

STUDYING MEDICAL AND BIOLOGICAL FEATURES OF FEMALE STUDENTS WITH INCREASED BODY WEIGHT

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Annotation

This author's research article presents the results of the study and their analysis. The study involved primary-year students of Zaporizhzhia Medical University (Ukraine) with increased body weight, who, according to the results of a preliminary medical examination conducted at the beginning of the academic year, were assigned to a special medical group (SMG). During their examination, a number of anthropometric indicators were determined (weight and length of their body, as well as the values of a number of anthropometric indicators and morphofunctional indicators (body mass index, Rohrer index, body obesity index), selected for this study.

Keywords: female students, special medical group, increased body weight, morphofunctional index values, body obesity index.

INTRODUCTION

The study of issues related to the health of young people, including university students, is very relevant and in demand! This especially applies to those cases in which there is a violation of their body weight in the direction of its increase, especially with a combination of existing metabolic disorders and type 1 diabetes mellitus. Unfortunately, the number of young people, both those who do not engage in physical exercise and those who have significant body weight and chronic physical inactivity, is steadily growing, leading to a whole bunch of secondary, concomitant diseases, worsening their health, including diseases associated with metabolism in them (including endocrinological ones), and with violations of their reproductive function, directly related to the formation and dynamics of their ovarian-menstrual cycle (OMC) [1-7].

Physical education in the higher education system is an important factor in strengthening and maintaining the health of modern youth. Unfortunately, a significant portion of students are assigned to a special medical group due to health reasons. In this regard, a comprehensive study of the health of female students, as a special social group with an increased risk of functional disorders of the body, is of particular importance [1-4]. This study was dedicated to continuing the study of this issue among female students of primary courses (first and second), with increased body weight, classified, according to the results of their examination at the university at the beginning of the academic year, and classified, when considering the results of this medical examination, to a special medical group (SMG).

AIM OF STUDY

The purpose of this article is to study and evaluate the results of the study and analyze the data identified changes in SMG students with increased body weight.

ABBREVIATIONS

- **SMG** - special medical group.
- **BMI** - body mass index:
- **IR** - the Rohrer weight-height index.
- **BOI** - body obesity index.
- **OMC** - ovarian-menstrual cycle.

MATERIAL AND METHODS

When writing this article, its author used the method of literary critical analysis, available sources of information on the issue he was studying, the index method, with the determination of a number of morphofunctional index values necessary for this study, the method of mathematical statistics, and the results obtained. All university students who took part in the study gave their voluntary, written consent to it.

RESULTS AND DISCUSSION

At the beginning of the academic year, after an extensive medical examination, students are selected for a special medical group (SMG) who, based on the results of a medical examination, have been diagnosed with certain disorders in physical development or health, which are a contraindication to increased physical activity [1, 3]. Such students need physical exercises in the SMG according to special programs [1-4, 6]. To conduct the study, during a medical examination of I-II-year female students at Zaporizhzhya State Medical University, we identified a group of female students who had increased body weight and were classified as SMG. In the first year of the SMG, in the 2021-2022 academic year, there were 93 people; in the second year, there were 112 people, and in total, there were 205 people. The number of SMG students with increased body weight in the first year is 17 (18.28%) people and in the second year – 21 (18.75%) second-year SMG female students.

A total of 38 first- and second-year students with increased body weight, aged 18-23 years (average age 19.7 ± 2.16 years), took part in the study. The examined girls did not have significant differences in age but differed in body length and weight ($p < 0.05$). When analyzing the results obtained, the following indicators were obtained: 38 (18.54%) first- and second-year SMG students had a body weight of more than 85-90 kg. When determining the body mass index (BMI) values, it was found that in the entire examined group ($n=38$), the indicator was 28.78 ± 1.59 kg/m² ($p < 0.01$).

In the first year, the average body weight was 97.36 ± 6.78 kg, BMI – 28.56 ± 1.81 kg/m², which corresponds to excess body weight. In the second year, these indicators were as follows: average body weight – 100.58 ± 3.73 kg, BMI – 28.96 ± 1.40 kg/m², which also corresponds to excess body weight. At the same time, in 3 (17.65%) first-year students and 4 (19.05%) second-year students (18.42% of all students with increased body weight), BMI indicators were in the range of 30.0 - 34.9 kg/m², which corresponds to the first degree of obesity [3, 5].

The Rohrer weight-height index (IR) in the entire group ($n=38$) was 19.2 ± 1.08 kg/cm³ ($p < 0.01$). For first-year female students, IR was 18.97 ± 1.37 kg/cm³, and for second-year female students – 19.38 ± 0.75 kg/cm³, which indicates increased rates of physical development [1, 3, 5].

When determining the values of the body obesity index according to the method of R. Bergman [7], we obtained the following results: for all 2nd-year students, the BOI was 28.92 ± 3.9 ($p < 0.01$), which indicates an increase in weight body, corresponding to obesity of the 1st and 2nd degree. For first-year female students, the index value corresponds to 30.95 ± 4.73 , which corresponds to 2nd-degree obesity, and for second-year female students, the index value corresponds to 27.28 ± 1.98 , which corresponds to 1st-degree obesity.

Analysis of the results obtained after a study conducted by the author among SMG students involved in physical education at the university showed that quite a lot of students, both first and second year, are obese, both first and second-degree obesity, which is clearly indicated by the results, carried out determinations of both the body mass index and the body obesity index according to the Bergman method. In this regard, the physical education curriculum for this group of female students should be carried out with the involvement of the recommendations of doctors - an endocrinologist and gynecologist, as well as with monitoring their body weight and indicators of their ovarian-menstrual cycle (OMC), and also building a special program for selecting an individual training program for each of the female students.

CONCLUSIONS

1. We believe that female students, both first and second year, engaged in physical education at the university and classified, according to the results of the study, as SMG (with increased body weight), require medical supervision for the entire duration of physical education classes. Education.
2. With improvement of individual indicators, cardio-respiratory system, reduction of body weight and obesity index values) and body mass index, provided they complete an individual physical activity program, they can be transferred to the preparatory group.
3. The use of a new morphofunctional index BOI (body obesity index) in the study has shown its practicality and should be more actively used in practice.

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