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**MODEL OF PROVIDING LIFE QUALITY AND SAFETY
OF NUTRITION IN EDUCATIONAL ENVIRONMENT**

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Abstract

The urgency of the problem under study is conditioned by the lower level of population's food security and quality during continuous education, as well as by the importance of the conscious choice of nutritious food, which implies the consumption of enough quantity of proteins, fats, carbohydrates, vitamins, macro- and microelements for normal functioning of an organism in general. The aim of the paper is to elaborate recommendations on creating conditions that that would provide students undergoing continuous education with knowledge on high-quality and safe nutrition, food ration, regular access to physical education and popular sport, leading a healthy lifestyle. The leading method was a pedagogical experiment that could help to reveal the facts of poor and unbalanced day-time nutrition among students. The state of students' health during the study period has been monitored and evaluated. The nutrition priorities of modern youth, their conscious choice of foods and life style are examined. The main results of the work was the model of the food safety in continuous education developed by the authors.

Keywords

Food safety — Health — Student — Stress — Ration — Nutrition — Products — Priority

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Introduction

Modern education is treated as a basis for innovative development of economy and society and a tool for bringing the country to the innovative way of development. Preservation and strengthening of young people's health and training them for their future professional activity are the priorities in the work of educational establishments of higher professional education¹.

It is not occasionally that recently, the state of students' health in Russia has attracted the attention of the country's leaders. Improving the health of population is a crucial state issue, while the formation of a healthy nation is a priority². Many factors determine one's health: life period, one's lifestyle, nutrition; heredity is important, too, since it unites natural peculiarities of an organism received by a person from his parents and predecessors³. Nutrition is a basis for life and the main factor determining health, longevity and performance capacity of a person⁴. In case of any impairments of nutrition, the ability to resist the unfavorable impact of environment, stresses, high intellectual and physical loads dramatically reduces⁵.

Unwillingness to go in for sport and physical activities, unwillingness to choose healthy foods and stress are the main enemies in the struggle for health⁶. The issue of nutrition is especially burning for students⁷. Since students are short of time, they cannot follow a correct regime of taking food 3–4 times a day. Besides, they usually have sedentary lifestyle — hypokinemia. Together with bad food ration, this affects an organism and its state negatively. A period of studying in the university is miscellaneous and rich in events, besides, it is characterized by a great overwork of nervous system⁸. Loading, especially during the examinations, increases significantly up to 15–16 work hours per day. Permanent lack of sleep, work-sleep regimen and diet violation, as well as intensive information loading may

¹ V. M. Kantere; V. A. Matison; N. A. Khangazheeva and Yu. S. Sazonov, *System of Food Safety Based on the HACCP Principles* (Moscow: The typography of the Russian Academy of Agricultural Sciences, 2004).

² N. A. Korbukova; E. G. Podkopayeva and A. A. Serdyukov, "Harmonious Physical Development of a Student and the Use of Anthropometric Study in Education Process", *The 3rd International Applied Research Conference Current Issues of Psychology and Pedagogy. Collection of Articles of the International Applied Research Conference* (2014): 44–47.

³ N. A. Korbukova; E. G. Podkopayeva; A. A. Serdyukov; N. N. Karelina and I. V. Shelegin, "Optimization of Physical Fitness of Students with Weakened Health", *Biosciences Biotechnology Research Asia* Vol: 12 issue 1 (2015): 191-196.

⁴ N. A. Korbukova; E. G. Podkopayeva; S. N. Loktionova; N. P. Soltan and I. A. Budnikova, "Quality of Students' Nutrition and Elaboration of the Nutrition Culture Among Students", *American-Eurasian Journal of Sustainable Agriculture* num 8(6) (2014): 49-51.

⁵ A. A. Kudryasheva, "Recent trends in the scientific and technical progress in the sphere of nutrition, health, and ecology", *Pishchevaya promyshlennost* num 9 (2005): 109-113.

⁶ N. A. Korbukova; E. G. Podkopayeva; S. N. Loktionova; N. P. Soltan and I. A. Budnikova, "Student's Sport as Indicator of Cultural Development of Society", *International Review of Management and Marketing* Vol: 6 num 3S (2016): 195-199.

