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JOURNAL «MODERN ISSUES OF BIOMEDICINE» AS A VECTOR OF INFORMATIONAL ACTIVITY IN THE DIRECTION OF MEDICAL AND BIOLOGICAL SUPPORT OF PHYSICAL CULTURE AND SPORTS

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Key words: research journal, publication activity, physical culture and sports, recovery, rehabilitation, diagnostics, training.

Annotation. Results of the analysis of scientific research works on the issue of medical and biological support of physical culture and sports, published in the journal “Modern Issues of Biomedicine” in 2018-2020, are presented in this article. Main trends of research and modern tendencies on the usage of innovational technologies during training, medical and biological support of physical culture and sports were defined. As the studies have shown, the strategic direction of the development of sports science is the integration of biological, pedagogical and medical research within the scope of general scientific methodology, the definition of the most relevant directions of cooperation between a coach, a doctor and a physiologist in order to achieve the best results in sports activities, preservation and improvement of health, manifestation of maximum functional capabilities of athletes.

Introduction. Physical culture and sports remain as one of the priorities of state policy of the Russian Federation. Popular sports and high achievements sports are the universal mechanism for realization of personal potential, self-expression and development and contribute to the increase of physical potential and health of the state’s population.

Medical and biological support is a component of sports training and consists of the set of events aimed at the recovery of performance and health of athletes, including medical interventions, psychology-related events, systematic control of the state of health, support with medications, medical products and specialized nutrition products, conduction of scientific studies in the field of sports medicine [1].

The journal “Modern Issues of Biomedicine” has been published since 2017 and it published scientific research materials, such as original research and reviews,

dedicated to all directions of medical and biological support of physical culture and sports: sports medicine, sports physiology, theory and methods of physical culture and sports. The analysis of the journal publications for the last 3 years would allow to determine priority areas of modern research conducted by scientists and experts, to determine the vector of informational activity in the direction of medical and biological support of physical culture and sports.

The purpose of the study is to analyze scientific research works on issues of medical and biological support of physical culture and sports presented in publications of the journal “Modern Issues of Biomedicine” for the last 3 years.

Methods and organization. The content analysis and systematization of scientific research works presented in sections of the journal “Modern Issues of Biomedicine”: physiology, sports medicine, physical culture and sports were conducted. Total 79 articles were analyzed.

Results and discussion. The general analysis of quantitative content of sections of articles for the last 3 years (2018-2020) has shown that of all publications related to relevant issues of sports science, 33% of publications are dedicated to issues of sports physiology, 25% – to issues of sports medicine and 21% – to issues of theory and methods of physical culture and sports. Among publications of 2018 (Fig. 1) 40% of them were dedicated to issues of sports physiology, 40% – to issues of sports medicine and 20% – to issues of theory and methods of physical culture and sports. In 2019 (Fig. 2) 21% of publications were dedicated to issues of sports physiology, 37% – to issues of sports medicine and 42% – to issues of theory and methods of physical culture and sports. In 2020 (Fig. 3) 57% of publications were dedicated to issues of sports physiology, 20% – to issues of sports medicine and 23% – to issues of theory and methods of physical culture and sports.

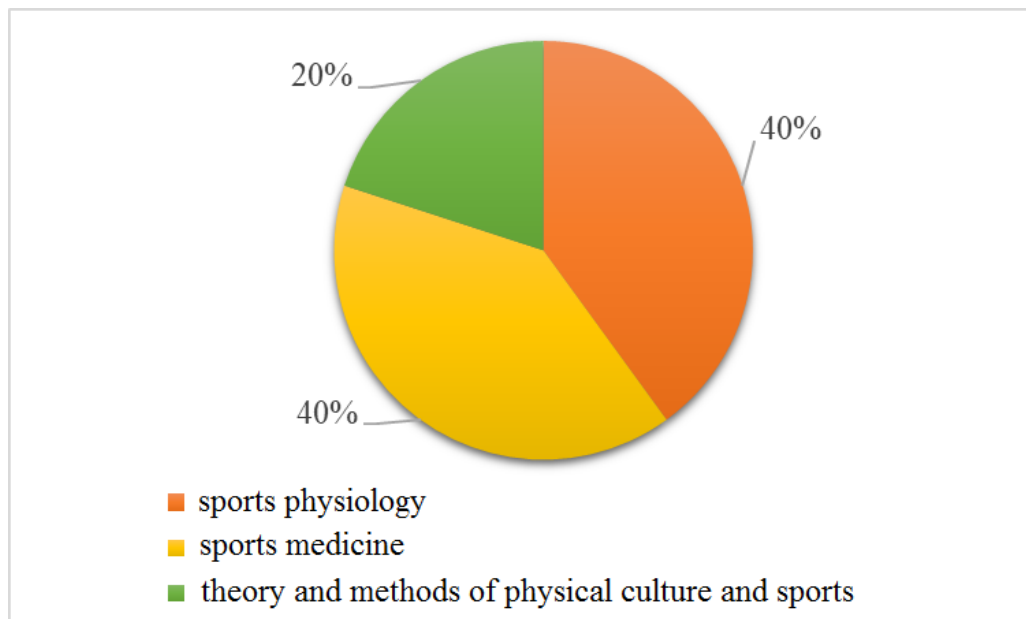


Fig.1. Distribution of publications of the journal “Modern Issues of Biomedicine” connected with relevant issues of sports science by sections in 2018

