

Research on Evaluation Index System of Basketball Players' Physical Ability Training Based on Visual Analysis

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Abstract: With the development of modern basketball, the confrontation of basketball has been continuously strengthened and the competition has become increasingly fierce. Both offensive and defensive are more active, active and efficient. Therefore, physical training has attracted more and more people's attention, and more and more methods and means of physical training. In order for a basketball player to have a major breakthrough in both technology and tactics, there must be sufficient physical reserves. Physical training should be consistent with the intensity of training and training, and strength training should be consistent throughout. Physical training for basketball players is to serve their skills and tactics. The physical training for athletes is only a means to improve their offensive and defensive skills. The index system of physical training is constructed to provide scientific, suitable and diversified training for athletes, so that the basketball players' own potential can be fully explored, the athletes' physical fitness level can be improved, and the development of basketball can be promoted.

1. Introduction

In 1891, Dr. Naismith invented basketball. In 1896, basketball was introduced to China. After more than one hundred years of development, it has developed into the world's three major sports. The development of basketball has become so fast and fierce [1]. Modern basketball is a combination of technology, wisdom, skills and physical strength. With the advancement of basketball professionalism, technology, ornamental, commercialization, industrialization, socialization, etc., the concept of basketball is constantly updated [2]. The offensive and defensive confrontation further evolved along the trajectory of "high intelligence, high physical strength, high speed, high intensity and high skill". It has promoted the development of modern basketball in both active and active directions, both offensive and defensive, making basketball players' physical fitness a decisive factor in controlling the performance of the game [3]. Physical fitness training has also attracted more and more people's attention, and there are more and more methods and means of physical training. In order for basketball players to have major breakthroughs in technology and tactics at the same time, they must have sufficient physical reserves [4].

Physical fitness is the technical and tactical basis of basketball, and it is an important guarantee for the overall style, tactical use and tenacious style of the team [5]. For athletes, only with good physical fitness level can they perform well in the fierce competition and effectively demonstrate their technical level [6]. When performing physical training for basketball players, training should be conducted on the characteristics of basketball. Scientifically construct the athletes' physical fitness evaluation index system, formulate the grade evaluation criteria for each individual athlete's physical fitness test indicators, and comprehensively and systematically evaluate the athlete's physical fitness [7]. The selection of physical fitness training indicators and the establishment of an indicator system are the "batonsticks" for physical training. The establishment of evaluation indicators and indicator systems depends to a large extent on people's understanding and understanding of the concept of physical fitness [8]. Athletes must be able to adapt to the fast attack and defense in basketball, and physical fitness should meet relevant requirements[9]. Scientifically guiding athletes' physical training is of great significance to promote the overall improvement of athletes' physical fitness[10].

2. The Purpose and Significance of the research on the Evaluation Index System of Physical Training

2.1. The purpose of research

With the development of modern basketball, the confrontation of basketball has been continuously strengthened and the competition has become increasingly fierce. Both offensive and defensive are more active, active and efficient. Therefore, the requirements for basketball players' physical fitness are getting higher and higher, and there is no good physical fitness as a guarantee. It is difficult for athletes to develop their athletic ability. Without good physical fitness as a guarantee, it is difficult to implement the "three from one big" training principle in the training process, and the athlete's ability to withstand the exercise load is also quite limited. In addition, in the current basketball training and competition, there is no good physical level as a guarantee, and the incidence of injuries will increase. In the modern basketball training theory, the international basketball community generally attaches great importance to the development of basketball players' physical fitness, and both regard physical fitness as an important goal and method for developing basketball competition training and improving athletes' performance. The status and role of basketball players' physical training is valued by more and more coaches and athletes.