⁷ E. A. Chepurnaya and T. Yu. Pavlova, "Modern Challenges of Students' Nutrition", *Scientific student community of the 21st century. Natural Sciences: Collection of Articles Based on the Materials of the 18th International Student Applied Scientific Conference* num 4 (18) (2014): 120-126.

⁸ A. A. Tikhomirov; N. A. Korbukova and A.S. Noskova, "Methodological Aspects of the Expansion of a Function of Food Quality for the Students", *Mezhdunarodnyy nauchno-issledovatel'skiy zhurnal "Uspekhi sovremennoy nauki i obrazovaniya"* issue 8(4) (2016): 76-84.

lead to neuro-psychical breakdown. It is very important to organize rational nutrition correctly to compensate negative effect of this situation⁹.

The main challenges in this area include the issues of safety and rationalization of students' alimentation, which made specialists to recognize the need in searching for new trends and benchmarks of development¹⁰. People's health and duration of their active life are clear integral indices of life quality closely associated with the peculiarities of nutrition and state of environment¹¹. How does an organism develop? For example, a following approach to the periodization of the developmental age is known:

Early childhood

- Infancy (0–1 year)
- Early age (1–3 years)

Childhood

- Pre-school age (3–7 years)
- Primary school age (7–11/12 years)

Teenage

- Adolescence (11/12–15 years)
- Early youth (from 15 years)

Our audience is at the stage of the early youth, when a person becomes relatively free in choosing nutrition and begins to build his life independently. It is at this period that people experience stressful circumstances and face the issues that require immediate solution¹². Besides, it is at this period that respondents begin to comfort eat, i.e. failing to cope with problems, start to consume any foodstuff in large amounts without considering whether they are good or bad for health. Nutrition in time of stress is a crucial national challenge¹³.

The strategic goal is to create conditions that would provide students undergoing continuous education with knowledge on high-quality and safe nutrition, food ration, regular access to physical education and popular sport, leading a healthy lifestyle and to enhance the status of Russia as a leading global sport power of the 21st century¹⁴. To achieve this aim means to form a completely new image of Russia of the future — physically and

⁹ A. F. Doronin and B. A. Shenderov, *Functional Eating* (Moscow: Granit, 2005).

¹⁰ L. I. Voyno y I. A. Voyno, "Problema prodovolstvennoy bezpasnosti v postindustrialnom obschestve", *International journal of experimental education*, num 11 (2011).

¹¹ N. A. Korbukova; A. V. Tarasov y A. S. Popov, *Zelenaya ekonomika kak faktor vliyaniya na zdorove cheloveka. Den Nauki Obshcheuniversitetskaya nauchnaya konferentsiya molodykh uchenykh i spetsialistov* (Moscow: Moscow State University of Food Manufacturing, 2016).

¹² N. A. Korbukova y E. G. Podkopaeva, *Tekhnologii i produkty zdorovogo pitaniya v formirovanii kultury studenta*, *Perspektivy nauki*, num 3 Vol: 42 (2013): 19–23.

¹³ A. N. Bogatyrev, *Obogashchenie produktov vitaminami — aktualnaya tema XXI veka*", *Pishchevaya promyshlennost*, num 9 (2010): 72–73.

¹⁴ V. M. Vernikov; E. A. Arianova; I. V. Gmoshinskiy; S. A. Khotimchenko y V. A. Tutelyan, "Nanotekhnologii v pishchevykh proizvodstvakh: perspektivy i problemy", *Voprosy pitaniya*, num 2 (2009): 4–18.

spiritually healthy and sportive nation, whose citizens lead a healthy lifestyle and are engaged in physical training and sport on a regular basis.

The following tasks should be solved: it is necessary

1. to define the physical activity level;
2. to define the students' food ration;
3. to establish an adequate food ration;
4. to satisfy the need of an organism for nutrients.

