

ОГЛЯДИ

DOI: 10.26693/jmbs05.06.378

UDC 796.81/.85.015.52=111

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SPECIFICS OF THE DEVELOPMENT OF STRENGTH ABILITIES IN MODERN WRESTLING

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This paper analyzes the well-known specialized literature on the proper coverage of the problems of strength abilities development in wrestlers of different sports styles, as a leading motor quality in the creation of technical and tactical skills.

The *purpose* of the research was the theoretical analysis of the characteristics of the training process in wrestling concerning the creation of strength abilities at the modern stage of sports improvement.

Material and methods. This research was conducted using the method of specialized literature analysis and practical experience interpretation. The information was analyzed chronologically in the textbooks, monographs, papers, teaching aids and other publications (available up to 2020) about the sports training of the wrestlers. The extraction and presentation of the data focused on the methods and means for developing the strength abilities.

Results and discussion. The specialized literature referring to various types of martial arts has been thoroughly studied. The analysis has made a comparison between the content and significance of the bibliographic sources and has assessed their importance for the training process. These sources recommend the use of certain methods and means for developing the strength abilities of the wrestlers of different styles based on the general and special didactic principles of sports training. Considering all the factors that determine the effectiveness of wrestlers' competitive activity, the means and methods necessary for the implementation of complex technical and tactical actions in wrestling were submitted to experimental validation.

Special attention was paid to the most important elements of techniques, variability of motion actions depending on the emerging dynamic situations, switching from one technique to another.

The development of general didactic principles in sports is focused on educational training. The gener-

al didactic principles, together with a wide range of knowledge related to sports training are only the basis for the formation of special patterns and principles.

Special principles do not strictly standardize the structure and content of athletes' training, but they are generalizations and methodological guidelines that provide rational support and a solid scientific platform for this training.

The results of the study of specialized literature revealed the necessity for broad coverage of the ways to implement the specific principles in the training of wrestlers. The available specialized literature sources showed that the wrestlers' strength development was perceived as a secondary part of training compared to the improvement of their technical skills.

Conclusion. Carrying out the theoretical analysis of the training process features in wrestling pointed out the recommendations of the methods and means used to develop the strength skills of the wrestlers according to the general and special principles of the sports training.

Keywords: wrestling; general and special principles; strength abilities; training methods; modern stage

Introduction. Studying the history of the development of knowledge and practical activity in the training of the athletes specializing in different types of single combats and martial arts testifies to the great attention paid to the analysis of techniques and technical and tactical actions of wrestlers of various styles [1, 2, 3]. This knowledge is widely covered in the content of the majority of textbooks, monographs, teaching aids and other publications related to the sports training of the wrestlers [4–11].

At the same time, we have highlighted the fact that the most of the specialized literature sources clearly underestimate the importance of other types of

training (especially the physical one) and, also, such major qualities for the wrestling as strength.

Moreover, in our opinion, the general didactic and special principles of power improvement of wrestlers of various styles are not sufficiently disclosed. Their study and implementation reflect a very limited approach to the foundations of the rational construction of sports training and a lack of proper reliance on a wide volume of empirical knowledge in the field of both theory and methodology of sports training, related disciplines (anatomy, biomechanics, biochemistry, physiology, sports medicine etc.) and scientific approaches (systems approach, adaptation theory, motion control theory, theory of functional systems etc.) [12–21].

The rational process of sports training, including the theoretical and methodological principles of strength training, is mainly based on the experience of the following advanced sports practice and general didactic principles: accessibility, conscientiousness, activity, clarity, systematicity, consistency, strength [22, 23, 24, 25].

That is why the theoretical substantiation of the importance of strength training on the basis of general didactic and special principles in various types of wrestling is of crucial importance.

The purpose of the research. This paper focuses on the theoretical analysis of the characteristics of the training process in wrestling concerning the creation of power abilities in sports improvement stage.

Tasks

1. To study the available specialized sources regarding various types of martial arts and their recommendations on the methods and means to be used for developing the power abilities of the wrestlers of various styles.
2. To determine the most significant scientific literature sources, which describe the ways of developing strength abilities of wrestlers of various styles in an accessible form, based on the general and special didactic principles.

Material and methods of research

This research was conducted using the method of specialized literature analysis and practical experience interpretation. This knowledge was analyzed chronologically in the content of most of textbooks, monographs, specialized articles, teaching aids and other publications dealing with the sports training of the wrestlers [37].

The degree of coverage and the importance of strength abilities development in wrestlers of various styles were determined as leading in the manifestation and improvement of the technical-tactical and coordination capabilities.

We have studied the fundamental information materials of well-known scientists on the structure of the sports training in wrestling.

