

BIENNIAL STUDY CONCERNING THE FEEDING PROFILE OF SOME POPULATION GROUPS IN BIHOR COUNTY

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Abstract

This study evaluates the feeding profile of several population groups in Bihor County, over a period of two years. The groups taken into consideration include 101 people, of both sexes and of different ages, with different degrees of physical effort. The method employed is that of the individual food survey, for 24 hours. The average ratios consumed by the four population groups prove deficient with regards to both calories and nutrients, but they are properly prepared as a ratio between trophines. Too little vegetable fat, as compared to animal fat, is consumed. Meat derivatives exceed the recommended amounts, vegetables and fresh fruit are consumed in very limited amounts while fish is absent from the diet. Many subjects do not take either breakfast or snakes, compensating these with dinners exceeding in calories. Several persons do not consume food in appropriate quantities, to meet the demands associated with their physical activity.

Key words: health, prevention, disease, diet, nutrition, education

INTRODUCTION

Within Western society, many people have difficulties adequately regulating their eating behaviours and weight (Verstuyf J et al, 2012). Obesity is a global public health threat (Mastellos N et al, 2014). Several barriers to healthy eating were highly prevalent regardless of gender; the most important determinants were age, obesity, education, and income, with different effects per barrier (de Mestral C, S Stringhini, P Marques-Vidal, 2016). A study conducted in Germany shows that obesity is more prevalent in men with low socioeconomic status, but weight dissatisfaction is more prevalent among obese and preobese men in high socioeconomic status groups (von Lengerke T, A Mielck, 2012). Body image issues, weight preoccupation, and eating disturbances can lead to voluntary food restriction, depression, social withdrawal, lower self-esteem, and disordered eating, all of which can have a negative impact on quality of life and nutritional status (Marshall C, C Lengyel, A Utioh, 2012). Recollection of maternal child feeding practices may have a formative role in the development of body image, disordered eating, and BMI (Body Mass Index) for men and women, even into adulthood (Lev-Ari L, AH Zohar, 2013). Child BMI and dissatisfaction with body image predicted eating disturbances in boys, whereas self-esteem, maternal BMI, and eating behaviour predicted them in girls (Gonçalves S et al, 2012). Especially

during early and middle childhood, family environments are the key contents for the development of food preferences, patterns of food intake, eating styles, and the development of activity preferences and patterns that shape children's developing weight status (Birch LL, KK Davison, 2001). There is inadequate evidence to comment on the effect of weight loss interventions on quality of life and health care utilization; in addition, there was inadequate reporting of data on adverse effects to permit proper balancing of harms and benefits of the interventions (Adeniyi FB, Young T, 2012). Food preferences develop from genetically determined predispositions to like sweet and salty flavours and to dislike bitter and sour tastes (Scaglioni S, M Salvioni, C Galimberti, 2008). The rather high contribution of fat to daily energy intake, the low intake of fish and the relatively high percentage of people consuming less than the recommended amount of fruits and vegetables observed in several studies suggest that the adult population is at increased risk of cardiovascular diseases, obesity and other non-communicable diseases (Nasreddine L et al, 2006). Consumption of regular soda pop, regular powdered beverages, and, to a lesser extent, 100% juice was associated with increased caries risk (Marshall TA et al, 2003). The association between total dietary fat and cancer is still under debate; while there is some evidence demonstrating associations between dietary fat intake and cancers of the breast, prostate, and colon, there are serious methodological issues, including the difficulty in differentiating the effects of dietary fat independent of total energy intake (Lichtenstein AH et al, 1998). While some food patterns were consistently related to intake of specific nutrients in most EU countries, other patterns showed large variations between countries methodological issues, such as survey duration, survey techniques, under- or over-reporting, could have substantial influence on the identification of target foods or food patterns (Sandström B, 2001). Recently accumulated evidence has demonstrated that dietary intake of fruits and vegetables rich in nitrate/nitrite is an inexpensive and easily-practicable way to prevent insulin resistance and vascular endothelial dysfunction by increasing the NO availability; a NO-rich diet may also prevent other lifestyle-related diseases, including osteoporosis, chronic obstructive pulmonary disease (COPD), and cancer (Kobayashi J, K Ohtake, H Uchida, 2015). Although epidemiologic data suggest that consumption of fresh fruit may reduce risk of noncarcinogenic airway limitation, there are no clear data on which nutrients might be most relevant (Romieu I, C Trenga, 2001). High nitrates intake was associated with a weak but statistically significant reduced risk of gastric cancer, whereas increased consumption of nitrites and NDMA (N-nitrosodimethylamine) seemed to be risk factors for cancer (Song P, L Wu, W Guan, 2015). Out-home eating per dinner supplies nearly daily-needed fat