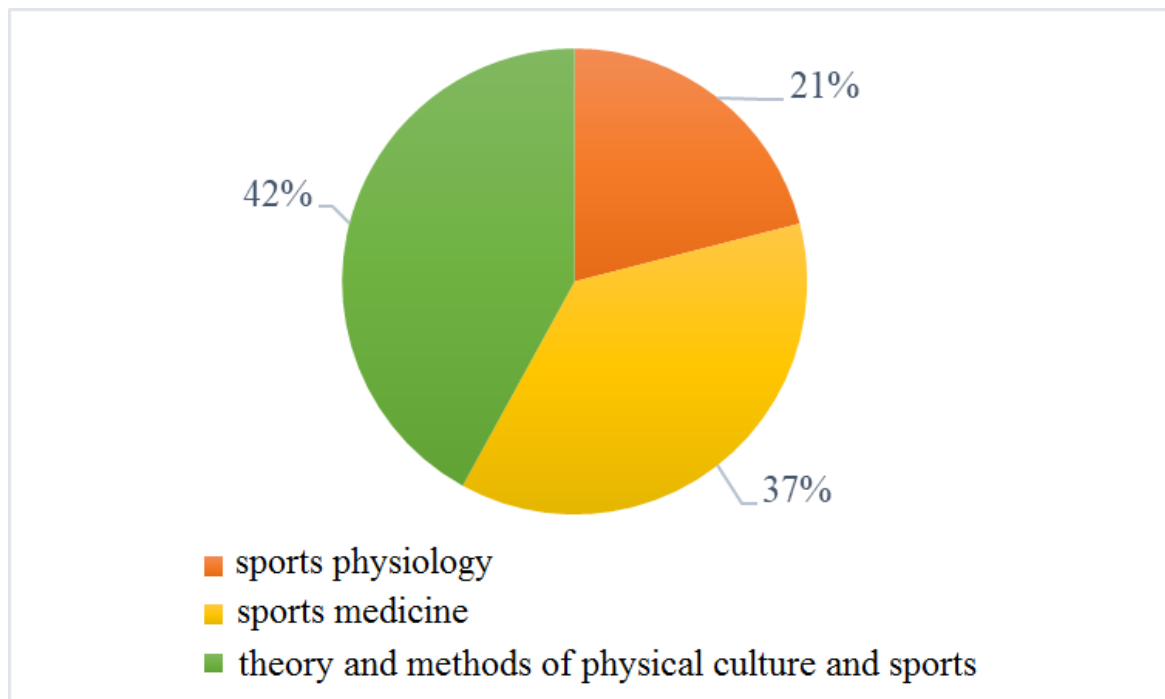


Fig.2. Distribution of publications of the journal “Modern Issues of Biomedicine” connected with relevant issues of sports science by sections in 2019

