STATE AND WAYS TO SOLVE THE PROBLEM OF IMPROVING THE SPEED AND POWER QUALITIES OF ATHLETES

Alisher Odilovich Abdalimov
Independent Researcher, Uzbekistan State University of Physical Culture and Sports

ABSTRACT

This article provides a scientific basis for the status and development of fast-paced physical qualities of highly qualified handball players in physical training.

Keywords: improving the physical training of an athlete, speed-power, coupled influences, analytical, short-term efforts, de-adaptation, speed-power movements.

INTRODUCTION

The basis for achieving high results in sports is the formation of a wide range of motor skills and abilities with a versatile development of physical qualities. There is an opinion that the level of physical fitness of athletes largely determines their athletic achievements.

Theorists and practitioners working in the field of sports training have repeatedly noted that the degree of development of the motor qualities of athletes promotes faster learning of new movements, their improvement, diversifies tactics, etc.

The choice of means and methods that improve the physical training of an athlete should be based on the knowledge of a number of issues, the most important of which are the following: what is the structure of the manifestation of motor qualities in a competitive exercise; what is the influence of exercises aimed at the development of motor qualities on the structure of the technique of movements; what is the effectiveness of means and methods of physical training at different stages of sports improvement.

LITERATURE REVIEW

The most important component of an athlete's physical fitness is the level of development of his speed-power qualities. It is customary to distinguish the following forms of these qualities: elementary, mainly high-speed (reaction time, time of local movement) and complex. The latter are characterized by their manifestations when performing various competitive exercises.

In playing activity, indicators of the speed of realization of reactions are expressed in the speed of perception of the situation, its analysis and assessment, in the instantaneous decision-making and the beginning of the response movement. Other

forms of manifestation of speed are realized in the speed of movement and implementation of individual techniques, the speed of changing one technique to another.

Theoretical research and sports practice have shown that some aspects of speed are relatively independent from each other. So, you can be distinguished by quick reaction and relatively slow movements, high starting and relatively low distance speeds. Therefore, it is very important for a coach to know the level of the state of elementary forms of speed in an athlete for selective influence and selection of the most rational means. However, this is only one side of the issue. It is known that speed in various sports has its own specifics. In sports games, it is due to the fact that its manifestation occurs in continuously changing situations in direct competition with an opponent in speed, in conditions of active resistance, in the presence of confusing factors and hindrances.

In these conditions, characteristic of play activity are such speed indicators as reactions of choice and reactions to a moving object; repeated starting accelerations with a change in direction; quick change of some techniques and actions by others and, finally, the implementation of techniques and the implementation of tactical combinations with the fastest movement

Thus, speed in sports games has a complex structure. For selective influence on various aspects of this structure, special means should be selected that take into account the peculiarities of the manifestation of this quality.

It should be pointed out that most experts agree that one of the most important aspects of speed, which is associated with the achievement of success in sports games, is the reaction time. Meanwhile, in the methodological literature, very little attention is paid to the education of speed of reaction. At best, exemplary exercises are given that develop the speed of response. In most of the works, the authors limit themselves to pointing out that sports games require quick reactions.

According to some experts, the time of motor reaction in the process of sports training is shortened, while it is emphasized that the nature of these shifts largely depends on the duration and density of training, as well as on the total volume of the training load.

While fast response is important, the final result largely depends on the speed of the start acceleration and the distance speed. They are, as it were, a background against which other aspects of speed are manifested, for example, the speed of performing techniques, changing them or re-reacting, assessing the created moment and solving tactical problems, etc. In other words, the speed of movement is one of those manifestations of speed that follows give high priority.

It is important to emphasize that much is still unclear in the methodology for developing the speed of movement in sports games. This is primarily due to the lack of a sufficient number of experimental studies. True, there are separate works in which it is recommended to improve the starting and distance speed of basketball players using special sprint exercises.

One might think that the lack of methodological recommendations for improving starting accelerations and short movements is largely due to the fact that in games in general and in handball in particular, there is no clearly developed methodology for registering various types of movements, identifying the most typical working distances and their distances, taking into account the playing functions, etc.

Thus, the analysis of the available literature on sports games showed the following:

1. The reaction time in most cases is used as an indicator of the functional state of the central nervous system.

2. Very little time is devoted to the development of such rapidity components as the starting speed of movement and the speed of orientation.

3. There are no special recommendations for the development of speed, taking into account the complexity of its structure.

RESULTS

The basis for achieving high results in sports is the formation of a wide range of motor skills and abilities, versatile development of physical qualities.

In sports practice, in the scientific and methodological literature on sports, more and more attention is paid to special physical fitness. In particular, this applies to speed-strength training, as the most important factor determining success in mastering modern technology. At the same time, the complex development of strength and speed in certain proportions with all other physical qualities leads to favorable changes in the fitness of athletes (M.M. Shestyakov, 1999).

Experts believe that the problem of improving the technique should be considered one of the main in the practice of sports training, in connection with which the increase in the special power and speed qualities of athletes is of particular importance.

Some sports coaches hold the same view. They argue that the highest achievements in sports are possible only with the organic unity of physical fitness. It is about identifying the optimal relationship between physical qualities and the formation of motor skills.