2.2. Significance of the study

First of all, the research on the basketball player's physical training science system can deeply analyze the problems existing in the current basketball physical training in China, and propose corresponding training strategies for the basketball team's physical training state. Secondly, the level of physical training of basketball players in China is relatively backward. There is still a big gap between training methods, training content, training methods, and load monitoring and scheduling compared with foreign advanced countries. Studying the scientific system of basketball and mobilizing physical fitness training can further improve the theory of basketball physical training in China and provide theoretical guidance for the practice of basketball physical training. By constructing an indicator system for physical training, coaches can more intuitively, accurately, and scientifically study how to perform physical training for basketball players. Therefore, scientific, suitable and diversified training for its athletes can fully exploit the potential of basketball players, improve their physical fitness and promote the development of basketball.

3. The Main Components of Basketball Players' Physical Fitness

3.1. Special speed and overall strength

Speed is the soul of ball sports, and it is the vitality of ball sports. Whether it can complete each attack and defense accurately and quickly under high speed, high difficulty and strong confrontation is the development trend of modern basketball. Basketball players' special running speeds are different from those of track and field athletes. The sprint of track and field athletes is without any interference, and the basketball runner's run sometimes breaks through the defender and sometimes keeps up with the attacker. Therefore, in the fast running, it is necessary to regard the opponent's movements to be contingent and to have a high degree of stability. The quality of strength is the guarantee for the physical construction of basketball players. Modern basketball players have a high level of comprehensive strength training. All parts of the body, especially the upper and lower limbs, the waist and abdomen, as well as the ankles, knees, wrists, and fingers, should be specially trained to strengthen the overall strength. The overall strength is the comprehensive strength of the athletes in the coordination of the various sports links in the special activities of the ball.

3.2. Exercise endurance and mental function

Exercise endurance in physical training mainly refers to the ability to engage in special activities for a long time. The level of exercise endurance of basketball players' physical fitness training mainly depends on the functional ability of the functional system, the ability to effectively utilize the functional potential in the competition, the psychological quality and the will quality under

fatigue. The training of mental function and moral will quality plays an important role in the whole training process of athletes, from initial training to the end of sports career. In the modern and fiercely competitive ball sports competition, it is often necessary to carry out arduous confrontation in the case of adversity under backward conditions. At this time, the athlete's mental function and will quality often become the key factors to win. The purpose of mental function training is mainly to maintain a stable psychological state in the face of unbearable fatigue, so that the nervous system plays a role. Excavate and mobilize functional potential to complete competitions and training tasks. The improvement of mental function depends on the athlete's desire, will and self-regulation ability to complete the task.

Table 1 Sensitive age of each sports quality development

Sports quality	Sensitive age	Sports quality	Sensitive age	Sports quality	Sports quality
Absolute power	10-23	Speed of action	17-19	Balance ability	16-18
Relative strength	24-27	Maximum speed	17-22	Imitation ability	17-22
Speed power	17-23	Short-term endurance	20-25	Coordination	20-22
reaction speed	17-21	Long-term endurance	24-26	Sensitivity	20-22

4. Basic Principles for Basketball Players to Follow Physical Training

4.1. The principle of unified training volume and training intensity

In many training methods, the amount of training and the intensity of training are often placed in an opposite state. When the training intensity is increased, the training amount is generally reduced. Conversely, when the amount of training increases, the intensity of training tends to decrease. In basketball games, athletes are often required to be able to withstand long periods of heavy exercise and to withstand long periods of exercise. Therefore, for the physical training of basketball players, the unity of training intensity and training volume should be achieved. There are various ways to train basketball players' physical ability, including tactical training, technical training and jumping ability. Although there are many ways of physical training, we should realize that speed is the most critical factor to win the competition. Therefore, the physical fitness training for basketball players should focus on speed training, and should be based on the characteristics of speed adaptability and rhythm in basketball matches.

4.2. Strength training is the basic principle

Fierce basketball has put forward higher and higher requirements on the strength level of basketball players. In basketball, quick response to attack and defense, fighting under the basket and effective attack and defense are all inseparable from the strength quality of basketball players. In addition, whether athletes can give full play to their skills is closely related to their strength and quality. Therefore, strength training should be the basis of athletes' technical training. When basketball athletes' strength does not reach the corresponding level, skill training cannot achieve good results. Therefore, in the physical training of basketball players, strength training should be consistent throughout. Physical training for basketball players is to serve their skills and tactics. The physical training for athletes is only a means to improve their offensive and defensive skills. The physical training for basketball players should have some specific characteristics of basketball. It should be combined with skills and tactics to enable athletes to test and improve their skills in the process of physical training, and to consolidate their physical fitness while improving their skills. And development.