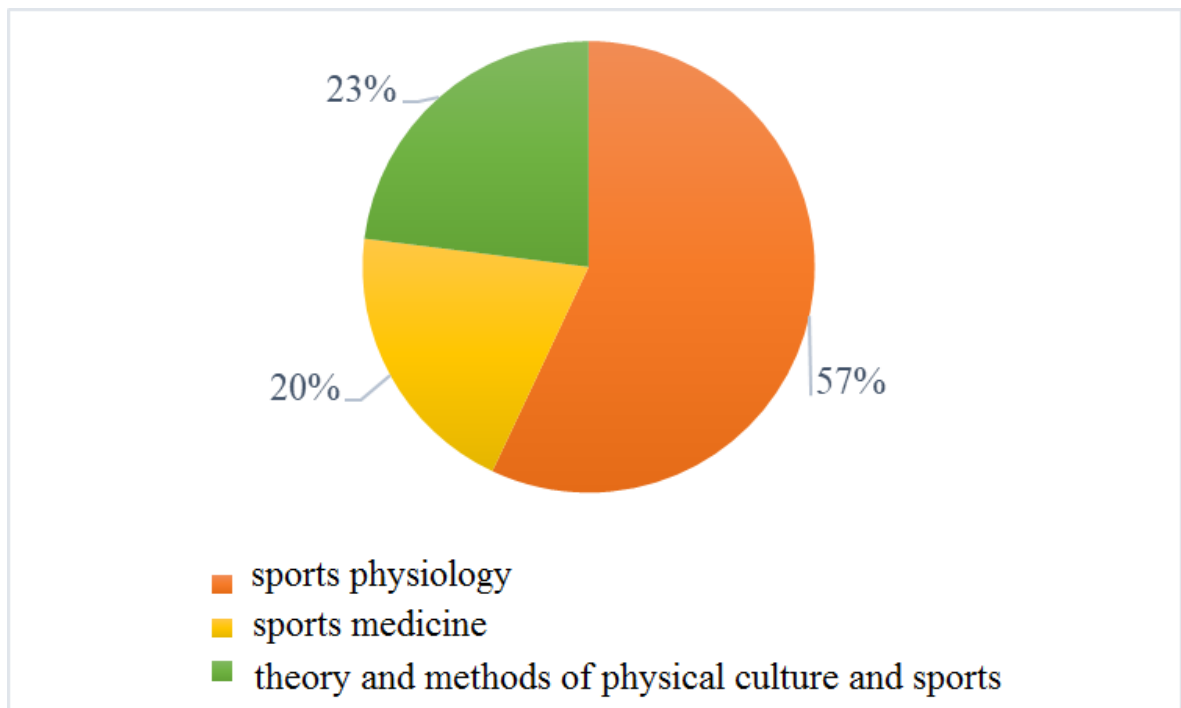


Fig.3. Distribution of publications of the journal “Modern Issues of Biomedicine” connected with relevant issues of sports science by sections in 2020

Such distribution of publications, which is predominance of physiological research, shows general tendencies of the development of sport science, especially abroad. The content analysis of publications of latest issues of the top journal called the Journal of Sports Sciences (eISSN: 1466-447X; 2019 Impact Factor 2.597; the journal of the British Association of Sciences of Sport and Physical Exercises) has shown that 65% of articles in it are dedicated to issues of sports physiology [2].

The Russia-based sports science is traditionally different from the foreign sports science being more inclined to pedagogical studies, a small part of articles of scientists, who are also sports teachers, in our journal, is seemingly connected with the title of our journal, in which the predominance of biomedical studies is implied.

However, starting with December 2020 the journal “Modern Issues of Biomedicine” was included in the List of the Higher Attestation Commission in the next specialties: 03.03.01 – Physiology (medical and biological sciences); 14.03.11 – Recovery medicine, sports medicine, exercise therapy, balneology and physiotherapy (medical and biological sciences); 13.00.04 – Theory and methods of physical education, sports training, health and adaptive physical culture (pedagogical sciences). Therefore, we invite authors to publish their studies in these areas.

The analysis of topics and contents of published works has shown that mainly studies were dedicated to such directions as:

1. Development and application of new methods of diagnostics of the general functional state of an organism [3-5] and its individual systems [6-7];

2. Study of functional state of organism's systems as a result of a long-term adaptation to specific sports activity [8-10] and the main predictor variable of the sports result quality [11-12];

3. Recovery and rehabilitation of athletes after heavy physical loads using modern methods of mechanotherapy – robotic complexes with biological feedback [13, 14] and physiotherapy [15, 16];

4. Use of ergogenic means in sports to optimize the functional state and increase the sports performance [17-20];

5. Psychophysiology and management of the state of physiological functions using training with biological feedback [21, 22];

6. Morphological state of athletes and nutrition [23, 24];

7. Adaptation to physical loads in middle altitude (altitude acclimatization) [25, 26];

8. Chronobiology in sports [27, 28];

9. Innovational technologies in physical culture and sports [29, 30].

According to results of the conducted analysis, main trends of research on training, medical and biological support of athletes were revealed, that is the development of new technologies of diagnostics, increase of functional capabilities (growth of training level) and recovery.

Conclusion. Thus, the conducted content analysis and systematization of scientific research works presented in sections of the journal “Modern Issues of Biomedicine”: physiology, sports medicine, physical culture and sports in 2018-2020 allowed to point out the most interest and important scientific facts and modern tendencies of the application of innovational technologies in training, medical and biological support of physical culture and sports. As studies have shown, the vector of research activity is aimed at the development of new technologies of diagnostics, increase of increase of functional capabilities and recovery.

The strategic direction of the development of sports science is the integration of biological, pedagogical and medical research within the scope of general scientific methodology, the definition of the most relevant directions of cooperation between a coach, a doctor and a physiologist in order to achieve the best results in sports activities, preservation and improvement of health, manifestation of maximum functional capabilities of athletes. Integration of such studies in our journal confirms the achievability of such interaction and opens up new opportunities in the development of sciences of physical culture and sports.

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