Materials and methods

A questionnaire survey was conducted, in which 160 students participated. A number of calories consumed by students was compared with the number they needed according to the norms. Besides, we have calculated a number of proteins, fats, and carbohydrates in the students' daily ration and compared them with the norms for their age. This paper presents the results obtained in the study.

The questionnaire survey was conducted among the second year female students. The age of the girls was 19 to 20. We focused on girls, since the practice of inadequate diets aimed at consuming less calories and losing weight within a short space of time is very popular among them. The girls were asked to fill in Table 1.

Question	Options	Answers (%)
1. How many times a day do you eat?	a) 1–2 times b) 3–4 times c) 4–5 times d) 5–6 times	25% 40% 25% 10%
2. Where do you usually eat during your studies?	a) at home (in a hall of residence) b) in a canteen c) I take food with me from home d) in fast food restaurants e) other	20% 50% 5% 20% 5%
3. What do you usually have for breakfast?	a) tea (juice, coffee), sandwiches, sweets b) porridge (muesli), fruits (vegetables), tea (juice, water) c) yoghurt (kefir) d) I only drink coffee (tea, juice, water) e) I do not have a breakfast f) other	10% 9% 5% 5% 61% 10%
4. How often do you overeat?	a) never b) sometimes c) often	60% 30% 10%
5. Do you eat too much fatty food?	a) no b) sometimes c) often	35% 50% 15%
6. Do you eat too much carbohydrates?	a) no b) sometimes c) often	10% 30% 60%

7.	Do you eat too much pastries?	a) no b) sometimes c) often	10% 30% 60%
8.	Do you drink too much alcohol?	a) no b) sometimes c) often	60% 35% 5%
9.	What prevents you from eating healthy?	a) nothing, I eat healthy b) lack of time (due to work and studies) c) laziness d) other	15% 35% 35% 15%
10.	What products do you try to consume more often to ensure healthy nutrition?	a) fruits/vegetables b) cereals b) fish/meat c) dairy products d) I do not try to eat healthy food	13% 10% 30% 30% 17%
11.	How much money on average do you spend for buying food in a week?	a) more than 3 000 rubles b) 2 001–3000 rubles c) 1 000–2 000 rubles d) less than 1 000 rubles	20% 30% 40% 10%
12.	What products are the most dangerous for human health, in your opinion? (choose at least 3 variants)	a) fast food, sweet soda drinks b) sausages, preserves c) low-calorie and fat free products d) alcohol d) popcorn e) chocolate bars, candies, jelly beans f) mayonnaise and ketchup	50% 10% 5% 10% 5% 15% 5%
13.	Do you take vitamins?	a) no b) once a year c) twice a year d) three times a year and more frequently	49% 21% 19% 11%
14.	Do you think that the food you eat influences your state of health and look?	a) yes, obviously b) rather yes than no c) rather no than yes d) no influence at all	45% 20% 20% 15%
15.	What can motivate (has already motivated) you to eat healthy food?	a) state of health b) friends/relatives c) desire to look well d) other	70% 10% 15% 5%
16.	In general, what is your attitude to the abundance of TV programs about a healthy lifestyle in general and healthy nutrition in particular?	a) positive, such programs make a healthy lifestyle popular among population b) in general, not bad, though I'm not always interested in watching such programs b) I'm absolutely indifferent to such TV programs, as I don't watch TV c) negative, such programs have completely occupied the TV space	20% 30% 35% 25%
17.	In your opinion, why should people eat healthy food?	a) medical indications (gastrointestinal tract diseases, etc.) b) to look better	40% 35%