Research results and their discussion

The “Physical culture and sport” Publishing House of Moscow published a fundamental textbook for the institutes of physical culture: “Sports wrestling” (Sorokin, 1960) [27]. This textbook presents in detail the history of wrestling, the basics of teaching wrestling, organization, planning and accounting of educational and sports work, the features of working with children, the training process planning, the strength training [28].

The “Sports Wrestling” textbook for coaches and athletes, prepared by a large group of elite experts led by A.N. Lenz, the Honored Trainer of the USSR, deals also with the “Development of strength” [29]. The main means of strength development and methods are presented: “failure” exercises, short-term exercises, increasing weights, isometric method. The target is to make the most of the means and methods that ensure compliance with the techniques and motor actions of the wrestling [30, 31].

The textbook “Wrestling Sambo” (A. Kharlampiev, 1964) provides a list of general preparatory exercises with a barbell and partner resistance for strength training [32]. It was revealed that the main criterion determining the success of combat sambo wrestlers in the competitive activity was the level of their special training [33].

The next version of “Sports Wrestling” textbook (N.M. Galkovsky and A.Z. Katulin, 1968) gives the most general ideas about the manifestations of strength qualities in wrestling (explosive character in fast movements) and methods of strength training - resistance strength training with several forms (“to failure”, large and maximum efforts, increasing weights), isometric, inferior [4]. The main exercises are also presented: exercises with a barbell, weights, bags, stuffed balls, etc. [16, 34].

A.P. Kuptsov (1978) and his team of specialists presented the methods of strength development: the method of maximum efforts, involving the use of exercises (lifting a barbell, stretching shock absorbers etc.) with near limit and limit weights; the method of repeated efforts based on the use of weights of 40–70% of the maximum with work “to failure”; the method of dynamic efforts, involving the performance of special strength exercises with high speed and moderate weights; isometric method involving the use of static stresses in a certain position (holding the bridge, holding the grip, etc.) [35]. The authors recommend the even distribution of the power load to various muscle groups; the exercises with maximum weights should be alternated with relaxation exercises, the speed-strength exercises should be used first, all aiming at the development of maximum strength and strength endurance [36, 37, 38].

The approaches to strength training of freestyle and Greco-Roman wrestlers formed in the 30-50s of the last century do not change in subsequent years, extending also to judo. For example, S. Matveev and Ya. Voloshchuk (1974), recommended the development of strength using exercises with barbells, hammers, weights, dumbbells, expanders, using general preparatory gymnastic exercises: flexion and extension of the arms in the lying position, flexion and extension of the arms in an emphasis on the uneven bars, pulling up on the rings, going out at close range by force on the bar etc [39]. The recommendations to develop strength by performing exercises "to failure", the onset of severe fatigue contradict the recommendations of the serious works on strength training of those years [40, 41].

The Japanese experts (Iwai et al., 1977) highlight the importance of the general developmental exercises which contribute not only to the increase of the physical strength, but also the explosive strength which helps to advance during attack [42].

The book "Greco-Roman wrestling" (A. G. Semenov and M. V. Prokhorova, 2005) examines physical fitness issues and includes recommendations similar to the ones made by A. N. Lenz in 1964 and by N. M. Galkovsky and A. Z. Katulin in 1968 [4, 43].

The current state of knowledge in the field of theory and methodology of training athletes specializing in wrestling, as well as the tendencies of their further development, can be comprehensively assessed on the basis of the "Fundamentals of sportsmanship" by A. D. Novikov and of the work dealing with Greek Roman wrestling, freestyle wrestling, judo and sambo [26, 44]. The core provisions of the theory of complex dynamic systems and the methodology of their research were also studied: basic properties and capabilities in relation to systems of movements and complex motor actions; the basics of their systemic structural analysis; cybernetic control systems for such systems [45].

The specific methodology is based on a comprehensive analysis of the structure of techniques and motor actions in wrestling, methods of teaching and improving the wrestling techniques, in the light of the theory of complex dynamic systems [46, 47, 48]. The effectiveness of a number of experimental studies was provided by the development and substantiation of instrumental methods of research and control of athletes' skills [49]. We can mention the method that simulates actions in competitive conditions; the method that simulates the opponent's defensive actions; methods that simulate tactical decisions and assess the effectiveness of the choice of technical and tactical actions.

Special attention is paid to the most important elements of techniques, variability of motion actions de-

pending on the emerging dynamic situations, switching from one technique to another. The stability of the performance of techniques to the knocking effect of the opponent's defensive actions, the emotional state of the wrestler, the development of fatigue etc. were studied [44]. Other specialists studied the dynamics of the competitive performance indicators in the highly skilled wrestlers; the introduction of science and technology achievements in the training process; the improvement of the training methodology; the impact of a special dosing of the loads in Greco-Roman wrestling on the increase of students' sports results [50–55].

