

Nutritional Characteristics and Nutritional Diseases of St. Petersburg Residents

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Abstract

A sociological study was conducted among 1200 St. Petersburg residents over 18 years of age (674 women, 526 men). According to the estimates of their anthropometric data provided by the surveyed St. Petersburg residents, almost half (45.6%) of them have nutritional disorders in the form of body mass index deviation from the normal values in the direction of increased body weight. The increase in body mass index from the norm occurs as the respondents age increases. Thus, pensioners have nutritional disorders in the form of excess body weight in 28.1% and obesity in 35.5%. When assessing diet, respondents indicated that not everyone has the opportunity to eat lunch and dinner at a certain time. The vast majority of St. Petersburg residents said that vegetables and fruits are present in their diet almost every day but the amount of their consumption is insufficient. A pessimistic picture emerges of the feedback on the foods consumption enriched with vitamins and other biologically active food components. Excessive consumption of fats, sugar and confectionery, as well as pasta, cereals, bread and potatoes are more frequently present in the daily diet of those without higher education, while St. Petersburg residents with higher education are less likely to exclude dairy products, vegetables and fruits from their diet. The vast majority (75.3%) of city residents believe that irrational nutrition is harmful and can cause severe alimentary and alimentary-dependent diseases. Women, young people and those with higher education are somewhat more likely to be convinced of this.

Keywords: Nutritional Assessment; Population; Body Mass Index; Nutritional Diseases; Excess Body Weight; Obesity; Food Consumption; Age; Gender; Income; Education

Introduction

The problem of quality nutrition in Russia is recognized as a key factor in improving the life quality of the population. The state policy of the Russian Federation in the field of population healthy nutrition is a complex of measures aimed at creating conditions that ensure the needs satisfaction of different population groups in healthy nutrition, taking into account their traditions, habits and economic situation.

The tasks of state policy in the field of healthy nutrition among others include the development and implementation of state monitoring programs for nutrition and public health based on special studies of individual nutrition, including risk groups for common alimentary-dependent conditions, strengthening the promotion of healthy eating, including the use of mass media [1-3].

Most constituent entities of the Russian Federation have created programs aimed at improving the nutritional structure of the region's population, as well as the organization of health food centers in 30 constituent entities of the Russian Federation. Health centers carry out activities aimed at creating a healthy lifestyle among the population.

The actual diet of the majority of the adult population does not meet the principles of a healthy diet due to the consumption of food products containing large amounts of fat of animal origin and simple carbohydrates, the lack of vegetables, fruits, fish and seafood in the diet. Such diet leads to an increase in excess body weight and obesity, the incidence of which in the last decade has increased from 19 to 23%, increasing the risk of diabetes, cardiovascular system and other diet-related diseases especially disorders in metabolic and immune system. A large part of the working-age population is deprived of the opportunity to eat rationally during working hours (especially in small and medium companies) which negatively affects the workers health and causes the need for further development of programs to optimize the population nutrition [4-10].

Purpose of the Study

The purpose of the study is to find out nutritional diseases associated with the eating habits of the St. Petersburg population.

Methods

A sociological study of the diet and nutrition regime of St. Petersburg residents was conducted by the St. Petersburg Information and Analytical Center together with the city's dietetic service using a developed questionnaire of the diet and nutrition regime of St. Petersburg residents.

Data collection method: Standardized telephone interview using CATI system. The respondents were asked about their height, body weight, lifestyle, education, income, frequency of salt intake, foods enriched with vitamins and biologically active substances, consumption of main food groups, the actual consumption amount of different food groups by one consumer per day (in grams, eggs - in pieces per week), belief in information about the harm of irrational diet and whether it can cause serious illnesses were found out. Eating habits were analyzed by frequency of meals during the day, the regularity of meals for breakfast, the time when the respondent takes the bulk of meals during the day and the time of the last meal before going to bed. The daily volume of consumption of different food groups by the population of St. Petersburg was analyzed according to the data of state statistics authorities (Petrostat).

Sample: Population of St. Petersburg 18 years old and over, 1200 people (674 women, 526 men) divided by gender and age. Young people: men and women from 18 to 29 years old. Socially active in adulthood: men from 30 to 60 years old and women from 30 to 55 years old. Pensioners: men aged 60 and over, women aged 55 and over.