	c) because it is popular d) other	10% 15%
18. How many times a week do you have a dinner?	a) 7–6 times b) 5–4 times c) 3–2 times d) 1–0 times	2% 7% 26% 65%
19. How often do you have a snack throughout a day?	a) 1–2 times a day b) 3–4 times a day c) 5–6 times a day	46% 31% 23%
20. What products and drinks do you use as a snack?	a) sweets and high-calorie products b) sweets, fruits, starchy food c) “healthy” products	31% 50% 19%
21. How many calories a day do you consume?	a) I don't know b) 500–1900 Cal c) 2000– 2700 Cal d) 3000–3700 Cal e) <4000 Cal	70% 15% 8% 6% 1%
22. Do you think that your nutrition is rational?	a) yes b) no	22% 78%
23. What peculiarities of nutrition does your family have?	a) no peculiarities b) healthy nutrition b) too much sweet, salty, etc. food	35% 37% 28%
24. What is the percentage proteins, fats and carbohydrates in your of nutrition?	a) proteins b) fats c) carbohydrates	31% 25% 49%
25. How much water a day do you drink?	a) > 950 ml b) 1000 - 2000 ml c) 2000- 3500 ml	28% 41% 31%
26. You were brought:	a) in a city b) in a town c) in the countryside	65% 25% 10%
27. Do you think that you have bad habits?	a) yes b) no	80% 20%
28. How do you spend your free time?	a) sitting at home, watching TV or playing computer games b) walking with friends c) going in for sport d) I have no free time	40% 25% 15% 20%
29. Do you follow proper dietary regimen?	a) yes b) no c) it depends	25% 45% 30%
30. What do you lack to maintain a healthy regimen in nutrition?	a) money b) time c) particular features of character	60% 30% 10%

31. How often do you do your morning exercises?	a) every day b) once in two days c) never d) what is it?	20% 30% 40% 10%
32. Have you ever gone in for any sport or attended any sport section (if yes, what sport?)	a) yes b) no	70% 30%
33. What was the last time that you practiced sport?	a) yesterday b) a month ago c) a weak ago g) I don't remember	40% 5% 10% 45%
34. If you could start your life from the very beginning, would you like to go in for any sport?	a) yes, certainly, I should b) probably, no c) Why should I do it? d) it's difficult to answer	80% 5% 5% 10%
35. Do you think that a healthy lifestyle contributes to success in other spheres of human activities (study, work, etc.)?	a) yes b) no d) it's difficult to answer	60% 35% 5%
36. Can you afford visiting various sport sections, gyms, swimming pools, etc.?	a) Yes, I can. I visit them regularly b) Yes, I can, but I don't see any sense in it c) No, I cannot, because I have no time d) No, I cannot, because I don't have enough money	10% 20% 40% 30%
37. How often do you think about the adequacy of your lifestyle?	a) often b) very rarely c) I don't think about it at all	35% 35% 40%
38. What is your personal attitude to a healthy lifestyle?	a) it is cool; b) we can live without it; c) we should follow it sometimes d) I cannot answer	50% 10% 20% 20%

Table 1
Student's form

Discussion

The obtained data (table) has enabled us to calculate proteins, fats, and carbohydrates in products as well as amount of calories in meal and general amount of calories per day.

The results of the study are as follows:

- Average daily calorie intake is 1269;
- Students consume 52 g of proteins;
- The amount of fats consumed is 60 g;
- Average amount of carbohydrates consumed is 154 g.

As the results indicate, female students obviously do not receive enough calories from food. In the food ration, total calorie intake is reduced by 45% in comparison with the established norms. The consumption of proteins in food is reduced by 31%, the consumption of fats — by 25%, and the consumption of carbohydrates — by 49%, which is accompanied by a reduced activity and intensity of movements.

The obtained results indicate poor nutrition and unbalanced ration. In average, about 61% of students miss their breakfast or eat sandwiches with tea, which is an inadequate breakfast. Normally, the first meal should include products with complex carbohydrates and fiber (various cereal porridges, whole-grain bread, and fruit). Almost no respondents have hotplates or liquid food at dinner. 2% of female respondents consciously miss supper, since they keep to weight control diets. 87% of students eat almost no fruit or berries, which leads to non-season hypovitaminoses.

If we evaluate the nutrition of students, the following impairments of food status prevail:

- deficit of protein amounting up to 15% as compared with the recommended daily intake is registered among the groups of populations mostly with low incomes;
- deficit of polyunsaturated fatty acids (PUFAs — omega-3 and omega-6 fatty acids) against the background of excessive intake of solid animal fats is registered in the nutrition of all the groups of population;
- severe deficit of vitamins is revealed all the year round and everywhere in more than half of the population and amounts to:
 - 70–100% — for vitamin C;
 - 60–80% — for vitamin D complex and folic acid;
 - 40–60% — for β -carotene.

