

## Changes in food consumption in Brazil

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**SUMMARY. Changes in food consumption in Brazil.** Changes in eating habits have occurred in the last decades in several countries associated to demographic, economic, social and epidemiologic factors. In Brazil, the available data about food consumption are the result of Family Budget Surveys undertaken by Getúlio Vargas Foundation and IBGE (Brazilian Institute of Geography and Statistics) in 1961/1963 and 1987/88, respectively, and the National Study of Family Expenditure (ENDEF), carried out by IBGE during 1974/75. They reveal as principal tendencies the decreasing consumption of staple foodstuffs (beans, rice, manioc flour), pork meat, lard and butter, the replacement of bovine meat for chicken, and the increase in the consumption of eggs, milk products and vegetable oils. Based on these surveys, the intake of macronutrients in urban areas showed a decrease of carbohydrate and an increase of fat contribution as sources of calories, an increase in the consumption of animal protein in detriment of vegetable protein, and substitution of animal fats for vegetable fats. It was also observed an increase in the use of industrialized foodstuffs, directly related to income, leading to a greater diversity of foodstuffs and lower consumption of staple foods. Recent studies with adult and elderly population from the city of São Paulo show a reduction in the consumption of fatty and fried foods and sugar, and an increase in the consumption of fruits and vegetables because of health concern. Studies that take into account the verified changes in eating habits and the new consumption tendencies, as well as their impact on nutritional and health conditions of the Brazilian urban population, are presently needed.

### INTRODUCTION

Changes in eating habits have been observed in recent decades in several countries. These changes are associated, among other factors, with the development of systems of production and distribution of foodstuffs and with the phenomenon of urbanization, influencing the life-style and health of the population.

The evolution of eating habits in western countries, such as the United States and European countries, over this century shows initially an improvement in quantitative terms and then an intensification of replacement of some products by others. In general, there has been a decrease in the consumption of cereals and starchy foods and an increase in the consumption of fruits and vegetables, products of animal origin, sugar and fats.

From the seventies, new trends have been emerging, arising mainly from the concerns with nutrition and health. Among these trends, the reduction in the direct consumption of sugar stands out, as also does a decrease in the consumption of products of animal origin, especially meats, and fats, and an increase in consumption of carbohydrates, fruits and vegetables (1,2). This phase has also been characterized by a gradual replacement of manufactured foodstuffs by the traditional agricultural foodstuffs and of some manufactured foodstuffs by others.

In Brazil, the change in eating patterns is seen by some authors as being mainly a consequence of the policies which have favored the option for the economic development model of the oligopolistic capitalist type, leading to the imitation of the patterns of production and consumption characteristic of the western countries (3,4).

### SURVEYS ON FOOD CONSUMPTION

There are few data on the eating habits of the Brazilian population which would allow an assessment of their evolution over time. On a National level, the data available are those from the National Study of Family Expenditure (ENDEF), an inquiry on food intake carried out

by the IBGE (the Brazilian Institute of Geography and Statistics) in 1974/75 (5), and from the Family Budget Surveys undertaken in 1961/63 by Getúlio Vargas Foundation (6) and, in 1987/88, by IBGE (7,8).

These data surveys, despite their limitations arising from the differences in the methodologies used for data collection, provide us with information on some important changes over this period as, for example, the reduction in the consumption of staple foodstuffs (rice, beans, manioc flour), of pork and fats of animal origin (lard, butter) and the increase in the consumption of chickens, eggs, milk products (cheese, yogurt), margarine and vegetable oils (especially soya oil).

Based on the same surveys, the consumption of nutrients from foodstuffs of the Brazilian urban population was analyzed (9). There is a general tendency towards a lower contribution of carbohydrates in the total consumption of calories and their replacement by fats, especially over the period from 1974/75 to 1987/88. The increasing trend towards the consumption of animal protein and the increase in the consumption of vegetable fats replacing fats of animal origin, resulting in an increase in the consumption of polyunsaturated fatty acids and a decrease in consumption of dietary cholesterol. It is interesting to note that some of these trends are similar to those observed in the western countries in past decades, such as the reduction in the consumption of cereals and tubers and the increase in the consumption of fats and animal protein, while others, such as the replacement of animal fats by vegetable fats, have behaved differently.