Investigating the relationship of muscle strength, speed-strength indicators, movement technique and their influence on the result in high jumpers, we found a greater dependence of the sports result on the degree of muscle strength development.

The issues of interconnection of physical and technical training in sports games were studied, they found that the increase in the level of technical skill of handball players is directly dependent on the level of development of motor qualities.

According to some experts in sports games, speed-strength qualities should take a leading place in the training system of athletes. In their opinion, the speed-power qualities of the players should be developed only in the relationship between strength and speed in certain ratios, based on the individual abilities of the athlete, in connection with which at the final stages of preparation it is necessary to apply a set of special exercises in their structure as close as possible to playing activity.

The interrelation of physical qualities and the formation of motor skills in the process of training athletes in various sports was revealed in the research.

According to some experts, the relationship between motor skills (elements of technology) and physical qualities is justified by the fact that motor qualities do not exist outside the form of movement. At the same time, the dynamic structure of the athlete's technique of movements should be improved in accordance with the peculiarities of the development of motor qualities. A number of authors, paying special attention to speed-strength training, note that the formation of motor skills is largely associated with the achievement of certain kinematic and dynamic characteristics of movements by athletes. At the same time, there is an opinion that the formation of motor skills and the mastery of complex elements of technique in various sports are directly dependent on the level of development of motor qualities and specifically speed-power indicators. Moreover, in their opinion, individual elements of technique are inaccessible for those athletes who have not reached the required level of development of these speed-strength abilities.

The results of many years of research by T.M. Baerbekov have shown that there is a direct connection between the absolute height of the athlete's jump and the quality of the game. At the same time, the correlation coefficients helped to determine the correspondence of the player's level to the general level of the team, and also to establish which elements of the technique require special training.

The study of speed-strength indicators in cyclic sports, by some specialists, showed that their increase has a positive effect on running technique, an increase in the sprinter's coordination abilities, speed and frequency of movements, and improvement of individual speed components. The above examples from various sports indicate the

presence of a relationship between speed-strength and technical readiness of athletes at different stages of the annual cycle.

A number of scientific workers and practitioners in handball point to a wide variety of different motor acts performed by handball players during the game, which requires athletes not only to correctly perform motor actions, but also to versatile physical development based, first of all, on speed-strength readiness.

There is an opinion that high activity and variety of motor activity in constantly changing conditions, fast pace of the game, complexity of technical techniques require all-round physical training from the handball player. Only if it is available can an athlete realize his technical skill and successfully solve tactical problems. It has been established that the intensity of physical work performed by a handball player during the game ranges from moderate to maximum, and the main part of the load is work of a speed-power nature. It should not be forgotten that handball is an athletic game, during which the handball player can move in stride or jerk at different speeds and at different distances. At the same time, he jumps, throws the ball, etc. With that said, a true handball master should be, as a rule, a good athlete, which is unthinkable without versatile physical training.

There is an opinion that extended game tactical connections between players, mainly in the longitudinal direction, oblige handball players to increase playing intensity to possess the necessary data for high-speed maneuvers and creating favorable situations, especially in the final stage of attacks. At the same time, a number of experts emphasize that playing handball is an excellent tool for physical development and health promotion, and that the main part of the loads of modern handball should be speed-strength work.

Some experts believe that the high agility of modern handball requires more accurate and long passes during the game. In their opinion, in modern handball, the passes have become stronger and are often unexpected even for a partner: the power of throws when attacking the goal has also increased significantly, this requires an increase in the level of technical skill at a high speed of movement in the process of playing activity.

Determination of the relationship between some indicators of speed-strength and technical readiness of highly qualified handball players was the goal of research. Control exercises were used between the indicators reflecting the level of speed-power readiness and the duration of the ball possession. At the same time, the following tests were used as speed-strength tests: running with the ball, throwing the ball at a distance, throwing the ball at a distance.

The results of studies of a large group of specialists indicate that the total duration of possession of the ball during the game and the level of speed-strength readiness of handball players is in direct correlation. The correlation between different indicators of speed-strength readiness of highly qualified handball players is not a constant value and changes significantly with the age of handball players: the highest reliable value of the relationship between various indicators of speed-strength readiness takes place among highly qualified handball players aged 19-24 years (98-99%).

Thus, the analysis of the opinions of specialists both in various sports and in handball testifies to the great importance of speed-power qualities for increasing sports achievements. This can be seen especially clearly in sports that have a metric system for assessing sports achievements (kg, m, sec) and, to a lesser extent, in sports where the final result is determined in points and points.

In team, team sports, where the overall result of the meeting, as a rule, cannot objectively reflect the individual skill of each athlete, we consider it expedient to evaluate the individual skill of handball players by introducing the criterion of the quality of the game.

DISCUSSION

The rational construction of long-term training of highly qualified handball players is decisively conditioned by the laws of the formation of sportsmanship. The structure of competitive activity in a particular sport and, in particular, handball, the factors that determine its effectiveness, the patterns of adaptation of functional systems and mechanisms that carry the main load in the process of training and competitions, predetermine the growth rate of sports achievements.

