

Research on Physical Training Method and Content of Sprinters

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Abstract. In modern track and field sports, sprint is a typical physical type of speed-type competitive sports, in which the physical condition of athletes is the most important competitive ability of sprint. On the basis of summarizing the research results and current situation of sprinters' special physical fitness at home and abroad in recent years, the structure and training content of sprinters' special physical fitness were studied. The research results show that the physical fitness training of sprinters consists of three parts: basic physical training, special physical training and comprehensive physical training. The strength training structure is mainly composed of continuous jumping of one leg or two legs, and a number of squats or semi-squat exercises. The speed quality training structure is mainly based on increasing the maximum speed and practicing at a short distance with maximum load intensity. As the main means; physical training can not only improve the physical quality of the sprinters, strengthen the core strength, but also improve the overall level of their own quality or athletic ability, in preparation for better performance.

Keywords: Sprinters, Physical training, Method.

1. Introduction

Track and field are the most popular sport in the world, sprint is an important part of track and field. Because of its strong ornamental, sprint is a sport that the world's sports powers attach great importance to [1]. At present, there are great divergences on the physical training of sprinters. They only regard single sport quality as physical training, but do not study sprinters' specific physical fitness as a whole. In order to make sprinters' physical training not confined to the single level of sport quality [2]. Athletes' physical ability plays a leading and central role in the composition of their competitive ability. Whether a sprinter can win in a fierce competition depends mainly on the level of physical fitness [3]. In view of this, taking the world's excellent sprinters as the research object, using the literature method, feature analysis method and other research methods, the training structure of the athlete's physical fitness is studied, and some basic control features are found out, which provides a basis for scientific guidance sprint training. . Therefore, it is necessary to strengthen the more scientific physical training methods and means of sprinters, so as to continuously improve the athletes' physical fitness level and competition level, which has important training value and practical significance for sprinters.

2. Methodology

Sprint and physical training are inseparable combinations, which refers to the comprehensive movement ability of the human body through the innate inheritance and acquired training in the morphological structure, potential ability and combination with the external environment [4]. According to the research purpose and content needs, use the Internet and consult relevant professional books to obtain some literature related to the research. Through the research and analysis of these documents and materials, grasp the relevant theory of physical training, and provide theoretical basis for this study. This paper studies and analyses the combined characteristics of sprinters' physical training structure. Sprinters are selected in Colleges and universities with the qualifications to try out high-level sports teams. Five sprinters are selected according to their ranks

and achievements in recent years' above-the-city sports meetings, of which two are top athletes. The third level is shown in Table 1 below.

Table 1. Basic statistics of athletes

Athlete number	body weight(kg)	Sport grade	Grade(s)
Athlete 1	69	Master general	10.33
Athlete 2	74	Class A	10.25
Athlete 3	70	Class A	10.36
Athlete 4	68	Master general	10.14
Athlete 5	73	Class A	10.28

The sprint project itself has the characteristics of high intensity and serious physical energy consumption. In recent years, the best scores of the world sprint have almost reached the limit that humans can reach, and the requirements for sprinters are getting higher and higher. Strong explosive power, high movement rate, reasonable running skills, good coordination and sensitivity, and strong psychological stability and psychological adjustment ability [5]. We visited the sprint coaches of High-level Track and field teams in relevant colleges and universities, interviewed them to understand the characteristics and problems of physical training in Colleges and universities, and discussed some corresponding improvement measures. Drawing on the opinions of relevant experts, an interview outline is drawn up. Visit some sprint coaches of track and field teams in Colleges and universities to learn about the characteristics and problems of physical training in Colleges and universities, and explore the corresponding improvement countermeasures. In the process of designing the questionnaire, we consult the relevant documents and materials, and revise the questionnaire repeatedly according to the opinions of training experts and coaches. On this basis, we design the relevant questionnaire.

Through interviews and surveys with relevant University experts and coaches, it is known that the commonly used methods of physical training for college coaches are intermittent training method and repetitive training method. However, there are few training methods such as game and match training and simulation training (see Table 2).

Table 2. Common physical training method

Training method	Score	Training method	Score
Continuous training method	28	Game and Competition Training Method	15
Simulated training method	6	Intermittent training method	77
Model training method	1	Procedural training method	1
Repeated training method	75	Circulation training method	45

At present, sprint competition is more and more influenced by modern scientific theory and technology, especially for top sprinters, whose physical training is more and more scientific. Sprint is based on anaerobic metabolism of non-lactic acid energy and lactic acid energy supply, the human body in the extreme strength to maintain high-speed exercise state to maximize the mobilization of organs, system functions against fatigue ability; sprinters in addition to the requirements for body shape, but also for physical function, sprint function evaluation of the main indicators of pulse, blood pressure (systolic pressure after intensive training) Increased or decreased diastolic blood pressure, faster recovery), and blood lactic acid. From the perspective of the sprint special point of view on the athlete's physical characteristics, we believe that the sprint special physical fitness is formed by the athlete's congenital inheritance and acquired training, and the athlete's ability to continue the movement in the sprint special extreme intensity exercise [6]. The physical training of sprinters is a training method developed for sports, so that athletes can get more training or improved training value for themselves. Physical fitness training emphasizes the combination with specific requirements. Specialized physical training that emphasizes training programs and content in training places great emphasis on the athletes' physical recovery training and the scientific management of the training process.