The aspect under study has not been yet sufficiently investigated. It is important to understand that it is food that ensures the human growth and development, his or her physical and mental activity, mood spirits and eventually high life quality. These are impossible to achieve disregarding the main principles of healthy, rational and safe nutrition. By its energetic value, set of daily ration products and food and biologically active substances, nutrition should meet age, sex, professional activity, general state of person's health and even climatic-geographic zone of his or her residence. The insufficient amount of some minerals and microelements in nutrition is a very serious problem. The consequences of such nutrition may be very serious¹⁵. Systematic malnutrition leads to weight loss, pantatrophia, performance decrement and reduction of reactivity and body resistance to diseases¹⁶. Remote consequences of malnutrition are manifested in the reduced functions of digestive organs, intellectual abilities, etc. Some physiological systems, primarily neurohumoral, are not completely formed in the body of young people; therefore, they are very sensible to the unbalanced food rations. Besides, malnutrition can lead to some nervous disorders (nervousness, sleeping and memory disorders).

¹⁵ V. M. Kodentsova, "Foodstuff Enriched in Vitamins and Minerals: Its Role in Providing Body with Micronutrients", *Voprosy pitaniya* num 4 (2008): 16-26.

¹⁶ A. N. Bogatyrev, "Food Quality and Food Culture", *Pishchevaya promyshlennost* num 7(2006): 70–71 y A. N. Bogatyrev, "Food Quality and Food Culture", *Pishchevaya promyshlennost* num 8 (2006): 68-69.

Food that people take up should first of all satisfy plastic and energetic needs, and one of the main conditions for solving this task is the presence of necessary elements in food [18]. Unfortunately, the issue of nutrition quality attracts little attention in Russia.

First of all, a question of the food ration and quality of consumed products should be raised. What do we eat? We should consume the food that will bring strength to our body and support it during severe loadings throughout a working day. Besides, we should thoroughly choose useful meal from the variety of food, refuse harmful food, and avoid visiting fast food restaurants too often¹⁷. Moreover, many specialists in this area advise to make up a food intake schedule and, in some cases, offer to make special notes to control ration. It is better not to consume food three times a day regularly, but rather have about five meals a day, approximately every two or three hours. Besides, it is important to reduce the portions to avoid overeating and, at the same time, remain full till the next meal¹⁸. One should not forget about vitamins — the most important tool for keeping immunity up. Many fruit and vegetables contain vitamins, and, therefore, they are perfect for quick meals. Studying this scientific trend among students, we have concluded that healthy and balanced nutrition together with regular physical activities provides normal physical and intellectual development, contributes to disease prevention, and helps a body to endure unfavorable factors of environment¹⁹. Unbalanced nutrition and comfort eating are the main reasons of the most widespread diseases, while healthy nutrition may provide their primary prevention. The reduction of the share of medicated impact due to the expansion of the range of food using various plants and animals as sources of indispensable biologically active substances is considered an important role of the products of optimal nutrition.

Human nutrition status and structure together with an active lifestyle is one of the main factors determining the level of the country's population health. The results of medical surveillances show that basic chronic diseases leading to performance decrement develop in young generation during their studies in tertiary education establishments. This issue is often linked with high psychological loadings directly associated with educational process and stressful situations; however, nutrition is an important component of human activities and proper nutrition is especially important during the formation and development of a body²⁰.

The following factors influencing nutritional system should be taken into account²¹:

¹⁷ V. P. Salovarova, "Methodological Approaches to the Issue of the Security of Food Products Produced with the Use of Genetically Modified Sources", *Izvestiya VUZov. Pishchevaya tekhnologiya* num 2-3 (2006): 112-114.

¹⁸ A. A. Kudryasheva, "Recent trends in the scientific and technical progress in the sphere of nutrition, health, and ecology", *Pishchevaya promyshlennost* num 9 (2005): 109-113 y A. A. Kudryasheva, "Recent trends in the scientific and technical progress in the sphere of nutrition, health, and ecology", *Pishchevaya promyshlennost* num 10 (2005): 92-93.