and sodium, that partially contributes to high intake of animal foods (Wang Z et al, 2015). Eating-out habit ended in taking low nutrition with higher limited nutrients, but with low recommended nutrients, when compared to the recommended intake (Liang BJ et al, 2016). Data from household food budgetary surveys and regional, population-based, cross-sectional studies show a declining trend in energy intake in the last decades, also applicable to protein, fat and carbohydrate intakes in absolute terms (Aranceta J, 2001).

MATERIAL AND METHOD

Between 2014-2015, the staff of the Department of Food Hygiene within the Public Health Administration Bihor conducted annual surveys (in autumn), as part of the National Health Programmes, in rural communities in Bihor - Nojorid (2014) and Sînmartin (2015), evaluating food intake and the declared feeding behaviour, using the method of the individual food survey for 24 hours, in accordance with methodological specifications, developed by specialists of the Regional Centre for Public Health in Cluj Napoca. Surveyed groups included 101 people (51 people in 2014 and 50 people in 2015), of both sexes, aged over 20. The structure of groups was homogeneous and, in the interpretation of the results, the amount of physical activity performed was taken into account, measured in degrees of effort. Tables of food composition were used in order to calculate the average daily calorie and trophin content of the menus consumed. Recommended values on food requirements, energy needs and the nutrients taken from meals were completed by the Regional Public Health Administration Cluj-Napoca, depending on age, sex, degree of effort, in accordance with the recommendations of the FAO / WHO and national recommendations.

RESULTS AND DISCUSSIONS

1. The average annual value (caloric and nutritional) of the consumed diet – deviations %

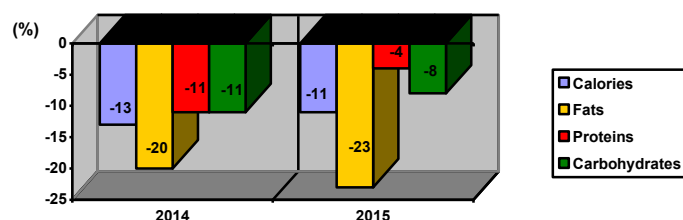


Fig.1. Percentage of deviations recorded in relation to caloric intake and the nutrients

Every year one can observe an average caloric deficit and a global nutritional deficiency. (fig.1). For both years taken into consideration,

percentage deviations for each macronutrient and energy deficiencies values are quite similar.

2. Coverage of food needs in terms of quality of rations consumed during the period studied

Throughout the period mentioned above, food rations, as declared by the individuals in the studied groups, proved to be qualitatively unbalanced, with a significant deficit of vegetable fat in both years and a lack of animal protein during the first year. (fig.2).

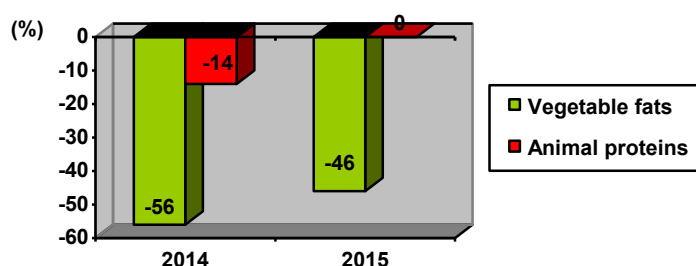


Fig.2. Percentage of deviations recorded in the rations of lipids and proteins consumed

3. Coverage rates of food intake, calculated with regards to nutrients

Table 1

Percentages of caloric rations consumed				
Year		Lipids	Proteins	Carbohydrates
	Recommended	20 – 35%	10 – 15%	50 – 70%
2014	Consumed	28,35%	14,61%	57,67%
2015	Consumed	26,86%	15,41%	58,47%

A positive aspect that can be noticed is the balance between proportions of nutrients, despite the overall deficiency characterizing the declared ratios (table1).