3. Result Analysis and Discussion

Mastering the advanced sprint technical movements and skills has become an important feature of modern short-distance competitive sports. Therefore, whether the physical training effect can meet this requirement has an extremely important role in improving sports performance. Using the most advanced science and medical technology to optimize all aspects of physical training, not only can improve the physical fitness of athletes, but also improve their training and highlight their special strength. It is inseparable from the growth of athletes' scientific training and the exploration of potential; it also relates to the physical structure of athletes, the functional level of system organs, the level of sports quality, the storage of energy and materials, the level of metabolism, the psychological factors and the will, and the external environment. All are closely related. Therefore, when examining the physical fitness system, we should take athletes as the starting point, and have a comprehensive and thorough description of the internal structure of their physical fitness and the adaptability of athletes to the external environment. After centrifugal contraction, muscles contract centripetally, using gravity to store energy in muscles, so that the natural elasticity of muscles generates kinetic energy and releases greater contraction force. Physical fitness training is the basis for successful completion of various sports training. Without good physical fitness, skills training and tactical training will become a mere formality without efficient physical fitness training, and the improvement of competitive ability will be difficult to guarantee.

Some research data show that when the athletes' maximum strength, speed strength and explosive power are strengthened, the athletes' performance has not been improved correspondingly. This is, the speed of development is not simply a matter of strength. The speed quality is clear in the methods, means, content and intensity of training, as shown in Table 3 below.

Table 3. Structure of speed training for sprinters

Starting to the highest speed(S)	Exercise distance(m)	Intermittent time(min)	Exercise frequency
8	100	3	6

Develop the stride length in the accelerated running stage and the stride length in the middle running stage. The training of developing the stride length in each stage is mainly to increase the stride length by using compulsory means, as shown in Table 4 below.

Table 4. Develop short running exercises

Training contents	Acceleration Stage	On-the-way running stage
Practice method	Slopes between 6 and 15 degrees Start-up, run-up and speed-up	Slopes between 6 and 15 degrees Accelerate downward

Sprinters should pay attention to the training of sports ability in training, which is one of the important data indicators to improve athletes' performance. Sprint is a kind of athletic sport. Scientific physical training is an important way and development platform to improve sprinters' technical and tactical training level and sports performance. It is also the basic condition for sprinters to endure high-intensity load training and competition. The sprint performance mainly depends on the special speed quality and the special strength quality, and the special speed quality includes the reaction speed, movement speed and displacement speed; the special strength quality includes the maximum muscle strength quality, explosive strength and muscle strength endurance. It is centered on the physical training practice that coaches guide athletes, and is closely linked to external factors that have a significant impact on sports training practices. No athlete can exert maximum muscle strength during high-speed sports. Therefore, the strength training of the 100-meter runner can only develop the greatest strength on the basis of improving the rapid strength. In the physical training process, it has a positive effect on the structure of each training program. For example, physical fitness training can effectively improve the explosive power of the athlete's muscles, so as to maximize their ability in the starting. That is to say, the traditional body training is aimed at a single sports quality, while

the physical training is to study and improve the athlete's athletic ability from a holistic and global perspective.

A lot of information shows that another difference between our country and foreign athletes is that the absolute speed of Chinese athletes is not as good as that of foreign athletes. Therefore, the speed training of sprinters should be based on the maximum speed and take certain measures (see Table 5).

Table 5. Use training methods to help develop maximum speed

Training method	Training conditions	Training purpose
	Practice on a 5 to 10-degree slope runway	Achieve advanced movement
Running downhill	Use electric tractor as traction tool	Increase absolute speed

Before the coaches and sprinters develop the scientific training plan, the coaches should strengthen theoretical study, continuously learn the relevant theories of scientific training, and timely learn the relevant theoretical results of the most advanced sports physiology and sports training in the world today. Its purpose is to enable athletes to develop strong physical ability and ability to adapt to complex environments, so as to unearth the potential contained in the athlete's body, thus achieving the athlete's competitive level and the athlete's tenacity. The process of sports training is a process of comprehensively improving the athletic ability of athletes. The establishment of the content of special listening training for sprinters is an important guarantee for improving athletes' athletic ability. Therefore, according to the characteristics of sprint events, the main factors that have an important impact on the performance level of sprinters, which are interrelated and mutually restrictive, form a whole, and establish the content system of sprinters' physical training. In the training of physical speed and endurance, the athletes can run at high speed for a long time. In the special physical training, the special physical training is a very important link. The outstanding performance is the training of athletes' special physical fitness and comprehensive competition physical fitness. Among them, basic physical fitness is the precondition of special physical fitness and comprehensive physical fitness. Special physical fitness is the decisive factor of comprehensive physical fitness, and comprehensive physical fitness is the ultimate goal of sprinters' physical training.

4. Summary

In a word, the choice of sprint training methods and means depends on whether they can be applied according to their aptitude and different people. In addition, according to the understanding of the technical characteristics of sprint events and the understanding of athletes' personality, some methods and means suitable for modern sprint training are selected and designed. In the physical training of athletes, we should not only pay attention to improving the way of physical training in an all-round way, but also pay attention to whether the proportion of training time is reasonable, but also through comprehensive physical training, such as psychological training and sprint recovery training, to achieve the overall development of athletes and improve the training level of athletes. In physical training, we must pay attention to the comprehensive development of basic physical ability, while highlighting the improvement of special physical fitness and the cultivation of practical ability of comprehensive physical fitness. Speed training methods and methods must be combined with speed strength training to increase the maximum speed, especially to increase the maximum displacement speed of the body center of gravity during the running. The overall level of self-quality or athletic ability will be improved, and a good foundation for training and competition will be achieved, so that better performance can be achieved.

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