The eating habits and composition of meals during the day were analyzed among different social and demographic groups of the population.

The maximum sampling error at the 95% CI is $\pm 2.9\%$ using the STATISTICA software.

Results of the Study and Discussion

According to the estimates of their height and body weight given by the surveyed St. Petersburg residents, every second person (51.2%) has a normal body mass index (BMI). For 45.6% of St. Petersburg residents the problem of excessive body weight is relevant of whom 24.9% suffer from excessive weight and 20.7% from obesity.

They estimate that men are 1.6 times more likely to be overweight than women (31.2% vs 20.0%); women are slightly more likely to be obese (23.5% vs 17.1% for men).

Among young people (74.5%) the proportion of those with normal BMI is high.

In the group of socially active residents in adulthood 28.6% are overweight and 18.7% are obese which is about half (47.3%) of the overweight people at that age.

63.6% of pensioners suffer from overweight or obesity. This problem is 3.5 times more urgent for them than for young people and 1.3 times more urgent than for socially active people of mature age.

The increase in body mass index occurs as the respondents age increases. Among pensioners 28.1% are overweight and 35.5% are obese.

In the group of respondents with higher education (56.9%) the normal BMI is 1.4 times more common than among respondents with lower education (40.4%).

The problem of alimentary diseases in the form of obesity and excessive body weight is most relevant for persons without higher education. Among those who assess their physical activity as sufficient respondents with normal body weight make up 57.3% (versus 23.1% with excess body weight and 17.1% with obesity).

The majority (62.6%) of respondents with normal body weight and only 10.8% of those with obesity indicated a high degree of commitment to rational nutrition and the absence of excess body weight in connection with it. 37.1% of those with normal weight assessed their commitment to rational nutrition and the absence of excess body weight as partial which is slightly higher than for those who are overweight or obese (29.6% and 31.8%, respectively).

The degree of rational nutrition adherence was assessed as low by 28.9% of respondents with normal body weight. The proportion of obese people in this group is significantly higher (44.2%).

Physical activity and a commitment to a healthy diet contributes to maintaining a normal body weight which has a beneficial effect on human health.

Currently about 60% of the population in economically developed countries is overweight and 25-30% is obese. Russia is the fifth most obese and overweight country in the world after the United States, Mexico, Hungary and Scotland [11].

In the Russian Federation at least 30% of the able-bodied population are currently overweight of which 25% are obese [5].

According to Rosstat data for 2018 (See table 1) obesity is most common in the Ural, Central and Siberian federal districts of Russia. The rates are slightly lower in the Northwestern, Far Eastern and Volga districts. The North Caucasian Federal District is the most favourable for this problem.

Federal district of Russia	Men	Women
North Caucasian Federal District	15,30	23,20
Siberian Federal District	16,10	31,05
Northwestern Federal District	18,51	29,73
St. Petersburg	17,10	23,50
Southern Federal District	19,75	30,98
Far Eastern Federal District	18,10	28,67
Volga Federal District	15,90	29,64
Central Federal District	19,32	32,65
Ural Federal District	20,83	34,50

Table 1: Prevalence of obesity among residents of different federal districts of Russia.

An optimal diet is observed by 67.0% of St. Petersburg residents of whom 42.3% eat three meals a day and 24.7% eat four meals a day.

Every third person (33.3%) deviates from the recommended dietary norms by eating twice a day or less (21.7%), five times a day or more (11.3%). Among pensioners the lowest share (13.8%) of those who eat two meals a day or less. Men (27.6%) are 1.6 times more likely than women (17.2%) to limit themselves to eating twice a day. Frequent meals (4 - 5 times) are more typical for women.

St. Petersburg residents of socially active adulthood do not set aside a certain amount of time for lunch more often than others (30.8% compared to 20.7% - 23.4% in other age groups).

Half of the respondents (48.7%) consume most of their daily diet during lunch. A quarter (23.2%) have their main meal during dinner. Every fifth respondent (21.9%) does not have a certain time when he or she eats the main amount of food.

About half of both men and women consume the main part of their diet at lunchtime. More than a quarter of women (27.8%) name dinner as their main meal time which is 1.4 times more common than for men (19.7%).