4. Average consumption related to groups of food

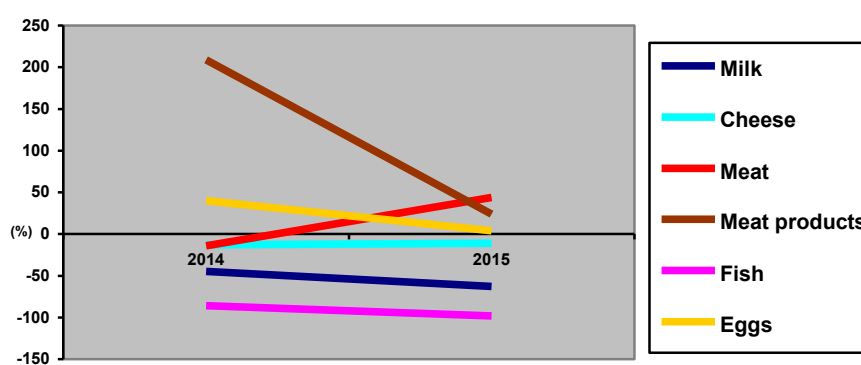


Fig.3. Percents of deviations registered in the ratio of animal food consumed

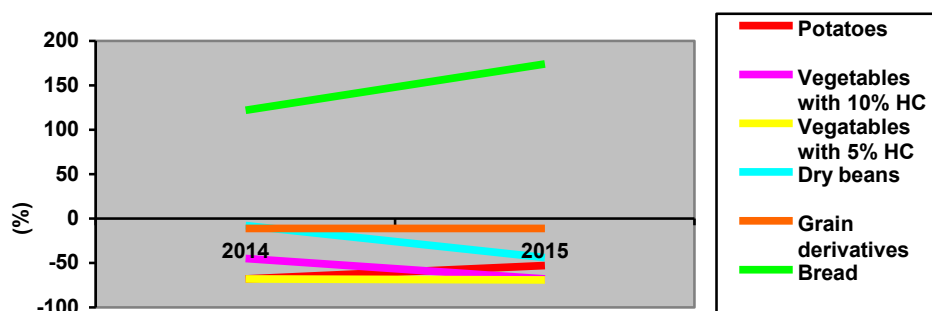


Fig.4. Percents of deviations registered in the ratio of vegetable food consumed

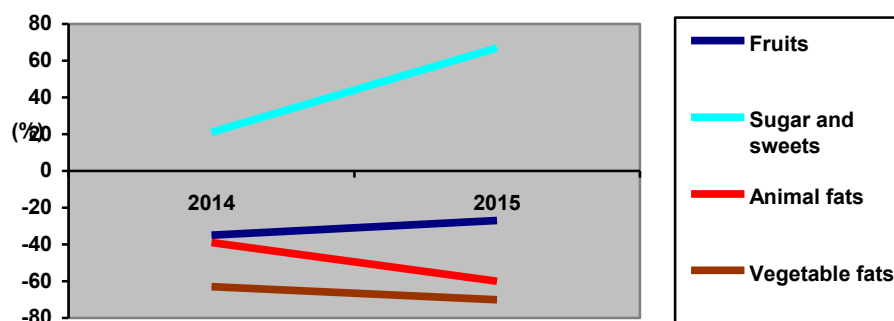


Fig.5. Percents of deviations recorded in the ratio of fruits, sugar and fats consumed

As regards animal food consumption, meat-derivatives showed the highest percentages (large positive deviations recorded in 2014, small positive deviations recorded in 2015), as compared to meat intake percentages (for which there have been excesses just in the second year), or to cheese or milk intake, which were consumed in smaller quantities (deficit in both years), while fish was almost absent from the diet. Eggs intake showed values closed to the recommended ones, during the period studied (fig.3). Among vegetable foods, mainly bread and food derived from cereals were consumed, alongside potatoes and dry beans (smaller percentages); with regards to vegetables, those with 10% HC (root vegetables) were eaten in larger percents than those with 5% HC (fruits, vegetables, green leaves) during the first year, while in the following year consumption values were close, though much below recommendations, even if subjects declared to consume such food on a daily basis, or at least several times a week, the largest deficit being recorded in the case of pulses/beans (fig. 4). A consumption of sugar and sweets in excess was registered in both years; animal and vegetable fats were used in very little quantities, as well as fresh fruit (fig. 5).