Tasco in 1991 (10) analyzed the various family budget surveys undertaken in the city of São Paulo in 1971/72 and 1981/82 by FIPE (Institute of Economic Research Foundation), in 1982/83 and 1987 by DIEESE (Inter-Union Department of Statistics and Socio-economic Studies), including the ENDEF data of 1974/75. In the period from 1971/72 to 1987 a reduction in the contribution of beans, rice and bread as sources of calories was registered, parallel to an increase in that of pasta and oils. The contribution of meats and beans to the protein intake decreased in this period, while that of milk products and eggs increased. Furthermore, in accordance with these data, the consumption

of animal proteins increased in detriment of proteins of vegetable origin, which may be related to the increase in the consumption of milk and eggs.

As for the consumption of vegetables, data of the DIEESE surveys of 1982/83 and 1987, presented by Tasco (10), showed an increase of 130% in the per capita consumption of green vegetables and 65% in that of other vegetables. There was also an increase of 31% in the consumption of fruits. Another study on the consumption of fruits in the metropolitan region of São Paulo (11) concluded that there was a reduction in consumption of oranges and bananas from 1961/63 to 1974/75 and an increase in the consumption of other kinds of fruits (pawpaw, mangoes, pineapples and apples) in the period from 1974/75 to 1987/88.

With regard to the differences between the various income groups in the population, the data of the Family Budget Survey of the IBGE (7) for the metropolitan region of São Paulo showed that the five main items of expenditure regarding food consumption at home, for the families with a monthly income of less than 2 minimum salaries, reference value of October 1987, were: a- milk and dairy products, b- meats, entrails and fish, c- cereals and leguminous and oleaginous produce, d- chicken and eggs and e- bakery products (breads, biscuits). For the families with a monthly income above 30 minimum salaries, the five main items of expenses were: a- meats, entrails and fish, b- milk and dairy products, c- other products (frozen foods, potato chips, pre-prepared meals, savories, etc.), d- fruits and e- drinks (coffee, soft drinks). Noteworthy are expenses on food consumed outside the home for the higher income group: 33% of total expenditure on foodstuffs, as against 4.8% for the lowest income families.

On the basis of these data, one may observe the existence of some common and some divergent characteristics between different population groups based on their income. For example, on one hand, the share of products of animal origin (meats, dairy products) in the main items of expenditure on foodstuffs is similar, regardless of income; and on the other hand, the importance of fruits and of diversified food choices among the higher income groups, and that of the staple products (cereals, legumes and oleaginous products) among people of lower income.

As for the development of industrialized foodstuffs in Brazil, data from ABIA (the Brazilian Association of Producers of Industrialized Foodstuffs) (12) show, for 1985 to 1993, an increase in the production of chocolates (155.0%), condensed milk (147.8%), chocolate in bars (120.4%), chickens (109.5%), long-life milk (88.8%), yogurts (85.5%), milk powder (74.1%) and cream cheese (73.5%), some of them considered to be superfluous foodstuffs. There was also a reduction in the production of tomato concentrates (-29.2%), refined sugar (-19.9%), banana and guava pastes (-12.0%) and butter (-11.2%).

In a survey undertaken by Nielsen and published in the newspaper "O Estado de São Paulo" on January 8, 1996, in 1995 as compared to the previous year, there was an increase in the volume of sales for pre-prepared frozen foods (92.8%), for yogurts (89.4%), for industrialized meats (42.1%), for canned vegetables (40.1%), for fruit juices (33.5%) and for biscuits (29.6%).