¹⁹ N. A. Korbukova; M. M. Shaylieva; I. U. Kusova; J. V. Novikova; K. V. Isaakidu; T. Yu. Tokareva and V. A. Budaeva, "Green economy" as an Approach to Ensuring Integral Security and Quality of Students' Nutrition", *Research Journal of Pharmaceutical, Biological and Chemical Sciences* Vol: 7 issue 4 (2016): 2675-2679.

²⁰ S. A. Khurshudyan, "Adulteration of Foodstuff: Scientific, Methodological, and Regulatory Framework of Countering", *Pishchevaya promyshlennost* num 9 (2008): 56-58.

²¹ O. F. Kostyleva, "Technical Regulation in the Sphere of Food Manufacturing and Turnover", *Pishchevaya promyshlennost* num 9 (2005): 86-88.

1. Economic circumstances of a person, family, his or her ability to purchase particular food in necessary amount and of proper quality;
2. Wide range of fresh, high-quality and health friendly food on the consumer market;
3. Person's knowledge about the properties and content of basic food groups (meat and meat products, fish and fish products, milk and dairy products, vegetables, fruit, etc.), rational ways of their processing, cooking, storing, use, etc.

Sufficient level of knowledge and general competence in rational nutrition enables to reduce significantly, if not exclude, the risk of obesity, heart diseases, heart attack, apoplectic attack, etc. Proper choice of products and making up balanced ration enables every person, even with limited financial abilities, to provide healthy, rational nutrition and follow its basic rules²². Nature does not allow either the poor, or the rich, or children, or adults to violate them.

As a result of the research, the following conclusions have been drawn:

1. Students do not receive enough amount of calories, proteins, fats, and carbohydrates, i.e. they are undernourished. Fruit and vegetables form a small amount of the entire ration.
2. Many students keep improper nutrition ration. They miss one or several meals, which negatively affects their health and performance. As shown by the questionnaire survey, 44% of the respondents have gastrointestinal tract diseases, while 78% of them regularly manifest the symptoms of these diseases.
3. Students do not wish to spoil their image among their peers; therefore, they do not bring healthy homemade food in the university.
4. Students often have harmful products as a snack— chips, dry bread crumbs and chocolate bars, which inevitably leads to negative consequences.
5. Campus life is characterized by alternate stressful situations, especially during examinations.
6. Students eat on the go, most often once or twice a day, they usually do not consume liquid food and hotplates.
7. Deficit of proteins (basic regulators of physiological functions) and vitamins lead to weigh deficit and chronic fatigue.
8. The prevalence of fast food products in the ration does not meet the demands of a growing organism.
9. The increased risk of the development of a chronic disease in a young age leads to performance decrement, incapacity, and necessity of regular treatment.
10. Lack of motivation for elaborating a proper food ration due to the lack of necessary knowledge and skills.
11. Family and social upbringing does not pay attention to the food culture.
12. Comfort eating is very widespread.
13. There is a need for programs teaching the food culture.
14. There is a need for joint work with food enterprises in producing complex meals with already calculated calories for all the groups of population.

The following recommendations on organizing the population's alimentation can be provided:

²² N. Shagayda and V. Uzun, "Food Security: Issues of Evaluation", *Voprosy Ekonomiki* num 5 (2015): 63-78.