Taking into account all the factors that determine the effectiveness of wrestlers' competitive activity, a set of means and methods for providing and implementing complex technical and tactical actions in sports wrestling was subjected to experimental substantiation [56, 57, 58].

There are studies that investigate the key factors of highly skilled wrestlers' fitness structure and determine the level of their functional and physical capacity at the stage of maximum achievement of their individual capacities [59].

Three groups of exercises are *recommended to develop the strength of the wrestlers*:

- 1) Exercises with large weights (80-90% of the maximum available) are obligatory for the development of absolute strength;
- 2) Exercises with low weights (up to 30% of the maximum available), performed at maximum speed are aimed at development of the high-speed component of explosive strength;
- 3) Exercises with competitive weights, performed at maximum speed are necessary for the development of explosive strength simultaneously with the improvement of technique.

Recommendations on the duration of exercises, the amount of weights, the duration of pauses between approaches as well as the results of a pedagogical experiment are presented. This experiment highlights the effectiveness of the predominant development of the strength of the muscles carrying the main load while performing a specific technique. It is well known that the necessary basis for the technique's fulfillment and the implementation of successful motor actions is given by strength qualities which are also used in conditions of severe opposition in the competitive activity [60–64].

The development of general didactic principles in sports is focused on educational training. At the same time, in sports, the process of learning and training mainly occurs at the motor level and on the basis of the corresponding physiological, biomechanical, psycho-regulatory processes [65]. An additional difficulty is that the sport focuses on the maximum available levels of various aspects of readiness, motor qualities,

manifestations of the psyche [66, 67]; and others), as well as the use of huge loads associated with such concepts as stress, fatigue, overstrain of functional systems, overtraining, recovery, urgent and delayed adaptive effect etc. [68, 69].

Thus, it becomes clear that the general didactic principles, together with a wide amount of knowledge related to sports training are only the basis for the formation of special patterns and principles [66, 67].

The special principles as basic attitudes, provisions, rules that determine the content of sports training reflect stable connections between its various components, between the factors influencing the athlete's body and his adaptive reactions, between different physical qualities etc. Special principles do not strictly standardize the structure and content of athletes' training, but they are generalizations and methodological guidelines that provide rational support and a solid scientific platform for the training of athletes [66, 67].

There is limited information about the possibilities of such important principles as in-depth specialization, variability of loads, unity and interconnection of the training process with non-training factors. Practically there is not enough attention paid to such an important principle for wrestling as the interconnection of the training process with injury prevention.

Thus, in the fundamental works of prominent scientists, we are faced with the position according to which the development of physical qualities, first of all, strength, is perceived as a secondary part of training in comparison with the improvement of technical skills. But A. D. Novikov (2012) points out that such an approach considerably narrows the possibilities for an efficient and completely developed physical training. We fully agree with this opinion of the author and believe that, for the development of strength qualities of the wrestlers, a system-organizing approach is needed, aimed at the sustainable creation of the required level of power capabilities [44].

Moreover, the didactic principles (general and special ones) for the creation of strength abilities in

athletes of various wrestling styles have not been sufficiently studied.

At the same time, the use of the principles for each level (general or special for the type of combat) or different principles related to one of the levels cannot be distinguished by strict selectivity and independent reflection in the training process. The separate content components of the sports training system often entail the implementation of the provisions of different principles, ensuring the complexity of the impact on the body of the athletes involved [66].

Conclusion

1. The theoretical analysis of the training process characteristics in wrestling highlighted the methods and means to be used for developing the wrestlers' strength skills consistent with the general and special principles of the sports training at the modern stage of sports improvement.
2. The available specialized literature sources showed that the wrestlers' strength development was perceived as a secondary part of training compared to the improvement of their technical skills.
3. The results of the studied specialized literature showed that there was an obvious need for broad coverage of the ways of implementing specific principles in the training of wrestlers.
4. A vertical should be created including general didactic principles as the basis of special principles that reveal the capabilities of athletes and allow to place the most significant accents for a specific type of martial arts.

Prospects for further research. The prospects of the next researches will be directed towards the organization and development of studies and experiments within the national teams of judo, freestyle wrestling and Greco-Roman wrestling of the Republic of Moldova. The experimental methodology of specific physical training will be also implemented in the wrestlers of Ukraine and Romania with a supplementary element, namely the analysis of the functional, biochemical and hormonal indicators which have not been studied so far.