5. Coverage of the daily average energy (caloric) needs by age, sex and degree of effort

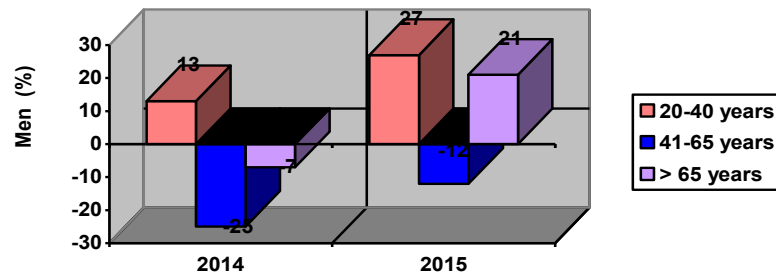


Fig.6. Men's caloric intake by age groups

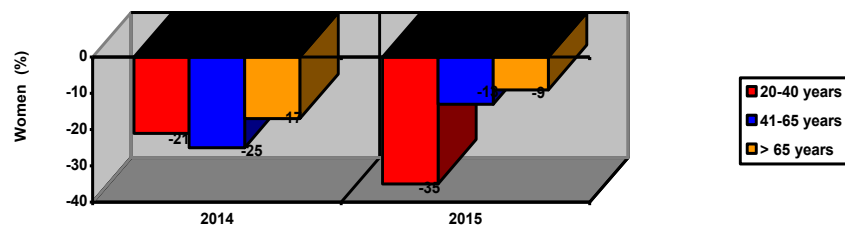


Fig.7. Women's caloric intake by age groups

For both sexes and during the period evaluated, there were some caloric deficiencies, more important in the case of young women (20-65 years). In the case of men, caloric intake proved better organized, negative deviations being observed merely in the case of men of 41-65 years old, for both years taken into consideration, and for elderly men, in 2015. (Fig.6, 7).

6. Percentage distribution of menus on meals

While breakfast and snacks were not in accordance with the recommended values, lunch proved closer to recommendations, and dinners were superabundant, exceeding the requirements twice. Averagely, about 20% of the subjects did not have breakfast and 44% of the subjects did not have light meals as well. (Fig.8 and fig.9).

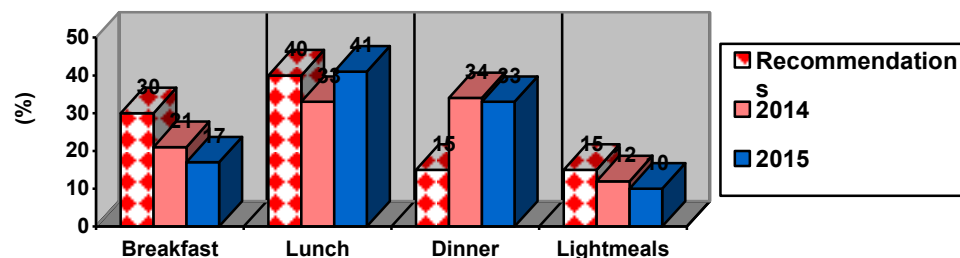


Fig.8. Daily percentage distribution on meals of food consumed

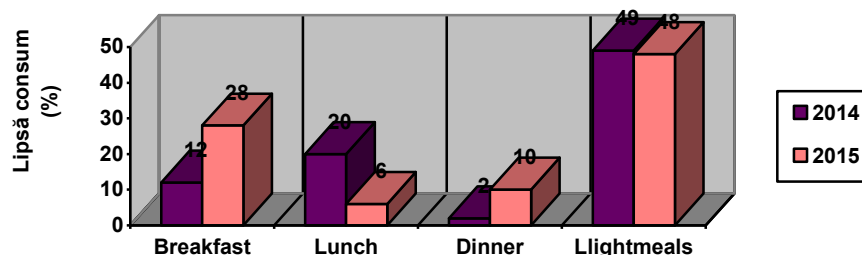


Fig.9. Absence of food consumption at the main meals

CONCLUSIONS

The diet of the population groups evaluated proved quite poor throughout the period taken into consideration, calorie ratios being insufficient and qualitatively inadequate to cover both nutritional and trophic needs, though they were judiciously structured in terms of calorie macronutrients.

The diet was based mainly on meat products and on cereals products, mostly bread, while vegetables were consumed small quantities. Fish was almost absent from the diet, while fruit intake was quantitatively inadequate. Among men, middle-aged persons had the most inappropriate diet, while women proved to eat too small quantities of food at all ages, as compared to their caloric needs. A significant proportion of subjects did not take breakfast or snacks, compensating their absence with dinners rich in calories.

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