5. Design Steps and Methods of Evaluation Index and Index System for Basketball Players' Physical Fitness Training

5.1. Determining physical fitness test evaluation indicators and indicator system

The basketball athletes' physical fitness test evaluation index system consists of first-level indicators and second-level indicators. First determine the primary indicator and then determine the secondary indicator. The examples are as follows: Firstly, the first-level indicators are composed of five types of indicators: speed ability, jumping ability, general endurance, functional recovery ability and special skills, and then determine which secondary indicators are used for each type of first-level indicators. Such as speed ability, triangle turn back run, multi-point turn back run. Jumping ability, standing 10th jump, running high, continuous vertical jump. General endurance, 3 200 m or 1 500 m. Functional recovery ability, harvard bench test, heart rate recovery rate after quantitative load. Special skills, catching the ball at different positions after heavy load practice and stopping jump shot, fixed-point shooting after heavy load practice, etc. In 2000, China's national training team concentrated the best basketball players in the country, and also complied with the development trend of the world in terms of height, weight and age. The most important thing is to cultivate guards and forwards that conform to the development trend of modern basketball as soon as possible, and to divert the pressure from centers.

Table 2 Statistics of Aerobic Endurance Training Load and Forms of Basketball Players

Practice	Number of training groups	Number of exercises	Group interval (minutes)	Weekly practice (times)
800 meters	1-3	1-3	1-2	2-4
1500 meters	1-2	1-2	3-5	2-4
3200 meters	1	1	0	1-2
Climbing stairs	2-4	2-4	3-5	2-4
Comprehensive running	1-3	1-3	0	2-4

5.2. Determine the respective weights of primary and secondary indicators

After all levels of evaluation indexes of basketball players' physical fitness training level are defined, the weight of each index should be designed. For the evaluation criteria of secondary indicators, it is generally possible to make targeted determination according to the training stage and training level of the test object, and set reasonable evaluation criteria for each item of secondary indicators. According to the evaluation criteria of secondary indicators and the weight of each indicator, the total score is calculated. The evaluation criteria can be set up with 4-5 grades according to the percentile system. The score is excellent in 90-100, good in 80-90, average in 70-80, qualified in 60-70, and poor below 60. The first- and second-level indicators of physical fitness level mainly include functional indicators, skill indicators, sports quality indicators and psychological indicators. Functional indicators mainly include athletes' heart rate, maximum ventilation, and vital capacity. Sports quality indicators include speed ability, jumping ability and so on. Skill indicators mainly include basic technical level and special skills. Psychological indicators mainly include the degree of emotional stability, the reaction time of emergencies, and logical thinking.

6. Conclusion

Modern basketball is a highly antagonistic, fast-changing speed-powered sport that has high demands on basketball players' physical fitness. In the physical training of athletes, the principle of speed training as the core and strength training should be upheld. Physical training is the adaptive reshaping of human organs and functional systems in terms of structural and functional capabilities, and is the reshaping of the athlete's psychological will. The requirements of the competition practice for athletes' physical ability are endless, and efforts should be made to reach the maximum. Efforts

should be made to improve athletes' physical fitness reserves, so that the team's overall technical and tactical level will have a new leap. Reflect that the physical training of basketball players must be carried out throughout the annual training cycle. Coaches must have a deep understanding of the main factors that affect the composition of basketball players' physical fitness level, which is the premise and foundation for innovation and continuous improvement of physical fitness training. The level and maintenance degree of physical fitness training must be checked and evaluated through a scientific index system, aiming at finding and determining the problems existing in the whole team and individual physical fitness training and the direction and breakthrough for improvement and improvement.

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