

Peculiarities of population compliance with the rules of dietary nutrition for health promotion

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ABSTRACT

Aim: To study the attitude of the population of Ukraine to the rules of dietary nutrition to improve their health.

Materials and Methods: The research which involved 214 respondents (38 men and 176 women) of different ages. Research methods: bibliosemantic, medical and sociological (survey), statistical. The survey was anonymous and it was conducted according to the author's questionnaire.

Results: It has been found that the 79.0 % of the respondents are unaware of the importance of dietary nutrition and its significance in promoting health, and incorrectly define the term "dietary nutrition". It has been found that 44.0 % of the respondents are overweight, 11.0 % are obese of varying degrees; 78.0 % of the respondents consume excessive amounts of sour and pickled food, 71.5 % eat sugar and sweets, 52.8 % – fatty, smoked, and fried food, 45.3 % – bakery products, 22.9 % – fast food; only 26.0 % know about the norm of the ratio of nutrients in food and try to adhere to it. This indicates that the vast majority of the respondents have an unbalanced and chaotic diet, and do not follow dietary rules.

Conclusions: Nutrition is one of the factors influencing public health. An optimal healthy diet can improve human health and prevent most non-communicable diseases. The results of the research can be used in the course of outreach and awareness-raising activities by public health professionals to prevent chronic non-communicable diseases among the population.

KEY WORDS: nutrition, diet, health, healthy lifestyle

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INTRODUCTION

High-quality, healthy nutrition is the key to maintaining and improving the health of the population of any country. According to experts [1], a healthy diet helps prevent multifactorial non-communicable diseases and treats existing diseases. In contrast, inadequate and irrational nutrition provokes a weakening of the immune system, increased susceptibility to disease, impaired physical and mental development, and reduced productivity and learning. The consequences of improper (irrational) nutrition are most often diseases of the gastrointestinal tract, cardiovascular, excretory, hepatobiliary, and endocrine systems [2].

There is a need for dietary nutrition that will help to correct metabolic processes, promote health, and prevent diseases in the population. According to experts [3], an imbalance in the chemical composition of diets, namely an insufficient amount of some components and an excessive amount of others, is a major risk factor for the development of chronic non-communicable diseases. Food in the diet

of a modern person is a supplier of energy, and if there is a disproportion of nutrients, the amount of energy can be excessive. Therefore, the task of dietetics is to balance the nutrients of food and thus achieve its optimal value. With this in mind, studying the impact of dietary nutrition on promoting the health of Ukrainian citizens and developing promising areas for the dissemination and implementation of healthy eating is an important public health task.

AIM

The aim is to study the attitude of the population of Ukraine to the rules of dietary nutrition to improve their health.

MATERIALS AND METHODS

The research was conducted in 2022-2024 at Zhytomyr Medical Institute of Zhytomyr Regional Council and Zhytomyr Ivan Franko State University. The research involved 214 respondents (38 men and 176 women) of different ages

(18 to 70 years and older). The ratio of the respondents by age is as follows: 18-29 years old – 17.0 %, 30-39 years old – 19.0 %, 40-49 years old – 28.0 %, 50-59 years old – 15.0 %, 60-69 years old – 18.0 %, over 70 years old – 3.0 %. All respondents were patients of outpatient clinics in Zhytomyr city.

Research methods: bibliosemantic – to study the existing world and national practices of dietary nutrition and its impact on the state of health of the population; medical and sociological (survey) – to determine the awareness of the population about the features of dietary menus, their importance for the treatment and prevention of chronic non-communicable diseases, as well as to study the impact of dietary nutrition on the health of the population of different ages; statistical – to analyze the results of medical and sociological research. The survey was conducted using the author's questionnaire. The questionnaire has a standard structure and contains the following components: addressing the respondent, obtaining the respondent's consent to participate in the study, and the main section with targeted questions (35 questions). The questionnaire was anonymous without any references to the authors of the article in the answers. The results were used for scientific purposes only. Questionnaire was assessed by the experts in this field (3 professors and 3 associate professors) and was approved by the Academic Council of Zhytomyr Ivan Franko State University (Protocol No. 2 dated 12.09.2022).

