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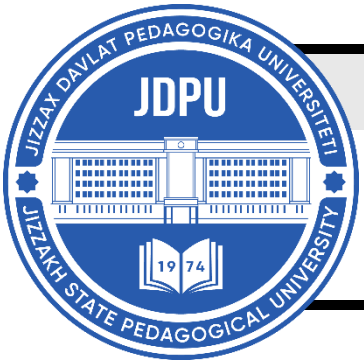

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FEATURES OF THE SOMATOTYPOLOGICAL STATUS OF ATHLETES OF VARIOUS SPORTS SPECIALIZATIONS AND QUALIFICATIONS

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ABOUT ARTICLE

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Abstract: In this article, somatotyping was carried out on athletes specializing in team sports - basketball, handball, volleyball, as well as athletes specializing in cyclic sports - athletics, cycling and swimming. Despite the similarity of a number of somatometric indicators, each sports specialization has distinctive features that correspond to the specifics and requirements of this sport. The somatic status of elite athletes indicates the homogeneity of the component composition and the narrowing of the range of constitutional types and the specificity of structural rearrangements of body components.

INTRODUCTION

Despite the similarity of a number of somatometric indicators, each sports specialization has distinctive features that correspond to the specifics and requirements of this sport. The somatic status of elite athletes indicates the mechanisms of structural changes and hidden reserve capabilities of the body.

Relevance: Conditional genetic markers include somatotype, which is a morphological expression of the constitution. Somatotype indicators include a number of anthropometric indicators, the composition of body weight, and body proportions [2, 5, 9, 12]. Characteristics of physical development are carried out on the basis of total and partial body sizes; assessment of body proportions is carried out using anthropometric characteristics. The somatometry method is used on the basis of quantitative determination of the component composition of body weight with subsequent diagnosis of the athlete's somatotype [10, 8]. Therefore, the study of athletes' belonging to a certain

type of somatotype is of scientific and practical interest when solving problems of sports selection, which was the relevance of this study.

MATERIALS AND METHODS

Degree of knowledge of the problem: Numerous studies are devoted to the study of the physique of athletes of various specializations, in particular, the somatotype is considered as an integral characteristic of morphological characteristics that determine sports performance at different stages of sports activity [4, 6,14, 13]. At the initial stage of early sports orientation, the somatotype evaluates not only the magnitude of absolute size, but the pace of individual development, which is so important for sports selection. Many classification schemes reflect individual variations in the shape and composition of the human body. The first component (endomorphy) evaluates the level of accuracy, the second - mesomorphy characterizes the relative development of skeletal muscles, the third (ectomorphy) - the relative elongation of the human body (1). The existing diversity of somatotypes is characterized not only by morphological differences, but also by functional capabilities and the level of development of motor qualities [7, 8].

Purpose of the study: Comparative assessment of the somatotypological characteristics of athletes specializing in various sports.

Research methods: The objects of the study were athletes specializing in team sports, in particular, 14 basketball players, 21 volleyball players, 13 handball players with the 1st sports category and the title of master of sports. Somatotyping was carried out on athletes specializing in cyclic sports - athletics, swimming and cycling. in particular, 10 (masters of sports) highly qualified athletes - cyclists, as well as 41 athletes - runners, 27 athletes specializing in swimming.

Constitution type, determined by the Heath-Carter method, 1989. Initially, standard measurements were carried out on 7 dimensional characteristics: body length, diameter of the distal part of the shoulder, hip, shoulder circumference in a tense state, shin circumference, andUsing a colliper, skin and fat folds were measured in 4 regions of the body. The somatotype was diagnosed based on the assessment of three components: I. F – fatty component of endomorphism; II. M – muscle component – mesomorphy; III. - P/L – weight-height index. The assessment was carried out in point calculations, according to the formulas proposed by Heath-Carter, 1989.[15]

RESULTS AND DISCUSSIONS

Research results: The results of somatotyping of gaming athletes showed that basketball players have the highest degree of ectomorphy (weight-height indicator) (4.3 points), however, tallness is typical for both volleyball and handball players and amounts to over 4 points. The degree of expression of the endomorphic (fat) component of 2.3-2.4 points is almost the same in volleyball and basketball players, but in handball players it is characterized by higher rates. In all studied specializations, the degree of development of the mesomorphic (muscular) component is high and

reaches its maximum development in handball players, then in volleyball players and basketball players. The greatest dispersion in the varieties of somatotypes is typical for basketball and handball players. 4 types of somatotypes were diagnosed. With average endo-meso-ectomorphy scores, 14.3% of basketball players and 16.6% of handball players and 28.6% of volleyball players had the endo-mesomorphic type. The ecto-mesomorphic type is most common in 57.1% of volleyball players and 50% of handball players. The frequency of occurrence of the meso-ectomorphic type was 28.5% in basketball players, 16.6% in handball players, and 14.3% in volleyball players. The ecto-endomorphic type was identified in 7.2% of basketball players. This somatotypic variation among basketball and handball players is most likely associated with more stringent requirements for their playing role within the team, and also depends on the level of sports qualifications.

Table 1 shows quantitative indicators of the distribution of somatotypes of athletes specializing in cyclic sports, characterized by a similar energy supply zone.

Table 1.

Specializationn	Number of athletes examined	Degree of expression of components		
		Endo	Meso	Ecto
Cycling	**10**	**3.1**	**5.84**	**2.8**
Athletics	**41**	**2.4**	**2.6**	**2.9**
Swimming	**27**	**3.2**	**3.7**	**2.7**

The wide range of fluctuations in the score calculation of the mesomorphic component from 2.6 to 5.84 allows us to consider that it is the most variable structure, subject to the influence of physical activity, and, therefore, has greater trainability. The ectomesomorphic and endomesomorphic components of body composition are under significant genetic control [5, 6]. The greatest elongation of the body is typical for track and field athletes, and slightly lower values for cyclists, and then for swimmers.

Table 4.

Distribution of somatotypes by category among athletes specializing in cyclic sports

Specialization	Number of athletes examined	Somatotype category (in%)			
		Endo-meso	Ecto-meso	Endo-ecto	Meso-ecto
Cycling	**10**	**44%**	**56%**	**-**	**-**
Athletics	**41**	**34.2%**	**60%-**	**-**	**15.8%-**
Swimming	**27**	**56%**	**33.3%**	**10.7%**	**-**

In the examined sample of athletes, the dominant somatotype for cyclists and track and field athletes was the ectomesomorphic somatotype, which occurred in 56% to 60% of cases, and for swimmers, the dominant somatotype was the endomesomorphic type, amounting to 56%. In terms of somatotype, cyclists also represent a fairly homogeneous group, of which 44% are endo-mesomorphs, and 56% are ecto-mesomorphs. It should be emphasized that the group of cyclists is represented by

highly qualified athletes who are members of the national team of the republic. while swimmers and track and field athletes had lower sports qualifications. It is known that the higher the level of sports qualifications, the narrower the range of somatotype varieties is, which indicates a wide range of adaptive capabilities that meet the requirements of the chosen specialization.

CONCLUSION

Conclusions: Despite the similarity of a number of somatometric indicators, each sports specialization has distinctive features that correspond to the specifics and requirements of this sport. The somatic status of elite athletes indicates the mechanisms of structural changes and hidden reserve capabilities of the body.

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