Half (49.3%) of St. Petersburg residents eat with little or no salt, a third (34.4%) consume moderate amounts of salt and every sixth resident prefers salty foods, most of whom are men (the proportion of men drinking salty foods is 18.1%, while the figure for women is markedly lower, at 13.6%).

The use of vitamins in the form of tablets, solutions and syrups is not widespread among city residents: often (every month) they are used only by every fifth person, a course two times a year - by every fourth and only during illness - only every sixth St. Petersburg resident.

One-third (33.8%) stated that they never take vitamins in the form of medication.

In daily life women more often than men take vitamins in the form of medications at different (monthly or twice a year) intervals (57.6% vs 36.9%); there is no difference in case of person illness.

Less than half (41.7%) of St. Petersburg residents consume foods enriched with vitamins, minerals and other biologically active food components with some frequency (monthly or 1 - 2 times a year). One third (35.5%) of citizens completely excluded them from their diet, 5.6% consumed them only during illness. A rather high (17.2%) is the proportion of those who found it difficult to answer.

Consumption of foods enriched with biologically active food components at intervals of 1 - 2 times a year is more likely to be affordable for middle- and high-income individuals (16% vs 10% in low-income groups). Despite the pessimistic picture of responses about the foods consumption enriched with vitamins and minerals, the vast majority (72.9%) stated that fruits and vegetables were present in their diet almost daily. This is the highest figure for daily intake.

Excessive consumption of food products is observed in 2 groups of products: sugar, confectionery and meat products.

In the citizens daily diet the consumption of sugar and confectionery is 10% higher than the maximum recommended amount which is a negative factor in the formation of a balanced diet.

St. Petersburg residents actively consume meat products (exceeding the maximum recommended daily volume by 9.8%); a positive factor is the sufficiency in the consumption of fish products (5.5% higher than the minimum recommended volume).

St. Petersburg residents consume milk and dairy products in optimal amounts (99.2% of the average recommended consumption).

There is a significant deficit in the consumption of bread products and potatoes (21.3% and 40.8% lower (respectively) than the minimum recommended amount).

Differences in the frequency of consumption of different food groups are gender-specific. Among women there are more daily consumers of fats and sweets, but not by much: 38.9% vs 32.1%. The same is true for milk and dairy products: 58.6% vs 49.6%, a slightly larger gap in the daily consumption of fruits and vegetables: 80.1% vs 63.5%. Men more often than women consume these groups of products with a less frequency of 1 - 4 times a week. In turn, women use pasta, cereals, bread and potatoes less frequently than men in their daily diets (41.2% vs 55.7%); in addition, the proportion of women who hardly ever or rarely consume these products is 2.5 times higher than among men.

Pensioners are less likely than St. Petersburg residents in other age groups to consume fats and sweets: the proportion of those who consume such foods almost never or rarely is the highest (28.4% vs 19%) and also the lowest (29.2% vs 39.6% to 44.1%) proportion who consume them 1 - 4 times a week.

The leaders in daily consumption of pasta, cereals, bread and potatoes are pensioners which is related to their income level.

Fats and sweets are more frequently present in the weekly diet of high-income St. Petersburg residents (45% vs 30.5% - 35.9%).

The vast majority (75.3%) of citizens believe that irrational nutrition is harmful and can cause serious illness. Every seventh resident of St. Petersburg does not agree with this statement and every ninth resident found it difficult to answer. Women (78.2% vs 71.7% of men), young people (82.2% vs 72.5% - 73.8% in other groups) and St. Petersburg residents with higher education (77.7% vs 70.6% of those without higher education) were somewhat more convinced that an irrational diet is harmful.

Conclusion

It should be noted that violation of the basic principles of a healthy diet leads to an increase in alimentary diseases in St. Petersburg residents which are usually manifested by excess body weight and obesity. Such unhealthy nutritional status in persons with alimentary forms of diseases leads not only to various metabolic disorders but also to weakening of immunity, dysregulation of hormonal activity, functions of certain organs and systems of the body and is associated with increased incidence of cardiovascular, pulmonary and endocrine system disorders as well as infectious and viral pathology.

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