



NUTRITIONAL STATUS AND PHYSICAL DEVELOPMENT OF STUDENTS IN THE CONDITIONS OF THE SOUTHERN ARAL SEA REGION

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Abstract. *The article studies the actual nutrition and physical development of university students in Nukus under the conditions of the Southern Aral Sea region. The observations were conducted in 2024–2025 among 143 students aged 18–29 years (81 male and 62 female). Actual nutrition was assessed using 24-hour dietary recall questionnaires, and physical development was evaluated by anthropometric methods. It was found that in male students' diets the protein content was on average 16.1–18.4% and the fat content 19.7–21.2% below the recommended norms, while carbohydrate intake was close to the norm; the ratio of nutrients was unbalanced. Anthropometric indicators (body height, body weight and chest circumference) were lower in female students than in male students. The results of the study can be used to substantiate measures aimed at strengthening students' health.*

Keywords: *Southern Aral Sea region; students; nutritional status; diet; proteins; fats; carbohydrates; physical development; anthropometric indicators.*

INTRODUCTION

As is known, as a result of the decrease in the water of the Aral Sea, located in the territory of the Republic of Karakalpakstan and the

Kyzylorda region of the Republic of Kazakhstan, a severe ecological crisis has arisen in the Southern Aral Sea region. One of the main reasons for this is that, since the middle of the last century, a large part of the waters of the Amu Darya and Syr Darya rivers flowing into the Aral Sea has been diverted to irrigation, as a result of which the area and volume of the sea have sharply decreased. Consequently, thousands of square kilometres of dry salt and sand have formed in place of the water. This, in turn, spreads by wind over vast areas and has been negatively affecting soil salinization, reducing the quality of agricultural and food products, and harming the lifestyle and health of various population groups. In addition, climate change of varying degrees, the decline in the number of species that make up the aquatic and terrestrial flora and fauna, and the pollution of air, soil and water have been causing the development of various diseases (Zavyalov, 2011).

The Resolution of the President of the Republic of Uzbekistan No. PQ-4027 of 23 November 2018 “On improving the activities of local executive authorities in improving the ecological situation in the Republic of Karakalpakstan and ensuring the sustainable development of the Aral Sea region” set out a number of tasks aimed at further improving the ecological situation in the Republic of Karakalpakstan, developing the Aral Sea region, raising the standard of living of the population and creating favourable conditions for it, as well as ensuring the direct participation of local executive authorities in organizing the implementation of approved measures and programmes at the local level and further enhancing their role and responsibility. In other words, great attention is being paid to eliminating problems in our Republic under unfavourable ecological conditions, such as the scarcity of water

resources, land degradation, the growth of white salt deposits in the dried-up area of the sea, the occurrence of dust and salt storms, intensifying desertification and climate change.

The ecological situation in the Southern Aral Sea region is rather complex and acute, and national and international projects are currently being implemented in this area to restore ecological sustainability, improve the living conditions of the population and develop nature-adapted economic activity. In recent years, it has been widely recognized that the examination of anthropometric indicators of the population, the formation of a healthy lifestyle among various population groups and the organization of proper nutrition are among the main factors in preserving and strengthening health. Therefore, studying and analysing the actual nutrition and physical development of the population living in the Southern Aral Sea region, and especially of students studying at higher education institutions, is one of the urgent issues facing physiology and medicine.

In this regard, we set the aim of studying the actual nutrition of students and some of their anthropometric indicators in the conditions of the Republic of Karakalpakstan.

MATERIALS AND METHODS

The observations were conducted in 2024–2025 among 143 students aged 18–29 (of whom 81 were male and 62 were female) studying at higher education institutions in the city of Nukus. Their actual nutrition was determined using 24-hour dietary recall questionnaires (Gibson, 2021), and indicators of physical development were determined using generally accepted anthropometric methods (Negasheva, 2017).

RESULTS

According to the results obtained, the amount of protein in the daily diet of male students is on average 16.1–18.4% lower, and the amount of fat is on average 19.7–21.2% lower, than the recommended norms. The amount of carbohydrates in the diet is distinguished by being close to or equal to the norm. The main share of the total calorie content of the daily diet is accounted for by carbohydrates. A similar tendency was also found in the group of female students under observation.

According to the results of the study of students' somatometric indicators, the average body height of male students was 1.75 ± 0.06 m, the average body weight was 68.9 ± 1.69 kg, and the average chest circumference was 93.5 ± 0.88 cm. The average body height of female students was found to be 1.62 ± 0.08 m, the average body weight 59.4 ± 1.32 kg, and the average chest circumference 86.2 ± 0.66 cm.

CONCLUSION

In conclusion, it can be said that the daily amounts of protein and fat in students' daily diet do not correspond to the existing normative indicators, while the amount of carbohydrates does not differ from the requirements of the daily physiological norm. At the same time, the ratio between the amounts of proteins, fats and carbohydrates is disturbed.

Students' anthropometric measurements, in particular body height, body weight and chest circumference, are distinguished by being lower in female students than in male students.

Studying the actual nutrition and physical development of male and female students at higher education institutions is one of the important steps in improving and strengthening their health.

REFERENCES

1. O'zbekiston Respublikasi Prezidentining Qarori. Qoraqalpog'iston Respublikasida 2022-2024-yillarda aholi salomatligini muhofaza qilishni yanada kuchaytirish to'g'risida. Toshkent sh., 2022-yil 7-iyul, PQ-310-son. <https://lex.uz/uz/docs/-6100013>.

2. Мандриков В.Б. и др. Соматотипология и показатели физического развития лиц призывного возраста (по материалам Волгоградского региона) / В.Б. Мандриков, В.Н. Николенко, А.И. Перепелкин, А.И. Краюшкин. Волгоград: Изд-во ВОЛГГМУ, 2013. 138 с.

3. Миннибаев Т.Ш. и др. Теоретические и методические подходы к комплексному изучению состояния здоровья студентов и преподавателей вузов / Т.Ш. Миннибаев, И.К. Рапопорт, В.В. Чубаровский [и др.] // Здоровье населения и среда обитания. 2012. № 2. С. 15–17.

4. Тимошенко К.Т., Николенко В.Н., Миннибаев Т.Ш., Никитюк Д.Б., Ключкова С.В. Антропометрические показатели студентов юношеского возраста на начальном этапе обучения в ВУЗе. // ЗНиСО №6 (279), 2012. стр. 29-32.

5. Татаринчик А.А. Особенности образа жизни современной студенческой молодежи / О.Ю. Милушкина, С.В. Маркелова, Н.А. Скоблина, А.А. Татаринчик [и др.] // Здоровье населения и среда обитания. – 2018. – № 11 (308) – С. 5–8.

6. Петров В.А. Методология изучения питания различных групп населения: учебное пособие / В.А. Петров. – Владивосток: Медицина ДВ, 2015. – 287 с.