Data calculation, processing, and analysis of the research results were performed on a personal computer using a software package that allows the use of statistical data processing methods – MS Excel. Consent to voluntary participation in the survey was obtained from all the respondents involved in the study. This research followed the regulations of the World Medical Association Declaration of Helsinki – ethical principles for medical research involving human subjects.

RESULTS

It has been found that 83.0 % of the respondents live in a city, and the rest – 17.0 % – in a village or town. Only 9.0 % of the respondents have a medical degree. The study of the respondents' answers about their body weight and height allowed us to determine their body mass index, which is calculated as the ratio of body weight in kilograms to height in meters squared. The results allowed us to divide the respondents into the categories of "less than normal", "normal", "overweight" and "obese", as shown in Fig. 1. The distribution of the calculated indicators shows that the vast majority of the respondents are overweight (44.0 %), and 11.0 % are obese to varying degrees. As it is well known, an increase in body mass index indicates a risk of stroke in men and women, development of gastrointestinal pathologies, etc.

Research shows that the impact of certain dietary factors has a significant impact on public health. For example, excessive salt intake, insufficient whole grains and fruits in the diet, high consumption of red meat and sweetened beverages, and trans fats can cause more than 50 % of

deaths related to nutrition. The results of answers to the question "Which of the following foods do you consume in excess?" show that 78.0 % of the respondents consume sour and pickled foods, canned foods, and preserves in excess; 71.5 % consume sugar and sweets. Half of the respondents (52.8 %) abuse fatty, smoked, and fried foods. Slightly less than half of the respondents (45.3 %) consume a lot of bakery products. A fifth of the respondents abuse fast food and excessive salt – 22.9 % and 18.0 %, respectively.

Food is the most important factor affecting blood sugar levels. Blood sugar levels are important for human health. Optimal blood sugar levels help ensure normal body function, while high or low blood sugar levels can lead to health problems. Carbohydrates, such as sugar and white flour, are quickly broken down into glucose and absorbed into the bloodstream, causing a rapid rise in blood sugar levels. Glucose levels can increase after eating, so people with diabetes should carefully follow dietary recommendations and closely monitor their sugar levels. It has been found that more than half of the respondents (53.3 %) "systematically" take blood tests to monitor glucose levels; more than a third of the respondents (36.0 %) said they check their glucose levels only when directed or recommended by their doctors.

Nutritionists note that a snack is the consumption of food or drink between meals. Snacks include tea or coffee breaks, cookies, chips or popcorn, etc. The main purpose of any snack is to satisfy hunger. The analysis of the answers to the question about the availability of snacks between main meals shows that a significant number of the respondents – 71.0 % answered the question about snacks in the affirmative. Only 29.0 % of the respondents do not have snacks between meals. It has been found that the largest share of snacks was made up of pastries (buns, pies, cookies, muffins, cakes, pancakes) and sweets (candies, chocolate, chocolate bars, waffles) – 24.3 % and 17.1 %, respectively; tea or coffee – 16.4 %, sandwiches with cheese or sausage – 16.4 %; seasonal fruits (apple, pear, strawberry, cherry, orange, banana) – 13.8 %; fruit juices or compote – 5.9 %; potato chips, crackers, dry noodles – 3.3 %; energy drinks – 2.6 %; sweet carbonated drinks – 1.3 %.

The following results were obtained when asked "What influences the choice of food you eat the most?" 45.0 % of the respondents choose food according to their financial capabilities; 21.0 % consider the "healthiness of food"; 18.0 % listen to advertising and the media (television, radio, Internet, street advertising); 16.0 % follow family traditions.

The results of answers to the question "Do you think it is important and appropriate to follow a diet?" show that one-third of the respondents do not consider it necessary to follow the principles of dietary nutrition. The share of such answers was 31.0 %. The majority of the respondents know little about dietary nutrition and primarily associate it with starvation and compliance with "beauty standards."