1. To elaborate special food rations meeting the criteria of the balance in accordance with the needs of a developing young organism;
 2. Further training and professional retraining of the personnel of the system of students' alimentation;
 3. To organize the system of control of quality and safety of students' nutrition;
 4. To develop communicative system of indicators and early-warning systems and monitoring of risk situation;
 5. Research and methodological support of the system of students' nutrition;
 6. To develop special food rations for groups with high risks of the development of a chronic disease;
 7. To elaborate promising new food for appropriate age groups;
 8. To provide gaining knowledge about high-quality and safe nutrition;
 9. To provide gaining knowledge to organize one's own proper food ration;
 10. To provide gaining general medical knowledge, which would explain that obesity and cardiovascular diseases spread very quickly among all segments of the population;
 11. To provide gaining knowledge about the specifics of nutrition in quite a large group of youth who has no knowledge about real needs of their organism in food and biologically active substances and are guided only by a desire to hold up to trendy standards of appearance. These young people neglect the rules of healthy nutrition, which often causes a very severe disease — anorexia;
 12. Psychological training for coping with stressful situations;
 13. To raise interest in physical activity and sport;
 14. To form a new student's attitude to the necessity of daily physical activity and sport;
 15. To form psychological dependence and understanding of the necessity of physical activities and sport for further successful life and professional achievements;
 16. To form the understanding of the parallels: healthy lifestyle = professional status = high pay for a job;
 17. To develop the understanding of the motivation-value attitudes to physical activities, mindsets on a healthy lifestyle, physical improvement and self-upbringing, a habit of regular physical activities and sport;
 18. Daily ration should meet daily energy expenditure of a person.
- With the aim of raising public awareness of the nutrition quality during continuous education, the following blocks are proposed:

Block 1

- Meetings with graduate schoolchildren for giving lecture courses on rational and healthy nutrition
- Teaching healthy nutrition
- Teaching food culture
- Joint thematic activities

Block 2

- Lectures for students
- Participation in thematic exhibitions
- Instructive talks
- Competitions and activities on a healthy lifestyle

Block 3

- Recommendations for food enterprises on producing complex meals for schoolchildren balanced in proteins, fats, carbohydrates and minerals and in the amount of calories for daily intake
- Recommendations for food enterprises on producing complex meals for various age categories of population balanced in proteins, fats, carbohydrates, and minerals and in the amount of calories for daily intake
- Recommendations for food enterprises on producing complex meals for sportsmen and people with high motor activity of various age categories balanced in proteins, fats, carbohydrates, and minerals and in the amount of calories for daily intake
- Development of special educational programs whose mass realization would provide the conditions for elaborating the cult of healthy lifestyle in every member of the society.

Conclusion

Thus, having studied this research area on the data from students, we have concluded that healthy and balanced nutrition provides normal physical and intellectual development of a person. Timely information on the food culture, food quality and healthy nutrition helps to preserve a good health for many years.

References

- Doronin, A. F. & Shenderov, B. A. *Functional Eating*. Moscow: Granit. 2005.
- Bogatyrev, A. N. "Food Quality and Food Culture". *Pishchevaya promyshlennost* num 7(2006): 70–71.
- Bogatyrev, A. N. "Food Quality and Food Culture". *Pishchevaya promyshlennost* num 8 (2006): 68-69.
- Bogatyrev, A. N. "Vitamin Enrichment of the Foodstuff — A Topical Subject of the 21st Century". *Pishchevaya promyshlennost* num 9 (2010): 72-73.
- Chepurnaya, E. A. & Pavlova T. Yu. "Modern Challenges of Students' Nutrition". *Scientific student community of the 21st century. Natural Sciences: Collection of Articles Based on the Materials of the 18th International Student Applied Scientific Conference* num 4 (18) (2014): 120-126.
- Eganyan, A. G. "Food Quality Improvement as a Basis for Competitive Growth". *Pishchevaya promyshlennost* num 6 (2006): 52-54.
- Kantere, V. M.; Matison, V. A.; Khangazheeva, N. A. & Sazonov, Yu. S. *System of Food Safety Based on the HACCP Principles*. Moscow: The typography of the Russian Academy of Agricultural Sciences. 2004.
- Khurshudyan, S. A. "Adulteration of Foodstuff: Scientific, Methodological, and Regulatory Framework of Countering". *Pishchevaya promyshlennost* num 9 (2008): 56-58.
- Kodentsova, V. M. "Foodstuff Enriched in Vitamins and Minerals: Its Role in Providing Body with Micronutrients". *Voprosy pitaniya* num 4 (2008): 16-26.
- PH. D. NELVA A. KORBUKOVA / LIC. LARISA A. KRYLOVA / PH. D. GALINA A. AFANASYEVA / PH. D. VERONIKA T. TARASOVA
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Korbukova, N. A. "Technologies and products of Healthy Nutrition in the Student's Culture Development". *Perspektivy nauki* num 3(42) (2013): 19–23.