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УДК 796.81/.85.015.52=111

ОСОБЛИВОСТІ РОЗВИТКУ СИЛОВИХ ЗДІБНОСТЕЙ В СУЧАСНІЙ БОРОТБІ

Манолакі Віктор

Резюме. У статті аналізується доступна спеціалізована література, присвячена питанням правильного висвітлення проблем розвитку силових здібностей у борців різних спортивних стилів як провідного рухового якості у формуванні техніко-тактичних навичок.

Метою дослідження був теоретичний аналіз особливостей тренувального процесу в спортивній боротьбі з формування силових здібностей на сучасному етапі спортивного вдосконалення.

Дослідження проводилося з використанням методів аналізу спеціальної літератури та інтерпретації практичного досвіду. Інформація була проаналізована в хронологічному порядку в підручниках, монографіях, статтях, навчальних посібниках та інших публікаціях (доступних до 2020 р) про спортивну підготовку борців. Під час вилучення та поданні даних основна увага приділялася методам і засобам розвитку силових здібностей.

У ході аналізу літератури було проведено порівняння змісту і значущості бібліографічних джерел і дана оцінка їх важливості для навчального процесу. У цих джерелах рекомендується використовувати певні методи і засоби для розвитку силових здібностей борців різних стилів на основі загальних і спеціальних дидактичних принципів спортивної підготовки.

З урахуванням всіх факторів, що визначають результативність змагальної діяльності борців, засоби і методи, необхідні для виконання складних техніко-тактичних дій в боротьбі, були представлені на експериментальну апробацію.

Особливу увагу було приділено найважливішим елементам прийомів, варіативності рухових дій в залежності від виникаючих динамічних ситуацій, переходу від однієї техніки до іншої.

Розвиток загально дидактичних принципів в спорті орієнтоване на педагогічну підготовку. Загальні дидактичні принципи разом з широким спектром знань, пов'язаних зі спортивним тренуванням, є лише основою для формування особливих патернів і принципів.

Спеціальні принципи не строго стандартизують структуру і зміст тренувань спортсменів, але вони є узагальненнями і методичними рекомендаціями, які забезпечують раціональну підтримку і міцну наукову платформу для цього тренування.

Ключові слова: боротьба, загальні і спеціальні принципи, силові здібності, методи навчання, сучасний етап.

УДК 796.81/.85.015.52=111

ОСОБЕННОСТИ РАЗВИТИЯ СИЛОВЫХ СПОСОБНОСТЕЙ В СОВРЕМЕННОЙ БОРЬБЕ

Манолаки Виктор

Резюме. В статье анализируется доступная специализированная литература, посвященная вопросам освещения проблем развития силовых способностей у борцов разных спортивных стилей как ведущего двигательного качества в формировании технико-тактических навыков.

Целью исследования явился теоретический анализ особенностей тренировочного процесса в спортивной борьбе по формированию силовых способностей на современном этапе спортивного совершенствования.

Исследование проводилось с использованием методов анализа специальной литературы и интерпретации практического опыта. Информация была проанализирована в хронологическом порядке в учебниках, монографиях, статьях, учебных пособиях и других публикациях (доступных до 2020 г.) о спортивной подготовке борцов. При извлечении и представлении данных основное внимание уделялось методам и средствам развития силовых способностей.

В ходе анализа литературы было проведено сравнение содержания и значимости библиографических источников, и дана оценка их важности для учебного процесса. В этих источниках рекомендуется использовать определенные методы и средства для развития силовых способностей борцов разных стилей на основе общих и специальных дидактических принципов спортивной подготовки.

С учетом всех факторов, определяющих результативность соревновательной деятельности борцов, средства и методы, необходимые для выполнения сложных технико-тактических действий в борьбе, были представлены на экспериментальную апробацию.

Особое внимание было уделено важнейшим элементам приемов, вариативности двигательных действий в зависимости от возникающих динамических ситуаций, переходу от одной техники к другой.

Развитие общедидактических принципов в спорте ориентировано на педагогическую подготовку. Общие дидактические принципы вместе с широким спектром знаний, связанных со спортивной тренировкой, являются лишь основой для формирования особых паттернов и принципов.

Специальные принципы не строго стандартизируют структуру и содержание тренировок спортсменов, но они являются обобщениями и методическими рекомендациями, которые обеспечивают рациональную поддержку и прочную научную платформу для этой тренировки.

Ключевые слова: борьба, общие и специальные принципы, силовые способности, методы обучения, современный этап.

The authors of this study confirm that the research and publication of the results were not associated with any conflicts regarding commercial or financial relations, relations with organizations and/or individuals who may have been related to the study, and interrelations of coauthors of the article.

Стаття надійшла 06.10.2020 р.

Рекомендована до друку на засіданні редакційної колегії після рецензування