According to nutritionists, the basis of a healthy diet is a balanced meal (three or four times a day), with a

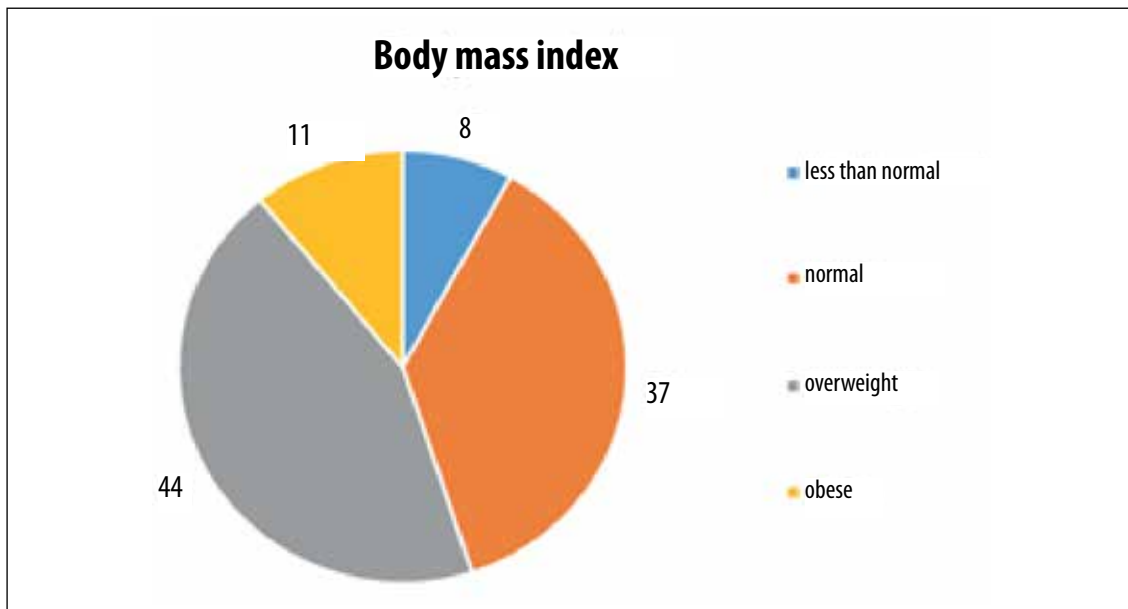


Fig. 1. Ratio of the respondents by body mass index (n = 214, %).

redistribution of calories: breakfast should account for 20-25 % of calories, lunch – 50-55 %, and dinner – 20-30 %. In addition, the ratio of proteins, carbohydrates, and fats should also be balanced and should be 1:4:1. It has been found that only a quarter of the respondents (26.0 %) are aware of the norm of the ratio of nutrients in food and try to adhere to it. The vast majority – 67.0 % – do not know about this distribution and, accordingly, do not adhere to it, stating that the choice of food depends on the desire, financial capabilities, and availability of food in a certain period. Similar answers were given to the question “Do you observe the ratio of the amount of food for breakfast/lunch/dinner in your daily diet?”. From there, 74.0 % of the respondents answered “no”. Some of these respondents do not adhere to this ratio because they eat only 2 meals a day.

The results of the next question “Do you have sufficient knowledge about dietary nutrition and its importance for health promotion?” have shown that the vast majority of the respondents (79.0 %) are unaware of the meaning of dietary nutrition and its importance for health promotion. The distribution of answers to the question “Does a person’s diet affect their health?” confirms that the respondents have insufficient knowledge about the impact of dietary nutrition on health promotion. One-third of the respondents (32.0 %) mistakenly believe that diets harm health rather than promote it.

To promote health, nutritionists recommend following a “healthy” diet, which regulates nutrient content, reduces the risk of cancer, helps to overcome depression, and improves well-being. After all, a healthy diet improves human health. Dietary nutrition is the introduction of a lifelong way of eating. However, when asked the question “If your weight starts to increase, do you eat less than usual?” 25.0 % of the respondents answered “sometimes”;

21.0 % – “never”; 17.0 % – “very rarely”. This distribution indicates that a significant number of the respondents do not associate weight gain with their diet and do not care about their health. At the same time, one-third of the respondents stated that they do not monitor the amount of food they consume. When asked about the respondents’ opinions on refusing food and drinks to maintain weight, the following distribution of answers was obtained: 14.0 % answered “very often”, 21.0 % answered “often”, and 20.0 % answered “sometimes”.