Korbukova, N. A.; Tarasov, A. V. and Popov, A. S. "Green Economy as a Factor Influencing Human Health". *Science Day: Universitywide scientific conference of young scholars and specialists* (2016): 99–103.

Korbukova, N. A.; Podkopayeva, E. G. & Serdyukov, A. A. "Harmonious Physical Development of a Student and the Use of Anthropometric Study in Education Process". *The 3rd International Applied Research Conference Current Issues of Psychology and Pedagogy. Collection of Articles of the International Applied Research Conference* (2014): 44–47.

Korbukova, N. A.; Podkopayeva, E. G.; Serdyukov, A. A.; Karelina, N. N & Shelegin, I. V. "Optimization of Physical Fitness of Students with Weakened Health". *Biosciences Biotechnology Research Asia* Vol: 12 issue 1 (2015): 191-196.

Korbukova, N. A.; Podkopayeva, E. G.; Loktionova, S. N.; Soltan N. P. & Budnikova, I. A. "Student's Sport as Indicator of Cultural Development of Society". *International Review of Management and Marketing* Vol: 6 num 3S (2016): 195-199.

Korbukova, N. A.; Podkopayeva, E. G.; Loktionova, S. N.; Soltan, N. P. & Budnikova, I. A. "Quality of Students' Nutrition and Elaboration of the Nutrition Culture Among Students". *American-Eurasian Journal of Sustainable Agriculture* num 8(6) (2014): 49-51.

Korbukova, N. A.; Shaylieva, M. M.; Kusova, I. U.; Novikova, J. V.; Isaakidu, K. V.; Tokareva, T. Yu. & Budaeva, V. A. "Green economy" as an Approach to Ensuring Integral Security and Quality of Students' Nutrition". *Research Journal of Pharmaceutical, Biological and Chemical Sciences* Vol: 7 issue 4 (2016): 2675-2679.

Kostyleva, O. F. "Technical Regulation in the Sphere of Food Manufacturing and Turnover". *Pishchevaya promyshlennost* num 9 (2005): 86-88.

Krichman, E. S. "Foodstuff and its role in forming healthy alimentation". *Pishchevaya promyshlennost* num 8 (2007): 62-63.

Kudryasheva, A. A. "Recent trends in the scientific and technical progress in the sphere of nutrition, health, and ecology". *Pishchevaya promyshlennost* num 9 (2005): 109-113.

Kudryasheva, A. A. "Recent trends in the scientific and technical progress in the sphere of nutrition, health, and ecology". *Pishchevaya promyshlennost* num 10 (2005): 92-93.

Kudryasheva, A. A. "Influence of Nutrition on the Human Health". *Pishchevaya promyshlennost* num 12 (2004): 88-90.

Salovarova, V. P. "Methodological Approaches to the Issue of the Security of Food Products Produced with the Use of Genetically Modified Sources". *Izvestiya VUZov. Pishchevaya tekhnologiya* num 2-3 (2006): 112-114.

Shagayda, N. & Uzun, V. "Food Security: Issues of Evaluation". *Voprosy Ekonomiki* num 5 (2015): 63-78.

Tikhomirov, A. A.; Korbukova, N. A. & Noskova, A. S. "Methodological Aspects of the Expansion of a Function of Food Quality for the Students". *Mezhdunarodnyy nauchno-issledovatel'skiy zhurnal. "Uspekhi sovremennoy nauki i obrazovaniya"* issue 8(4) (2016): 76-84.

Vernikov, V. M.; Arianova, E. A.; Gmoshinskiy I. V.; Khotimchenko S. A. & Tutelyan V. A. "Nanotechnologies in Food Manufacturing: Prospects and Problems". *Voprosy pitaniya* num 2 (2009): 4–18.

Voyno, L. I. & Voyno, I. A. "The Issue of Food Safety in Postindustrial Society". *International journal of experimental education* num 11 (2011).

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