The implementation of one or another variant of the structure of long-term training in handball is due to a complex of reasons, first of all, the age at which the athletes began to practice handball, as well as the nature of training at the first stages of long-term improvement. According to a number of specialists, differences in the rates of biological maturation, which determine a significant (up to 3-4 years) range of biological development, are also of great importance.

Some coaches and researchers believe that the traditional structure of long-term training, in which high results are achieved after 7-10 years of handball (women at 17-20 years old, and men at 18-22 years old), can be considered as basic, and the prospects further growth of achievements is largely associated with the implementation of one of the identified typical variants of the structure of long-term training, which to the greatest extent corresponds to the characteristics of a particular athlete.

The given data on the peculiarities of the formation of sportsmanship with different variants of the structure of long-term training should become one of the key guidelines for the differentiation and individualization of the long-term process of training handball players at different stages of sports improvement. They also make it possible to objectively assess the prospects of a particular handball player, comparing the individual course of the formation of his skill with the anatomical and physiological characteristics and adaptive capabilities of the body.

The constant growth of sports achievements in women's handball indicates that not all the available reserves of the body have been used. A review of special literature, the study of the experience of advanced coaches working with handball teams, show that an active search for directions to improve the technical and tactical skills of athletes is currently underway, taking into account the level of their speed-strength training.

Some scientists and handball coaches argue that the dynamics of the formation of the state of the highest readiness during the training year is due to many reasons. Among them are the individual characteristics of athletes: the structure of muscle tissue; the initial, hereditarily predetermined level of capabilities of the circulatory and respiratory systems; aerobic and anaerobic performance; mobility of adaptive reactions; resistance to maladjustment; the preserved adaptive resource, etc. No less important is the system of constructing annual training - its general structure, the orientation of the training process in different months of the year, the ratio of means and methods of training, the calendar of competitions and the construction of direct preparation for various competitions, etc.

It is known that the improvement of long-term adaptive reactions necessary to achieve the planned results in the process of sports training of handball players is formed in stages throughout the year, as well as in individual micro cycles. This is due to a number of factors: first, effective adaptation is possible only with a certain amount of stimuli and their optimal concentration in time; secondly, adaptation to various stimuli proceeds heterochronously. In particular, it is possible to achieve changes in the functional capabilities of skeletal muscles or cardiac muscle faster than the components of readiness, which, due to the diversity and complexity of the coordination structure of motor actions, along with morphological changes in the coordinated work of regulatory and executive systems.

The point of view of other well-known experts in handball deserves attention. In their opinion, an increase in the adaptive capabilities of individual organs and systems creates the necessary prerequisites for long-term adaptation of functional systems to integral manifestations of motor abilities, and the latter, in turn, determine the effectiveness of the organism's adaptation to the requirements of effective competitive

activity. This causes the gradual long-term adaptation of the athlete's body to the factors of training impact and the exceptional complexity of managing his adaptive reactions in the process of building various structural formations of the annual training process or a separate macrocycle.

However, it is necessary to remember that the effectiveness of adaptive reactions of handball players of various roles and levels of preparedness is determined by the dynamics of the load, its correspondence to the qualifications of athletes, their preparedness, the reactivity of functional systems in terms of the formation of adaptation responses to various stimuli.

There is an opinion that in a separate training macro cycle highly qualified handball players need a certain time for the formation of the whole complex of adaptive reactions that provide the state of the highest readiness for sports achievements. The specificity of the sport, which is expressed in the optimal structure of the athletes' fitness, is due to the ratio of various qualities and abilities to achieve high sports results. The individual characteristics of athletes here, too, significantly affect the rate of formation of long-term adaptation and the amount of work required to establish a given level of adaptive reactions.

CONCLUSION

In the process of studying the special literature on handball, it was found that the existing standards for assessing the level of general and special physical fitness of athletes do not change for a long time. In addition, there is no scientific substantiation of the proposed regulatory requirements, reflecting the level of special physical fitness of players at various stages of sports improvement.

It is known that the chosen method of increasing the level of speed-strength readiness of handball players makes an increase in the requirements not only to the scientific and methodological substantiation of the training process, but also to the current and long-term planning of sports training, the final test standards at various stages of the annual cycle in preparation for important competitions. In this regard, there is a need to change both the content of the educational process and make appropriate adjustments to it. Meanwhile, this important methodological position is still insufficiently reflected in the specialized literature.

At the present stage of handball development, the problem of specialized training of athletes is becoming increasingly important and is widely discussed in the special literature. It should be noted that at present there are no scientifically grounded recommendations related to the control and assessment of the improvement of their technical skill. Also, there is no consensus among the majority of specialists on the

control of competitive activity as one of the necessary conditions for the effectiveness of management of the process of training highly qualified handball players. The recommended assessment methods, as a rule, are either excessively laborious or do not fully reflect the nodal components of competitive activity.

The carried out theoretical analysis of scientific, methodological and special literature made it possible to determine the research problem, which consists in improving the speed and strength training of highly qualified handball players and to develop practical recommendations for the purposeful improvement of their technical and tactical skill.

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