Nutritionists note that to lose weight, one should consult a doctor, increase physical activity, review their eating habits, and change them to more rational ones. The analysis of answers to the question “Do you choose food on purpose to lose weight?” showed that a significant cohort of the respondents “often” or “very often” deliberately choose food for weight loss – 27.0 % and 22.0 %, respectively. It has been also found that 26.0 % of the respondents “very often” eat breakfast, lunch, and dinner at the same time, 26.0 % “often”, 23.0 % “sometimes”, 17.0 % “very rarely”, and 8.0 % “never”. When asked about the respondents’ opinion on the healthiness of the food they eat, it was found that 25.0 % of the respondents do so “very often”, 24.0 % – “often”, 24.0 % – “sometimes”, 18.0 % – “very rarely”, and 9.0 % – “never”. This distribution indicates that half of the respondents try to keep track of the healthiness of the food they prefer. At the same time, the respondents do not always monitor the ratio of proteins, fats, and carbohydrates in their daily diet, in the vast majority, do not adhere to it. The largest share of the respondents answered “never” (33.0 %) and “very rarely” (23.0 %). The following distribution of responses was revealed when asking the respondents about vitamins in the food they consume: “very often” – 9.0 %, “often” – 14.0 %, “sometimes” – 16.0 %, “very rarely” – 32.0 %, “never” – 29.0 %.

The distribution of answers to the question "How often do you try not to eat in the evening because you are watching your weight?" was as follows: "very often" – 19.0 %, "often" – 27.0 %, "sometimes" – 17.0 %, "very rarely" – 17.0 %, "never" – 20.0 %. This trend is negative, as it has been found that evening meals worsen sleep and lead to fat storage. At the same time, 32.0 % of the respondents "very often" overeat for the night, 27.0 % – "often", 18.0 % – "sometimes", 15.0 % – "very rarely", and 8.0 % – "never". Analyzing the results of the survey, we can conclude that the majority of the respondents have an extremely unbalanced and chaotic daily diet. 32.0 % of the respondents "very often" overeat, 25.0 % – "often", 21.0 % – "sometimes", 15.0 % – "very rarely", 7.0 % – "never".

DISCUSSION

The problem of preserving human health is always relevant, especially for the population of Ukraine today. According to the researchers [4], health is one of the most important resources necessary for the development and realization of the personal potential of each person. It is a multidimensional phenomenon, complex and heterogeneous in its structure. As scientists point out [5], studying the factors that influence health, as well as understanding the significant role of the individual in health protection and health promotion, will increase the effectiveness of influencing this process. Scientists [6, 7] divide the factors that shape the level of health into the following groups: 1) socio-economic – determine the conditions and lifestyle of the population. The share of such factors is 50-55 %. These include working conditions, material well-being and living conditions, quality and level of nutrition, recreation, etc.; 2) socio-biological factors – determined by heredity. They account for 15-20 %. This group includes such factors as age, gender, predisposition to hereditary diseases, etc.; 3) environmental and natural-climatic factors – environmental pollution, average annual temperature, extreme natural-climatic events, etc. They account for 20-25 %; 4) organizational or medical factors – determined by the level of medical care. They account for 10-15 %. These factors include the provision of medical and social assistance to the population, its quality and accessibility, etc. According to researchers [8], lifestyle, in particular the level and quality of nutrition, has the greatest impact on human health. Thus, healthy nutrition is one of the most important factors that ensures and guarantees human health, the ability to work, determines the quality and duration of life, and the ability to withstand external adverse influences [9]. Rational and balanced nutrition combined with regular physical loads form the basis of a high level of health. Incorrect and unbalanced (irrational) nutrition leads to a weakening of the immune system, a decrease in human productivity, an increase in morbidity, and a violation of the physical and mental state [2].

In Ukraine, nutritionists advise adhering to the following nutrition model – "Ukrainian plate of healthy food", which is divided into five sectors, each of which is represented by the most useful food products that should be consumed

