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MORPHOFUNCTIONAL FEATURES OF THE DEVELOPMENT OF VARIOUS TYPES OF MARTIAL ARTS IN ATHLETES

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Introduction. Mixed martial arts (SBI) is a mixture of various martial arts, which includes 2 subtypes: percussion, which include boxing, kickboxing, muay, etc., and grappling: judo, Greco-Roman wrestling, freestyle wrestling, etc., which became popular in the 1990s.

UBIs are physiologically challenging sports that can tax all energy health systems.

Therefore, endurance strength, maximum strength, power, aerobic and anaerobic power are important to maintain performance during a match. In addition, the technical and tactical aspects of the battle are crucial. In fact, the most successful athletes combine

Elite-level skills with extraordinary levels of strength and fitness.

Due to the fact that mixed martial arts athletes are divided into body weight categories, weight loss is an extremely common method in athletes. Therefore, body composition control is necessary to determine the best weight category of athletes without the need for aggressive weight loss processes.

In addition, higher levels of body fat negatively affect locomotion performance, technique, lower limb muscle strength, and endurance strength.

Thus, the assessment of these variables makes it possible to assess the abilities of athletes, compare them with other reference groups,

and provide feedback on the status of training.

Taking into account these considerations, this study is aimed at studying the morphofunctional state of martial arts athletes.

Objective. To describe the morphological and functional features of martial arts athletes of various groups.

Material and methods. The study included 60 athletes engaged in martial arts, aged 17 to 36 years. All athletes were divided into 2 groups. The first group consisted of 32 athletes engaged in judo, kurash (wrestlers), and the second group consisted of 28 athletes with boxing, karate, taekwondo (martial arts athletes).

To determine the reliability of the results of the study, the correct formulation of conclusions and effective forecasting recommendations, statistical processing of the material was carried out using Microsoft Excel (2007) applications.

Statistical analysis of the data obtained was based on the following calculation methods: arithmetic mean (M), mean error of arithmetic mean (m), square deviation (SKO), median (Me) and mode (Mo), as well as determining the probability of reliability of the compared values according to the Student's t-test.

The threshold level of statistical significance was $p<0.05$.

Results of our own research. The average age of the athletes of the first group was 22.4±0.66; the average age of the second group was 22.9±0.71. Statistical differences between the ages of the groups were not revealed ($p=0.68$). Physical characteristics of martial arts athletes are presented in Table 1

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Table 1

29.75±2.69

	Тхэквондо	Дзюдо	Кураш	Бокс	Тяжелая атлетика
Возраст	23,5±0,86	26,5±2,71	21,54±0,38	23,39±1,06	21±0,36
Вес (кг)	72,4±13,85	79,57±5,32	60,6±1,6	65±3,98	80,3±8,49
Рост (см)	155,5±3,75	158±0,9	161,29±1,45	165,19±1,35	Taekwondo
Judo($\frac{кг}{см^2}$)	Kurash	Boxing	Weightlifting	Age	23.5±0.86

The morphofunctional characteristics included in the study included 30 indicators, which were carried out in accordance with the requirements of the international unified method of anthropometric research. During the study, body length and weight were determined, with BMI determined by the Curley index; chest circumference during inhalation and exhalation, with the determination of the Levy and Erisman index; length and circumference of the upper and lower extremities; wrist dynamometry.
The results of the data obtained are presented in Table 3.1.1.

Table 3.1.1

<0,05

26.5±2.71	**21.54±0.38**			**23.39±1.06**			**21±0.36**
	72.4±13.85	**79.57±5.32**	**60.6±1.6**	**65±3.98**	**80.3±8.49**	**Height (cm)**	
158±0.9	161.29±1.45	165.19±1.35	163.5±1.87	BMI	29.28±4.33	31.23±3.05	23.29±0.37
23.22±1.06	29.75±2.69	64,15	96,7	44	69,3	101,4	>0,05
Indicators	Group 1 (n=32)	Group 2 (n=28)	P value	86	min	Among	max
Min	Among	max	107,7	Body length, cm	148	160,7	171
149	163.4	171.5	>0,05	Body weight, kg	47	64,15	96,7
44	69,3	101,4	>0,05	Chest circumference, cm	87	95	101
86 левой руки, кг	89	95	<0,05	Circumference of the cell on inhalation, cm	92,8	100,1	107,7

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92,5	95,2	101,5	<0,05	Circumference of the cell on exhalation, cm	81,8	91	97,5
84	87	92	<0,05	Hand dynamometry of the right arm, kg	37	45	62
32	39	45	<0,05	Hand dynamometry of the	34	42	53
29	38	38	<0,05	Shoulder width, cm	38	40,25	46,75
37	42	44	<0,05	Right shoulder circumference, cm	32,3	34,3	40,1

Statistical processing of data according to the Student's t-test showed differences between the 2 groups, which is presented in this table, which indicates a change in anthropometric data depending on the type of sport.

Conclusion: The analysis of morphological and goniometric indicators of athletes in various types of martial arts confirmed the specific effect of sports on the body of athletes.

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