industrially processed, pastry industrial products with a high glycemic index (biscuits, wafers, cookies, pretzels etc.), pizza and carbonated refreshing drinks etc., which provide considerable quantities of saturated and hydrogenated fats, simple carbohydrates and insufficient quantities of superior quality proteins, which are at the basis of imbalances from the diet of the participants at the research; this issue support the above statement concerning the failure to correct nutritional laws.

## Conclusions

Our research results highlight an imbalanced food behaviour for the new generation of consumers.

The diet of the female respondents is imbalanced, generically reflected by a medium covering degree of the daily recommended calories intake of 65,79% (that is an insufficient energetic allowance, on average of 1644.72 kcal./day, compared with the recommended intake of 2500 kcal.). The same imbalanced situation occurs within the male respondents' diet, with the medium covering degree of the daily recommended calories intake of 87,68% (corresponding to an insufficient calories allowance, on average of 2367.48 kcal./ day, compared with the recommended intake of 2700 kcal.).

In conclusion, both the female respondents' diet, and the male respondents' one is affected by imbalance, more or less emphasized, highlighted by the values of the covering degrees for the recommended daily calories and macronutrients intake. If in the case of the female respondents the nutritional imbalance is generated by the insufficient allowance of macronutrients (especially carbohydrates and proteins), in the case of the male respondents, the imbalance reflects an excessive nutrients allowance (especially proteins and lipids).

Within this context, in order to prevent the nutrition and metabolic disorders, there is the need, more than ever before, of an awareness for the connections which exist between nutrition and health („you are what you eat”) and the necessity to adopt, especially by the new generation of consumers, the basic principles for a balanced food behaviour.

The results of the present research, correlated with the previous obtained results (Voinea, Popescu și Negrea, 2015; Onete et al., 2014 ; Pamfilie et al., 2011 etc.), highlights the necessity to elaborate a set of recommendations, under the shape of a healthy nutrition guide, which will allow the reorientation of the food behaviour for the young consumers, because sustaining a healthy diet, by means of variety and moderation, with the aim of reconciliation of the sensorial satisfaction with the food restrictions, isn't an easy project.

A possible approach for elaborating this guide could be the American experience, based on the most recent scientific evidence obtained by USDA (United States Department of Agriculture) and HHS (United States Department for Health and Human Services), which provide solutions for adopting a model of healthy diet, based on foodstuffs with high nutritional value, able to contribute to maintaining the health and the body weight (USDA Food Patterns, 2011):

- *The fruit and vegetables consumed at a meal must cover half of the plate;*
- *The consumed milk and dairy products should have 1% fat or should be degreased;*
- *At least half of the quantity of consumed grain should be whole;*
- *The consumed proteins should come from varied sources (fish, seafood, beans, low-fat meat).*

We suggest that the new recommendations of USDA to be adapted to the Romanians and, subsequently, utilized for elaborating educational materials, as well as for designing and realizing some nutritional programs by the decisional factors at a national level.

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