daily [10]. The first and largest sector is traditional Ukrainian vegetables and legumes (beets, carrots, onions, garlic, pumpkin, cabbage and zucchini, cucumbers and tomatoes, peas, beans, chickpeas, lentils, soybeans, and others). The second segment includes fruits and berries (apples, pears, apricots, plums, bananas and oranges, strawberries, blueberries, raspberries, currants, blackberries, and others). The list of fruits and berries according to the Ukrainian healthy food plate should be in a person's daily diet. The next sector is milk, dairy, and fermented milk products. The fourth sector is represented by whole grain products, nuts, and seeds (various cereals, bread and bread rolls, durum pasta). The last, fifth segment includes meat and meat products, eggs, and fish. Scientists [11] claim that diet is one of the most important methods of treatment for many diseases. For diseases such as mild diabetes or alimentary obesity, it is the only method of treatment. The main principles of therapeutic nutrition are the correct selection of products and compliance with the technological rules of culinary processing, the temperature of the food, as well as the frequency, time, and number of meals. Experts [12] are convinced that exacerbations of many diseases are associated with various nutritional disorders. The consumption of sugary foods in diabetes mellitus leads to a sharp rise in blood sugar, dry mouth, and increased thirst. The progression of fatty infiltration of the liver and pancreas and chronic pancreatitis is observed after eating fatty foods, alcoholic beverages, fried foods, etc. A large amount of salt in food provokes an increase in blood pressure in people with hypertension [3].

According to scientists [13], medical nutrition (diet therapy) is used for therapeutic or preventive purposes using specially formulated food rations and dietary regimens. Dietary therapy is an integral and essential aspect of the overall treatment plan for all diseases, which aims to restore metabolic disorders and correct the state of human health by excluding foods that hurt diseased organs. The dietary regimen depends on the nature of the disease, its stage, the patient's condition, and individual characteristics. The vast majority of diets should contain the physiological norm of all nutrients. This is especially true for diets prescribed for a long time. If there is an increased need for certain nutrients due to the disease (increased consumption of protein, vitamins, iron, fluid loss, mineral salts), the content of individual components can be increased. The basis of medical nutrition is compliance with its regimen, which should take into account the following rules [1, 6, 14, 15]:

1. Adhere to dietary prescriptions (tables), quantitative and qualitative distribution of the daily ration, and intervals between individual meals. The optimal interval between meals is 4 hours. A second breakfast is organized for five meals a day, and an afternoon snack for six meals a day.
2. Eat meals at the same time and with a certain frequency. The night break should be 10-11 hours, and it is not recommended to eat two hours before bedtime.
3. Take into account the qualitative composition of food (increase or decrease in proteins, fats, carbohydrates,

etc.) and its quantity. Portion size, taste, and physical properties of food are important. The temperature of hot dishes should be about 60°C, and cold dishes 10-15°C.

4. Adhere to the approaches to culinary processing of food (degree of grinding, heat treatment, steaming or boiling in water, baking, etc.).
5. Do not forget about the importance of appetite and everything that contributes to it. The aesthetic design of dishes, table setting, and the creation of a calm atmosphere during meals are important. Tables in the dining room should be designed for 2-4 people. Only patients who are on the same diet should be brought together at the tables.

CONCLUSIONS

The research has shown that the vast majority of the respondents (79.0 %) are unaware of the meaning of dietary nutrition and its importance in promoting health, incorrectly define the term “dietary nutrition”, and mistakenly associate diet with weight loss. At the same time, succumbing to general trends and beauty standards, they do not take into account that rapid weight loss can occur due to deprivation of energy, vitamins, and nutrients. All food mistakes affect human health. It has been found that 44.0 % of the respondents are overweight, 11.0 % are obese of varying degrees; 78.0 %

of the respondents consume excessive amounts of sour and pickled food, 71.5 % – sugar and sweets, 52.8 % – fatty, smoked, and fried food, 45.3 % – bakery products, 22.9 % – fast food; only 26.0 % know about the norm of the ratio of nutrients in food and try to adhere to it; 32.0 % of the respondents overeat “very often”, 25.0 % – “often”, and 21.0 % – “sometimes”. This shows that the vast majority of the respondents have an unbalanced and chaotic diet.

It has been shown that the consequence of improper and unbalanced nutrition and abuse of the amount of food consumed or complete rejection of it is the deterioration of health and the development of chronic diseases. The survey results have also shown the desire of the Ukrainian population to increase their knowledge of dietary nutrition, and indicated areas of outreach and awareness-raising activities by public health professionals on healthy eating and healthy lifestyles. Thus, nutrition is one of the factors influencing public health. An optimal healthy diet can improve human health and prevent most non-communicable diseases. Dietary nutrition is a means of normalizing health, preventing and treating chronic diseases, and maintaining high working capacity.

Prospects for further research are in assessing the quality of nutrition and compliance with dietary rules by students of higher educational institutions in Ukraine.

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CONFLICT OF INTEREST

The Authors declare no conflict of interest

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