The industrialized foodstuffs of greatest consumption in Brazil are still the traditional, relatively unmodified ones (vegetable oils, sugar, pasteurized milk). For products with a higher degree of transformation (dairy and meat products, canned vegetables), consumption is directly related to income but may, occasionally, be a part of the diet of the less favored groups in the population.

A pilot project was undertaken in São Paulo in 1993 by Oliveira (13) in which thirty-two women were interviewed, comprising three groups of distinct socio-economic characteristics (low, medium and high income). The results of the frequency of consumption questionnaire showed that the same staple foodstuffs appear in all three

groups, namely, rice, beans, coffee, sugar, milk, eggs, bread, beef, chicken, macaroni, tomato and potato. However, the number of foodstuffs most frequently consumed (at least once a week) increases in accordance with the rise in income as also the consumption of industrialized foodstuffs of a greater degree of transformation (dairy products, biscuits, canned vegetables). Thus it is concluded that there are similarities between the different socio-economic groups as regards to staple foodstuffs, though this was not assessed in quantitative terms in this study. At the same time, a greater diversity of foodstuffs and greater consumption of fruits and salad vegetables was observed according to the rise in income level. There also appears, in the three groups, a concern regarding eating habits and health, a trend which has been observed since the seventies in the western countries.

Recent studies by Monteiro et al. (14,15) have observed the phenomenon of "nutrition transition" in Brazil and have shown the association between the pattern of food consumption and the increase of obesity in this country.

A study was carried out in São Paulo in 1996, involving 122 women and 8 men, aged between 39 and 80, students of the Open University for the Third Age, with the purpose of assessing the changes in eating habits associated with the prevention and/or control of the chronic-degenerative diseases. The preliminary results, obtained on the basis of the analysis of the questionnaires applied, show that, in the last ten years, there has been an increase in the consumption of fruits and salad vegetables, chicken and fish and a reduction in the consumption of fatty and fried foods and sugar. Among the causes of these changes, the most noteworthy are the easier access to information, the prevention of disease, age, health problems and the need to lose weight. The eating frequency data points to a trend towards a reduction in the consumption of fats and sugar, because of the use of products such as skimmed milk, "light" margarine, "light" cheese and dietetic sweeteners, with a possible increase also in the intake of fibers, vitamins and minerals due to the more frequent consumption of fruits and salad vegetables.

## CONCLUSIONS

The changes observed on the basis of the surveys and studies quoted, reflect, on one hand, the variations in relative prices of the foodstuffs leading to the replacement of some by others, as with meat, beans and even some industrialized foodstuffs and, on the other hand, the concerns relating to nutrition and health arising from the phenomenon of the epidemiological transition which has been taking place in Brazil.

Other characteristics observed in the behavior of the Brazilian consumer, especially in the large urban centers, are the increase in food eaten away from home and the preference for the supermarket as the place for the purchase of foodstuffs, a fact which favors the diversification of foodstuffs consumed and the consumption of industrialized products. These trends must be related to changes in the life-style of the population, in the quest for amenities and saving of time spent in shopping and in preparation and/or consumption of the foodstuffs and also related to the role of supply in the distribution of certain products in detriment of staple foodstuffs (13).

The differences that exist between the various classes of the population as regards to access to foodstuffs, both in quantitative and qualitative terms, are worth emphasizing as also is the appearance of new nutritional imbalances besides the continued prevalence of the traditional forms of subnutrition.

The changes in the consumption of foodstuffs by the Brazilian population lead us further to reflect on the speed at which these changes are taking place within the different population groups and the consequences of the imitation of international patterns of consumption on the local level. To what extent do the new trends observed correspond in fact

to the practice of a healthier and more balanced diet?

The data presented in this paper demonstrate, moreover, the importance of periodical surveys which will enable researchers to gain knowledge on the consumption trends of the population in general and/or of particular groups (income, age, etc.), and to analyze this information in terms of macro and micro-nutrients for the definition of policies which seek to meet the specific nutritional needs of Brazilians.

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